

3rd
EDITION

Rural Development **Principles, Policies** **and Management**

KATAR SINGH

SAGE TEXTS



Rural Development

Rural Development

Principles, Policies and Management

Third Edition

Katar Singh

Copyright © Katar Singh, 2009

All rights reserved. No part of this book may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage or retrieval system, without permission in writing from the publisher.

First published in 1986

This Third Edition published in 2009 by



SAGE Publications India Pvt Ltd

B1/I-1 Mohan Cooperative Industrial Area
Mathura Road, New Delhi 110 044, India
www.sagepub.in

SAGE Publications Inc

2455 Teller Road
Thousand Oaks, California 91320, USA

SAGE Publications Ltd

1 Oliver's Yard, 55 City Road
London EC1Y 1SP, United Kingdom

SAGE Publications Asia-Pacific Pte Ltd

33 Pekin Street
#02-01 Far East Square
Singapore 048763

Published by Vivek Mehra for SAGE Publications India Pvt Ltd, typeset in 10/12 pt Palatino by Star Compugraphics Private Limited, Delhi and printed at Chaman Enterprises, New Delhi.

Library of Congress Cataloging-in-Publication Data Available

ISBN: 978-81-7829-926-6 (PB)

The SAGE Team: Anjana C. Saproo, Vikas Jain, Mathew P.J. and Trinankur Banerjee

To
the fond memory
of
my beloved parents

Contents

<i>List of Tables</i>	xi
<i>List of Figures</i>	xiii
<i>List of Boxes</i>	xiv
<i>Preface to the Third Edition</i>	xv
<i>Preface to the Second Edition</i>	xvii
<i>Preface to the First Edition</i>	xix
1. Introduction	1
■ Concepts and Connotations of Rural Development	2
■ Basic Elements of Rural Development	3
■ Growth versus Development	4
■ Why Rural Development	5
■ Rising Expectations and Development	6
■ Development and Change	6
■ Human Beings as the Cause and Consequence of Development	7
■ Some Dilemmas in Development	8
■ Main Points	11
■ Questions for Discussion	13
2. Rural Economy of India	14
■ Introduction	14
■ Size and Structure of the Rural Economy	15
■ The Characteristics of the Rural Sector	21
■ The Role of the Agricultural Subsector	25
■ The Role of the Non-agricultural Subsector	29
■ Challenges and Opportunities	32
■ Main Points	34
■ Questions for Discussion	36
3. Measures of Development	37
■ Introduction	37
■ Measures of Level of Rural Development	38
■ Measures of Income Distribution	46
■ Measures of Development Simplified	49
■ Concepts and Measures of Rural Poverty	50

■ Main Points	56
■ Questions for Discussion	57
4. Some Paradigms of Rural Development	59
■ Introduction	60
■ The Modernisation Theory	61
■ The Dependency Theory of the Marxist School	62
■ Rosenstein-Rodan's Theory of the 'Big Push'	64
■ Leibenstein's 'Critical Minimum Effort Thesis'	64
■ Lewis' Model of Economic Development	65
■ Gunnar Myrdal's Thesis of 'Spread and Backwash' Effects	67
■ The Human Capital Model of Development	68
■ The Gandhian Model of Rural Development	69
■ Development Theories from Other Social Sciences	73
■ Main Points	74
■ Questions for Discussion	76
5. Determinants of Rural Development	78
■ Introduction	79
■ Changes in Output	80
■ Natural Resources	82
■ Human Resources	86
■ Capital	87
■ Technology	90
■ Organisational and Institutional Framework	92
■ Relation between Rural Development and Its Determinants	95
■ Main Points	95
■ Questions for Discussion	98
6. Rural Development Policies	99
■ Introduction	99
■ Freedom, Control and Public Policy	100
■ Need for a Rural Development Policy	101
■ Goals of Rural Development Policy	103
■ Hierarchy of Policy Goals	104
■ Rural Development Policies in India	106
■ Globalisation and Rural Development	125
■ Main Points	128
■ Questions for Discussion	130
7. Strategies for Sustainable Development	131
■ Introduction	131
■ The Concepts of Sustainability and Sustainable Development	132
■ Some Indicators of Non-sustainable Development	135
■ A Critical Review of India's Strategies of Rural Development	141

■ Some Elements of a New Strategy for Sustainable Development	144
■ Main Points	152
■ Questions for Discussion	153
8. Policy Instruments of Rural Development	155
■ Introduction	155
■ A Conceptual Framework	156
■ An Action System	159
■ Policy Instruments	159
■ Main Points	175
■ Questions for Discussion	177
9. Equity-oriented and Growth-oriented Programmes	178
■ Introduction	178
■ Equity-oriented Programmes	179
■ Growth-oriented Programmes	184
■ Main Points	195
■ Questions for Discussion	197
10. Poverty and Unemployment Eradication Programmes	198
■ Introduction	198
■ Current Poverty Scenario and Trends	199
■ Rural Employment Scenario	204
■ Poverty and Unemployment Alleviation Programmes	207
■ Social Welfare-oriented Programmes (SWOP)	216
■ Main Points	218
■ Questions for Discussion	220
11. Natural Resources and Infrastructure Development Programmes	221
■ Introduction	222
■ Natural Resources-based Programmes	222
■ National Agriculture Insurance Scheme (NAIS)	230
■ Pilot Weather-based Crop Insurance Scheme (WBCIS)	231
■ Infrastructure Development Programmes	231
■ Main Points	240
■ Questions for Discussion	241
12. Planning for Rural Development	243
■ Introduction	243
■ Levels and Functions of Planning	244
■ Decentralisation of Planning	246
■ Methodology of Micro-level Planning	247
■ Methodology for Block- and District-level Planning	250
■ Main Points	257
■ Questions for Discussion	259

13. Organising for Rural Development	260
■ Introduction	260
■ A Detour to Organisational Models	262
■ The Search for a New Paradigm	265
■ Criteria for Designing an Appropriate Organisation	267
■ Government Organisations	268
■ Panchayati Raj Institutions (PRIs)	270
■ Cooperatives	273
■ Voluntary Agencies/Non-governmental Organisations	275
■ Corporations and Rural Development	278
■ Main Points	281
■ Questions for Discussion	282
14. Financing Rural Development	283
■ Introduction	283
■ Domestic Institutional Sources	285
■ The Role of Non-institutional Agencies	296
■ Deficit Financing or Controlled Inflation	296
■ Foreign Sources of Funds	298
■ Main Points	304
■ Questions for Discussion	307
15. Implementation, Monitoring and Evaluation	309
■ Introduction	309
■ Project Implementation	311
■ Project Control	315
■ Integration and Coordination	315
■ People's Participation in Implementation	316
■ Project Monitoring	317
■ Project Evaluation	319
■ Main Points	326
■ Questions for Discussion	327
<i>References and Select Bibliography</i>	329
<i>Index</i>	338
<i>About the Author</i>	347

List of Tables

2.1	Value of Major Agricultural Inputs and Output in India at 1999–2005 Prices	20
2.2	Production of Food Grains, Milk and Fish in India	20
2.3	Distribution of Operational Landholdings in India, 1995 and 2001–02	22
2.4	Average Yield Rates in kg/ha of Principal Crops in India and Selected Countries, 2004–05	23
2.5	Rural–Urban Literacy Rates in India, 1951–2001	25
2.6	Share of Agriculture and Allied Activities in India’s GDP at Factor Cost	26
2.7	Value of India’s Exports and Imports and Share of Agricultural Commodities	27
3.1	Life Expectancy at Age 1, Infant Mortality and Literacy: Actual Data and Index Numbers (Early 1970s)	41
3.2	Indicators of Rural Development by Group	42
3.3	Simple and Weighted Composite Indices of Rural Development by State for the Years 1981, 1991 and 2001	43
3.4	Basic Variables for Computing Human Development Index for Greece and India	44
3.5	Indices of Life Expectancy, Educational Attainment, Adjusted Income and HDI for Greece and India	46
3.6	Relative Shares of Aggregate Income Received by Various Decile Groups of Households in Aligarh District in 1963–64 and 1968–69	47
3.7	State Specific Poverty Lines in India in 2004–05	53
8.1	Public and Private Investment in Agriculture and Allied Sectors in India at 1999–2000 Prices	162
8.2	Amount of Subsidies Granted to Indian Agriculture	164
10.1	Estimates of Poverty and Trends in Poverty	200
10.2	Number and Percentage of Population below the Poverty Line by States, 2004–05 (Based on URP Consumption)	202
10.3	Number and Percentage of Population below the Poverty Line by States, 2004–05 (Based on MRP Consumption)	203
10.4	Employment and Unemployment by Usual Principal Status in India	205
10.5	Unemployment Rates for 55th Round and 61st Round of NSSO in Rural India	205

10.6	Unemployment Rates for 55th Round and 61st Round of NSSO in Urban India	206
14.1	Outlay and Expenditure in Public Sector on Agriculture and Allied Activities in India's Five Year Plans	287
14.2	Flow of Institutional Credit to Agriculture and Allied Activities in India by Agency	292
14.3	External Sources of Development Assistance to India	298
14.4	Inflow of Foreign Aid in the Form of Loans and Grants in India	303
14.5	India's External Debt Outstanding as on End of March of Selected Years	304
15.1	A Conceptual Design for Impact Measurement	324

List of Figures

3.1	Distribution of Farm Family Income in Aligarh District in 1963–64 and 1968–69	48
5.1	Determinants of Rural Development	80
5.2	Role of Mother Nature/Environment in Economic Growth	83
5.3	A Typical Environmental Kuznets Curve	84
6.1	Hierarchy of Rural Development Policy Goals	105
8.1	A Conceptual Framework for Policy Analysis	156
8.2	Diagram of an Action System	160
8.3	Effect of a Pollution Tax	168
14.1	Sources of Funds for Rural Development	284
15.1	Mechanics of Impact Assessment of a Programme like Operation Flood	323
15.2	Mechanics of Impact Assessment of a Flood Control Project	323
15.3	Mechanics of Impact Assessment of a Land Settlement Project	324

List of Boxes

1.1	Basic Elements of Rural Development	4
2.1	Some Salient Characteristics of India's Rural Sector	21
4.1	Basic Values and Premises underlying the Gandhian Model of Development	70
6.1	Highlights of National Agricultural Policy 2000	115
6.2	Objectives of National Policy for Farmers	124
8.1	A Few Examples of Court Orders for Prevention of Pollution	175
9.1	Basic Premises of Community Development Programme	180
9.2	Activities of the Intensive Agriculture District Programme in India	186
10.1	Large-scale Diversion of PDS Food Grains in India	208
11.1	Components of Minimum Needs Programme	232
13.1	Functions of an Organisation	261
13.2	Criteria for Designing an Appropriate Organisation	267
13.3	A Conceptual Framework for Bureaucratic Reorientation	270
14.1	Certain Elements of a Favourable Environment for Foreign Investment	300
14.2	Financing of the Operation Flood (OF) Programme	302

Preface to the Third Edition

This edition of the book is brought out in response to the feedback that I got from some of the teachers, students and my colleagues about the second edition as well as my own realisation of the need to update some of the information and reorganise some of the chapters. The overwhelming success of the first two editions of the book, which together had a long innings of over two decades, provided me the rationale for revising the book.

This edition comprises 15 chapters as against 16 chapters in the second edition. The major changes incorporated in this edition include (i) the addition of a new chapter (Chapter 7); (ii) reorganisation of five chapters (Chapters 8–12) of the second edition into three chapters (Chapters 9–11) by deleting some unnecessary details of the rural development programmes included in earlier chapters but adding a few new programmes; (iii) updating of the data and information presented in the second edition to the extent possible with the available information, including internet resources; (iv) addition of new tables presenting latest available estimates of poverty lines and incidence of poverty in India by state; (v) addition of two new sections—‘Main Points’ and ‘Questions for Discussion’—to each of the 15 chapters; and (vi) inclusion of 15 new boxes highlighting the salient features of some of the important programmes.

Chapters 1 to 6, Chapter 8 and Chapters 12–15 are revised and updated versions of earlier chapters of the same titles. Chapter 7 and Chapters 9–11 are new chapters. Chapter 7 is exclusively devoted to the presentation and discussion of a new strategy of sustainable development. It represents a significant addition to this edition of the book. Chapter 9, which is titled ‘Equity-oriented and Growth-oriented Programmes’, is rewritten by merging the earlier chapters on ‘Community Development Programme’ (Chapter 8), ‘Intensive Agricultural District Programme’ (Chapter 9), ‘Special group- and Area-specific Programmes’ (Chapter 10) and ‘Operation Flood’ (Chapter 11). The chapter retains all the salient features of the earlier programmes but omits unnecessary details. Chapter 10 is titled ‘Poverty and Unemployment Eradication Programmes’. Besides, retaining the salient features of the Integrated Rural Development Programme (Chapter 12), it also includes salient features of a few other programmes not included in the second edition, such as the Public Distribution System, and new sections on rural poverty scenario and the un-employment scenario. Chapter 11 titled ‘Natural Resources and Infrastructure Development Programmes’ includes some of programmes included in Chapter 10 of the second edition and few other programmes such as the National Watershed Development Programme for Rain-fed Areas, National Afforestation Programme, Twenty Point Programme and National Common Minimum Programme. I hope this edition will also be as useful as the first two editions of the book.

Several people contributed to the revision of the second edition of the book. In particular, Late Shri Tejeshwar Singh, former Managing Director, SAGE Publications India Private Ltd, provided me the needed motivation and encouragement, as in the case of the second edition, to undertake the task. Dr Sugata Ghosh, Vice-President, Commissioning and Ms Anjana Saproo, Commissioning Editor, facilitated the project by providing me the Microsoft Word version of the second edition of the book and rendering valuable advice from time to time. Dr Anil Shishodia helped me with information about relevant websites. Most of the work on updating the data and the finalisation of various chapters of the book was done in Hastings, New Zealand, where I spent five months with my son, Arun K. Singh and his family. There I got a congenial environment, free from all kinds of distractions to do my work. Arun provided me the required logistics support and helped with computer software, and my wife, Vimala Singh, provided me the needed inspiration and moral support to finish up the work in time. I am thankful to them all.

Finally, I am thankful to the India Natural Resource Economics and Management (INREM) Foundation for providing me the needed facilities and a congenial environment for working on this project.

Hastings, New Zealand
18 February 2007

Katar Singh

Preface to the Second Edition

Students and teachers of rural development received the first edition of the book very well. It had a long innings of over a decade. Recently, some of my colleagues and students suggested that I revise and update the book, and I also realised the need to do so. However, I did not find the time nor had a strong will to start the work. I also thought that some younger teacher would do a better job of writing a new textbook on the subject. But, as far as I know, no good textbook on the subject has since appeared. However, it was not this that got me started. The real impetus to revise the book came from no less a person than Mr Tejeshwar Singh, Managing Director, SAGE Publications, who wrote to me in October 1997 urging me to revise the book. I wrote back to Mr Singh in the affirmative and set a deadline for the end of January 1998 for myself. In the first week of January 1998, I received, along with New Year's greetings, an enquiry from him about the status of the book. As I was not able to make much headway until then due to my various other preoccupations, I had to seek an extension of the deadline, which was granted. Thereafter, he religiously sent me reminders until I finally wrote to him that the revision work was almost over, and that the manuscript would be couriered to him by the end of June. I kept my word this time. So the real credit for this edition of the book must go to Mr Tejeshwar Singh, and I am thankful to him for this, as also for his comments and his personal interest in this project.

I have updated, substantially revised and augmented Chapters 2, 3, 4, 11, 14 and 15, and dropped Chapter 8, as in my opinion, it did not serve any useful purpose, and merged Chapters 17 and 18 into one chapter on Implementation, Monitoring and Evaluation. The remaining chapters were also revised and updated wherever necessary. So this second edition of the book comprises 16 chapters. While revising them, I took into consideration the comments made by various reviewers of the first edition, the suggestions made by Mr Tejeshwar Singh, and the feedback that I received from my students and colleagues at the Institute of Rural Management (IRMA). The revised edition retains all the strengths of the first one, is trimmed of unnecessary matter and adds quite a few new things to most chapters. Like the first edition, this one also is primarily addressed to students, teachers, trainers and researchers interested in rural development, and practitioners working in rural development organisations. I hope readers will find it better than the first one.

Many persons helped me in revising and updating the book. My wife, Vimala Singh, willingly (and many times unwillingly), allowed me to work long hours on holidays and in the evenings after office hours on weekdays. My son, Dr Anil Shishodia, being an economics teacher himself, helped me with data and other relevant literature, besides proofreading and correcting many chapters. As in the case of the first edition, my personal assistant, Mrs Lissy Varghese, aptly handled various secretarial and administrative chores, painstakingly

word-processed the manuscript and saw to it that I met the deadline. Mr Eric Leo, my secretary, also helped a lot in word processing, making figures, tables and printing the text. Mr Oliver Macwan carefully word-processed all the tables included in Chapter 2. I am grateful to them all and thank them for their ungrudging and willing help and cooperation, without which it would have been very difficult for me to complete the revision of the book. Last but not least, I am highly thankful to Ms Omita Goyal, Managing Editor, and Ms Jaya Chowdhury, Chief Desk Editor, SAGE Publications, for processing the manuscript expeditiously and bringing out the book in such a short period of time.

Anand
6 August 1998

Katar Singh

Preface to the First Edition

This book is the outcome of more than two decades of my professional experience in teaching, training, research and extension activities in the field of agricultural and rural development. From July 1961, when I started my professional career as Senior Research Assistant in charge of a research-cum-extension project in farm planning, I have had diverse experiences ranging from handling 'nuts and bolts' type jobs to building conceptual and quantitative models of development. Most of the material presented in the book is based on my own ideas, observations and research, and has been tested in some form or the other in my undergraduate and postgraduate classes, and in various short-term training programmes at both the G.B. Pant University of Agriculture and Technology, Pantnagar, and the Institute of Rural Management (IRMA), Anand.

The book consists of 18 chapters which are grouped into three parts. Part I comprises five chapters, which are devoted to an exposition of the meaning, objectives, measures, hypotheses and determinants of rural development. Part II contains eight chapters, which deal with rural development policies, policy models, policy instruments and selected rural development programmes followed in India. Part III includes five chapters which together cover various organisational and managerial aspects of rural development, such as planning, organising, financing, implementing, monitoring and evaluation. Thus, the book is a comprehensive treatise on rural development covering all the three important aspects of the subject—principles, policies and management.

This book is written for all those interested in contributing towards, and acquiring knowledge about, rural development. More specifically, this book is addressed to teachers, trainers, researchers, students and agencies interested in rural development. In particular, it examines the meaning of rural development, its pace and level, the lessons learned from India's experience with various rural development programme, and how these programmes should be managed.

In writing this book and in the development of my thoughts and ideas about agricultural and rural development, I have benefited a great deal from my interaction with my teachers, colleagues, students, people in the rural areas, policy makers, planners, bankers and from the writing of many development theorists. To name them all would be impossible and to mention a few invidious. I extend my sincere thanks to them all. My greatest debt is to my parents, Late Shrimati Anandi Singh and Late Shri Rajvir Singh, who taught me, through their work and attitude, the basics of farm and household development and management. My formal education has served only to corroborate and enrich what I learnt from them. I thank my wife, Vimala Singh, who kept me free from various household responsibilities and spent many lonely evenings and holiday ungrudgingly while I worked on this book.

I am extremely grateful to Shri R. N. Haldipur, Director, IRMA, who granted the permission and provided the necessary facilities and a congenial environment for writing this book, and whose advice and encouragement during the course of this work was invaluable. My sincere thanks are also due to Dr G. V. K. Rao, former member, Planning Commission and currently a member of IRMA's Board of Governors, for his valuable advice and suggestions to improve the book.

Finally, I want to thank my secretary, Mrs Lissy Varghese, who so willingly and carefully typed the final as well as earlier drafts of this book. Her cheerfulness, meticulous work and patience made writing easier, quicker and more of a pleasure.

Anand
February 1986

Katar Singh

1

Introduction

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define and elaborate the basic concepts and elements of rural development;
- distinguish between development and economic growth, and development and change;
- elaborate the rationale for rural development in India;
- explain the role of human beings as the pivot of development and
- illustrate the dogmas in rural development.

The term 'rural development' is a subset of the broader term 'development'. Howsoever we define it, development is a universally cherished goal of individuals, families, communities and nations all over the world. Development is also natural in the sense that all forms of life on planet earth have an inherent urge to survive and develop. Given these two attributes, that is, its universal supremacy as a goal and its natural occurrence, development deserves a scientific study and analysis. Hence, it is not surprising that the subject of development has been studied by scholars of all faiths, ideologies and disciplines. So much has been written and said about development that one finds it difficult to justify yet another book on this subject. However, it is my conviction that there is need for a textbook on rural development; a book that churns

out valuable insights and practicable lessons from the vast literature that is available on the subject and synthesises them in meaningful forms. This book is intended to serve that purpose. That such a book was needed was amply evident from the first and second editions of the book that have had a long innings of over two decades. Having said this, I now proceed to examine some of the commonly used connotations and definitions of development in general and rural development in particular. The objective is to arrive at a commonly acceptable definition that is easy to understand and use.

CONCEPTS AND CONNOTATIONS OF RURAL DEVELOPMENT

‘Development’ is a subjective and value-loaded concept and, hence, there cannot be a consensus as to its meaning. The term is used differently in diverse contexts. It basically means ‘unfolding’, ‘revealing’ or ‘opening up’ something which is latent. When applied to human beings, it therefore means unfolding or opening up their potential powers. Generally speaking, the term development implies a change that is desirable. Since what is desirable at a particular time, place and in a particular culture may not be desirable at other places or at other times at the same place and in the same cultural milieu, it is impossible to think of a universally acceptable definition of development. But, generally speaking, development could be conceptualised as a set or vector of desirable societal objectives or a development index, which does not decrease over time (Pearce et al. 1990: 2–3). Some of the objectives that are usually included in the set are as follows:

1. Increase in real income per capita (economic growth).
2. Improvement in distribution of income (equity).
3. Political and economic freedom.
4. Equitable access to resources, education, health care, employment opportunities and justice.

Thus defined, the concept is applicable at all levels ranging from individuals to communities, and nations and the world as a whole. Development is cherished by all individuals, communities and nations, irrespective of their culture, religion and spatial location.

These days, sustainable development has become a buzzword. According to the World Commission on Environment and Development (WCED 1987: 43), ‘Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’ This definition underscores the need for society to ensure inter-generational equity in the sense that the present generation does not consume so much as to foreclose the option of the future generations to enjoy at least the present level of consumption and well-being. In simple words, sustainable development implies a process in which the set of desirable societal objectives or the development index does not decrease over time. Constancy of natural capital stock—including natural resources and the environment—is a necessary condition for sustainable development. The set of ‘sufficient conditions’ includes an appropriate

institutional framework and governance system for implementation of sustainable development policy at both the national and international levels.

The term rural development connotes overall development of rural areas¹ with a view to improve the quality of life of rural people. In this sense, it is a comprehensive and multidimensional concept, and encompasses the development of agriculture and allied activities; village and cottage industries; crafts, socio-economic infrastructure, community services and facilities and, above all, the human resources in rural areas. Rural development can be conceptualised as a process, a phenomenon, a strategy and a discipline. As a *process*, it implies the engagement of individuals, communities and nations in pursuit of their cherished goals over time. As a *phenomenon*, rural development is the end result of interactions between various physical, technological, economic, socio-cultural and institutional factors. As a *strategy*, it is designed to improve the economic and social well-being of a specific group of people, that is, the rural poor. As a *discipline*, it is multidisciplinary in nature, representing an intersection of agricultural, social, behavioural, engineering and management sciences. In the words of Chambers (1983: 147):

Rural development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in the rural areas to demand and control more of the benefits of rural development. The group includes small scale farmers, tenants and the landless.

Thus, the term 'rural development' may be used to imply any one of the abovementioned connotations. To avoid ineffective floundering among the myriad definitions, we shall define rural development as 'a process leading to sustainable improvement in the quality of life of rural people, especially the poor'.

In addition to economic growth, this process typically involves changes in popular attitudes and, in many cases, even in customs and beliefs. In a nutshell, the process of rural development must represent the entire gamut of changes by which a social system moves away from a state of life perceived as 'unsatisfactory' towards a materially and spiritually better condition of life. The process of rural development may be compared with a train in which each coach pushes the one ahead of it and is, in turn, pushed by the one behind, but it takes a powerful engine to make the whole train move. The secret of success in rural development lies in identifying and, if needed, developing a suitable engine to attach to the train. There are no universally acceptable blueprints to identify appropriate engines of rural development, if at all they exist. It is a choice that is influenced by time, space and culture.

BASIC ELEMENTS OF RURAL DEVELOPMENT

Whatever the geographic location, culture and historical stage of development of a society, there are at least three basic elements which are considered to constitute the 'true' meaning of rural development. They are as follows (Box 1.1) (Todaro 1995: 16–18):

Box 1.1 Basic Elements of Rural Development

1. *Basic Necessities of Life*: People have certain basic needs, without which it would be impossible (or very difficult) for them to survive. The basic necessities include food, clothes, shelter, basic literacy, primary health care, and security of life and property. When any one or all of them are absent or in critically short supply, we may state that a condition of 'absolute underdevelopment' exists. Provision of basic necessities of life to everybody is the primary responsibility of all economies, whether they are capitalist, socialist or mixed. In this sense, we may claim that economic growth (increased per capita availability of basic necessities) is a necessary condition for improvement of the 'quality of life' of rural people, which is rural development.
2. *Self-respect*: Every person and every nation seeks some sort of self-respect, dignity or honour. Absence or denial of self-respect indicates lack of development.
3. *Freedom*: In this context, freedom refers to political or ideological freedom, economic freedom and freedom from social servitude. As long as a society is bound by the servitude of men to nature, ignorance, other men, institutions and dogmatic beliefs, it cannot claim to have achieved the goal of 'development'. Servitude in any form reflects a state of underdevelopment.

The new economic view of development considers reduction or elimination of poverty, inequality and unemployment as an important index of development. Seers (1969: 3) succinctly addressed the basic question of the meaning of development when he wrote:

The questions to ask about a country's development are therefore: What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, then, beyond doubt, this has been a period of development of the country concerned. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result 'development' even if per capita income doubled.

Some selected measures of development are presented in Chapter 3 of this book.

GROWTH VERSUS DEVELOPMENT

While economic growth is an essential component of development, it is not the only one, as development is not a purely economic phenomenon. In the ultimate sense, it must encompass more than the material and financial aspects of people's lives. Development should, therefore, be perceived as a multidimensional process, involving the reorganisation and reorientation of both economic and social systems. In addition to improvements in the level and distribution of incomes and output, it also involves radical changes

in institutional, social and administrative structures, and values and ethos of individuals and communities. To illustrate the difference between economic growth and development, one could consider the cases of states of Punjab and Kerala in India. The former ranks higher than the latter in terms of level of economic growth as measured by average per capita income alone, but the latter ranks superior to Punjab in terms of development as measured by—besides per capita income—literacy rate, infant mortality rate, sex ratio, and law and order situation. Finally, although development is usually defined in a national context, its widespread realisation may necessitate fundamental modifications of the international economic, social and political systems as well.

The Vedic prayer *sarve bhavantu sukhinaha, sarve santu niramayaha*, that is, 'May everybody (in this universe) be happy and healthy,' highlights the global and multi-dimensional nature of development.

WHY RURAL DEVELOPMENT

Since time immemorial, India has been—still continues to be and will remain in the foreseeable future—a land of village communities. As a matter of fact, the village was the basic unit of administration as far back as the Vedic age. There is a reference to *gramini* (village leader) in the *Rig Veda*, the oldest of Indian scriptures. The predominantly rural character of India's national economy is reflected in the very high proportion of its population living in rural areas. It was 89 per cent in 1901, 83 per cent in 1951, 80 per cent in 1971, 74 per cent in 1991 and 72 per cent in 2001. With more than 742 million of its people living in rural areas and with agriculture—including forestry and fishing—contributing about 18 per cent of its gross domestic product (GDP) at current prices in 2007, no strategy of socio-economic development for India that neglects rural people and agriculture can be successful. The rural character of the economy and the need for regeneration of rural life was stressed by Mahatma Gandhi. He wrote in *Harijan* on 4 April 1936 (cited in, Anonymous 1978: 2, 31):

India is to be found not in its few cities but in its 7,00,000 villages. But we town dwellers have believed that India is to be found in its towns and the villages were created to minister to our needs. We have hardly paused to enquire if those poor folk get sufficient to eat and clothe themselves with and whether they have a roof to shelter themselves from sun and rain.

He further wrote in *Harijan* on 29 August 1936 (cited in, Anonymous 1978), 'I would say that if the village perishes, India would perish too. It will be no more India [*sic*]. Her own mission in the world will get lost. The revival of village life is possible only when it is no more exploited.'

Rural development is, therefore, an absolute and urgent necessity in India now and will continue to be so in future. It is the *sine qua non* of development of India.

RISING EXPECTATIONS AND DEVELOPMENT

The common man in India, as also in other developing countries, expects a higher standard of living for himself, his family, his community and his nation. Particular expectations, of course, differ from person to person and from region to region, but the expectation of a marked improvement in material conditions of life is general throughout the world. People want and expect to have better diet, clothes, houses, education, a secured life and freedom from servitude. This is the revolution of expectations that has swept over the third world countries.

There are many explanations for this phenomenon. First, the demonstration effect of the rural elite, urban rich and foreign tourists engaging in ostentatious consumption of exotic and luxurious goods has distorted the consumption and utility functions of the poor. Second, films, radio, television and advertising have exposed the masses to modern gadgets and lifestyles, and have thus aroused their expectations. Third, local and national politicians have assured the rural poor of the modern amenities of life, if they would vote for them. Fourth, the central governments have declared time and again that the eradication of poverty is their major policy goal. Through these media, the common man has first learned about the new products, gadgets and services; then, come to want them and, now, to demand them.

The economies of most developing countries (including India) cannot possibly fulfil these expectations in the immediate future and there is bound to be a collision between rising expectations and economic reality. The outcome will vary from country to country, but it will certainly involve disillusionment, demoralisation, agitations and political upheavals, violence and several other antisocial activities such as thefts, murders, smuggling and trafficking in narcotics. It is this that makes rapid agricultural and economic development a national imperative in India to bridge the gap between rising expectations and economic reality.

DEVELOPMENT AND CHANGE

Development is both a cause and a consequence of change. There is a two-way relationship between them, that is, development influences and is influenced by change. The change implies a physical, technological, economic, social, cultural, attitudinal, organisational or political change. Whereas all manifestations of development can be traced to some change somewhere, sometimes not all changes lead to development. A change may be either for better (development) or for worse (retrogression). In the context of rural development, a 'change' may be considered to be an instrument which can be used to promote rural development. In India, the introduction of technological changes in the mid-1960s (new high-yielding varieties of crops, fertilisers, improved farm machinery and pesticides) led to the so-called Green Revolution in agriculture. Similarly, technological innovations such as modern milk processing and feed processing plants, artificial insemination of dairy animals and organisational innovations such as the Anand-pattern

dairy cooperatives introduced in India on a large scale in the early 1970s under the Operation Flood (OF) programme, contributed significantly to the modernisation and development of the dairy industry of the country. Elsewhere, such as in Taiwan and the People's Republic of China (PRC), agricultural development was largely a result of institutional reforms, especially land reforms and technological advances. Karl Marx was one of the great advocates of revolutionary (socio-economic) change as an instrument of development.

A change may occur naturally or autonomously, or may be induced. A development manager may accelerate the pace of development by both inducing a desirable change in a given system and by properly directing the autonomous change. It is important that the likely impacts of a contemplated change on various segments of the society be carefully evaluated *ex ante* (before the change is introduced).

HUMAN BEINGS AS THE CAUSE AND CONSEQUENCE OF DEVELOPMENT

Human beings are both the cause and consequence of development. It is the human factor that is the pivot of the process of development. Though the study of a human being is basic to the study of development, it cannot be of a human being in isolation but rather of human beings in relation to their fellows, or of humans in society and in their environment.

It is the creation of conditions, both material and spiritual that enables the human being as an individual—and human beings as a species—to be at his best. Those who control a human being's livelihood, control a human being. A person's freedom is illusory when he depends upon others for the right to work and the right to eat. Equally, a nation is not independent if its economic resources are controlled by another nation. Political independence is meaningless if a nation does not control the means by which its citizens can earn their living.

In other words, human development follows from economic development, only if the latter is achieved on the basis of equality and human dignity of all those involved. Human dignity cannot be given to a human being by the kindness of others. Indeed, it can be destroyed by kindness which emanates from an act of charity, for human dignity involves equality, freedom and relations of mutual respect among humans; it depends on responsibility and on a conscious participation in the life of the society in which a human being lives and works.

The whole structure of national societies and of international society is, therefore, relevant to the development of people. There are few societies in the world which can be said to serve this purpose. There are few, if any, that both accept and are organised to serve social justice, in what has been called the Revolution of Rising Expectations.

The greatest advances in technology and economic growth have been achieved under capitalism. However, the decisions pertaining to what goods shall be produced and how they shall be produced are made by a small number of people who have control over land and capital. The determining factor in their decision-making is whether the activity will yield profit, power or prestige to them as owners of land or capital. The needs of humankind are secondary, if they are considered at all.

There is no profit in producing cheap houses, so they are not produced; there is 'no money' for schools and hospitals but enough for five star hotels, modern shopping complexes and luxury apartments. The result is that a few people live in luxury, using the wealth produced by humans for their own grandeur and to ensure their own power. At the same time, masses of men, women and children are reduced to beggary, squalor and to the humiliation of that disease—the soul-destroying insecurity which arises out of their enforced poverty.

Let us be quite clear that if we are interested in a human being as an individual, then we must express this by our interest in the society of which those individuals are members, for humans are shaped by the circumstances in which they live. If they are treated like animals, they will *act* like animals. If they are denied dignity, they will act accordingly. If they are treated solely as a dispensable means of production, they will become soulless 'hands', to whom life is a matter of doing as little work as possible and then escaping into the illusion of happiness and pride through vice.

SOME DILEMMAS IN DEVELOPMENT

Literature on development abounds in a variety of dilemmas and dogmas, such as rural versus urban development, agricultural versus industrial development, primacy of capital versus labour and natural/autonomous versus induced/planned development. A brief critique of these dilemmas seems in order to clarify some of the issues.

Rural versus Urban Development

Economic development in Western countries has been associated with growing urbanisation, as reflected in the increasing proportion of the urban population. Hence, there is a tendency among economists to consider urbanisation as an index of development. Growing urbanisation is obviously the consequence of the growing concentration of infrastructural networks and capital intensive industrial enterprises in urban centres. This type of concentration has resulted in the existence of what is known in the literature on the economics of development as 'dualism' or coexistence of two separate economic subsystems in an economy, especially in many developing countries. On one hand, there exists in the economy a small but highly modern and developed urban subsector, which absorbs most of the material, financial, and educated and talented manpower resources. On the other hand, there is a very large but traditional and underdeveloped rural subsector, characterised by widespread poverty, unemployment and low productivity, which forms the majority of the population. In many developing countries, both the subsectors coexist, but without those linkages between them that were once the main factors that contributed to the development of today's developed countries.

At the other extreme, there is another dogma rapidly emerging in many developing countries that rural development is a prerequisite for overall development and, hence,

it deserves the highest priority in terms of allocation of resources. In their enthusiasm to promote the cause of rural development, the proponents of this school of thought usually tend to either disregard or underplay the linkages between the rural and the urban subsectors of the economy. What is needed is a new approach to development, which explicitly recognises the interlinkages and complementarity between the rural and the urban subsectors, and provides for integrating them completely.

Agricultural versus Industrial Development

Closely analogous to the rural versus urban development dilemma is the dogma that industrialisation alone can modernise agriculture and thereby raise agricultural productivity, wage rates and provide employment to the labour displaced by mechanisation of agriculture. This has led many development economists to associate development with industrialisation. Following this dogma, many developing countries have established highly capital intensive and sophisticated industrial enterprises, similar to those in developed countries. Such efforts, however, have often led to bitter disappointment when the desired results failed to materialise. Such projects are mere showcases, whose contribution to development is negligible—and sometimes even negative—because they are built at the expense of enterprises that meet the basic needs of people. Nations with high agricultural potential spend enormous resources on agricultural imports and depend heavily on imported technology, capital and management. At the same time, local agriculture stagnates and nutritional standards remain far lower than in the advanced countries. Distribution of income is tilted in favour of industrialists against farmers, workers and consumers.

At the other extreme is agricultural fundamentalism, which holds that in the initial stages of development when per capita incomes are low, agriculture alone can serve as an instrument of development, and that increased agricultural productivity is a prerequisite to increased income and industrialisation. The proponents of this dogma argue for allocation of more resources and attention to agriculture rather than to industry. They do not, however, realise that agriculture cannot develop alone and that the concomitant development of industry and supporting infrastructure is essential not only for the growth of the national economy but also for the advancement of agriculture itself. The non-agricultural sector must be developed to the extent that it is able to provide the agricultural sector with new farm inputs and services vital to its development, as also to absorb the manpower rendered surplus as a result of increased labour productivity in agriculture.

Agricultural fundamentalism has generally resulted in growth without development, mainly because of lack of linkages between the agricultural and non-agricultural sectors, and partly because of distribution of income being skewed in favour of big landlords. The establishment of small and less capital intensive industrial enterprises in rural areas, along with introduction of new technology in agriculture is likely to establish linkages between agriculture and industry. The Israeli strategy of integrating agricultural and industrial sectors is worth emulating. In Israel, industrial enterprises were

set up in rural areas, along with the introduction of more efficient methods of agricultural production. Initially, the industrial enterprises included mostly services and industries connected with agriculture, such as feed mix plants, factories for processing agricultural produce and for production of tools and various accessories. Most of these enterprises were owned, either fully or in part, by the farmers themselves. In course of time, the scope of industrial enterprises was widened to include activities completely unconnected with agriculture, such as jewellery manufacturing and ceramics (Weitz 1971: Chapter 9).

Capital versus Labour Dogma

This is a legacy inherited by today's development economists from their predecessors in the developed countries, who considered capital to be the key instrument of development. The Harrod-Domar model represents a typical example of this dogma (Tadaro 1995: 70–72). In this model, the rate of growth is expressed as the product of the savings rate and the output–capital ratio. Under the assumptions that capital and labour cannot be substituted for each other and that labour is in surplus supply, capital becomes the overriding constraint on economic growth. This dogma received a further fillip from those techno-economists who held that all new technology is embodied in capital.

Capital fundamentalism has been blindly accepted by development economists and planners in the developing countries. This has led to the promulgation of a number of policies in these countries, all aimed at increasing savings, redistributing income from the workers to the capitalists, granting monopoly rights to national and multinational corporations, transferring resources from the private to the public sector, increasing dependence on foreign aid and loans, and underpricing of capital, particularly foreign exchange for capital goods. This has resulted in a number of adverse effects on the economies of these nations. For example, underpricing of foreign exchange for capital goods has killed the incentive to develop labour intensive technologies adapted to domestic needs and circumstances, and has led to premature and excessive mechanisation in a number of sectors, resulting in unemployment of labour and underutilisation of other domestic resources.

Capital fundamentalism has extended to cover human capital formation as well. Higher education is highly subsidised in most developing countries, with the result that millions of college and university graduates are added annually to the pool of the unemployed white collar proletariat. In India, enormous investment has been made in the institutes of higher learning, particularly in the fields of engineering, technology, agriculture, medicine and management. Many of the graduates of these institutes usually do not like the work environment and compensation rates prevailing in the country and seek jobs abroad. Thus, the scarce resources invested in their education and training are lost to the country. It seems that at this stage of India's economic and technological development, we need more institutes to train barefoot agricultural and other technicians, engineers, doctors and rural managers, rather than institutes for highly advanced training. Similarly,

one wonders why we should produce more college and university graduates in disciplines like arts, commerce, and agriculture and veterinary sciences than we need. The demand for higher education could be brought down to match the availability of jobs by pricing it at its real resources cost, which is markedly higher than the present cost. In the United States of America (USA) and other Western countries, most students terminate their studies at the high school level and become self-employed. But their training is broad-based and highly practical and relevant to their context, with the result that high school graduates are able and confident to set up and manage their own small business or take up wage-paid jobs. We should learn from this experience, and make our education less capital intensive and more relevant to our requirements. We need to thoroughly overhaul our present education policy, which has become outdated and irrelevant in the context of our changed environment. More emphasis needs to be placed on vocationalisation of education.

Autonomous versus Induced Development

In every country, some development takes place naturally or autonomously over time, but its level and pace may not be adequate to maintain a reasonably satisfactory standard of living. In such situations, some sort of intervention is needed to speed up the pace of natural development. Development planning is one of the forms of intervention that has become a fad in many developing countries of the world, and is considered a magic door to development. In fact, even the advanced countries have come to realise the need for some sort of planning or government intervention in the economic processes. It seems that there is a growing consensus around the statement that any planning is better than no planning at all and decentralised planning is better than centralised planning.

However, we need to realise that planning can make a positive contribution only if it facilitates the achievement of development objectives more rapidly and more efficiently than if development followed natural forces. It is now becoming increasingly apparent that the development effort cannot be left to the government alone. It must be shared by private, cooperative, corporate and other non-governmental organisations (NGOs) and agencies and, above all, by the people themselves. Planning by the government should complement and supplement the efforts of individuals and NGOs. The main role of planning should be to provide a congenial economic and political environment for people to enable them to achieve their cherished goals and to set the rules of the game and enforce them strictly.

MAIN POINTS

1. The term 'rural development' is a subset of the broader term 'development'. It implies an overall improvement in the quality of life of rural people. Development is a universally cherished goal of individuals, families, communities and nations all over the world.

2. Nowadays, sustainable development has become a buzzword. According to the World Commission on Environment and Development (WCED), 'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' This definition underscores the need for maintaining inter-generational equity in terms of level of fulfillment of human needs. Constancy of natural capital stock including natural resources and environment is a necessary condition for sustainable development.
3. Rural development can be viewed as a process, as a phenomenon, as a strategy and as a discipline. As a *process*, it implies the engagement of individuals and communities in activities that lead to achievement of their cherished goals over time. As a *phenomenon*, it is a measure of quality of life resulting from interactions between various physical, technological, economic, socio-cultural and institutional factors. As a *strategy*, it is designed to improve the economic and social well-being of a specific group of people, that is, the rural poor. As a *discipline*, it is multi-disciplinary in nature representing an intersection of agricultural, social, behavioural, engineering and management sciences.
4. While economic growth is an essential component of development, it is not the only one, as development is not a purely economic phenomenon. In an ultimate sense, it must encompass more than the material and financial sides of people's lives. Development should, therefore, be perceived as a multidimensional process involving the reorganisation and reorientation of both economic and social systems.
5. With more than 740 million of its people living in rural areas and with the rural sector contributing about 18 per cent of its gross domestic product (GDP), no strategy of socio-economic development for India that neglects rural people and agriculture can be successful. Rural development is in fact a *sine qua non* of overall development.
6. The common man in India, as also in other developing countries, expects a higher standard of living for himself, his family, his community and his nation. These expectations cannot be fulfilled with the present low level of development and high level of inequality. This leads to frustration, disillusion and several antisocial activities, such as thefts, murders, violence and trafficking in drugs.
7. Development is both a cause and a consequence of change. There is a two-way relationship between them, that is, development influences and is influenced by change. The change implies a physical, technological, economic, social, cultural, attitudinal, organisational or political change. Whereas all manifestations of development can be traced to some change somewhere, sometimes not all changes lead to development. A change may be either for good (development) or for bad (retrogression).
8. Man is both the cause and consequence of development. It is the human factor that is the pivot of the process of development. But this basic truth is not taken into account in most of the countries of the world. For example, despite the greatest advances in technology and economic growth achieved under capitalism, the decisions

pertaining to what goods shall be produced and how they shall be produced are made by a small number of people who have control over land and capital. The determining factor in their decision-making is whether the activity will yield profit, power or prestige to them as owners of land or capital. The needs of mankind are secondary, if they are considered at all.

9. Literature on development abounds in a variety of dilemmas and dogmas such as rural versus urban development, agricultural versus industrial development, primacy of capital versus labour and natural/autonomous versus induced/planned development. There is a need to recognise the futility of all such dogmas and take a practical and balanced view, recognising the complementarity between rural and urban, agriculture and industry, capital and labour, and induced and autonomous dimensions of development.

NOTE

1. Areas outside the jurisdiction of municipal corporations and committees, and notified town area committees.

QUESTIONS FOR DISCUSSION

- 1.1 Is every change or everything new 'development'? Yes/No. If yes, why and if no, why not?
Illustrate your answer with examples.
- 1.2 Is economic growth as revealed in terms of increased production of food grains, milk, clothes, houses, roads, schools, motor cars, increased per capita income, increased purchasing power, and so on, 'development'? Yes/No. If yes, why and if no, why not?
- 1.3 Illustrate with examples the concept of rural development as a process, as a phenomenon, as a strategy and as a discipline.
- 1.4 Can India become a truly developed nation while having such problems as growing disparities between urban and rural areas in terms of average per capita income, availability of basic infrastructure and security of life and property and rate of literacy? Yes/No. If yes, why and if no, why not?
- 1.5 Discuss why development of India's human resources, particularly the poor and disadvantaged sections of society, should be the major instrument and the ultimate goal of development planning and policy.
- 1.6 Discuss how the rural sector and urban sector can both develop in tandem and urban-rural disparities narrowed down.

2

Rural Economy of India

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- identify the major segments and indicators of the size of the rural economy of India;
- list the major characteristics of the rural sector of India's economy;
- illustrate the role of the agricultural sector in India's overall development and the reasons for its decline in the recent past;
- examine the role of non-agricultural sector in rural development and list the major initiatives taken by the government for its development at a faster pace and
- identify the major challenges and opportunities confronting the rural sector at present and in the foreseeable future, especially in the context of globalisation and liberalisation.

INTRODUCTION

India is one of the oldest surviving civilisations and the biggest democracy in the world. It has a rich and diverse cultural heritage and it has two of the world's 18 hotspots of biodiversity. It ranks second after China in terms of population, first in terms of cattle and buffalo population, and sixth in terms of geographical area. It has the world's third largest reservoir of technically trained manpower and is now one of the seven nuclear weapons states. Its mainland covers an area of 3.29 million sq km or 329 million hectares (mha),

measures about 3,214 km from north to south between the extreme latitudes and about 2,933 km from east to west between the extreme longitudes. Over the last 60 years since independence, India has achieved impressive progress in the fields of science and technology, and is now self-sufficient in food grain and milk production. On the negative side, India has not yet been able to fully develop and harness its human and natural resources for the benefit of its people, and it has yet to solve its problems of illiteracy, poverty, unemployment and vulnerability to natural calamities.

India's economy is predominantly rural in character. This is evident from the fact that in 2001, nearly 72 per cent of its population lived in its nearly 6.38 lakh villages and about 52 per cent of its workforce was engaged in agriculture and allied activities in rural areas. Agriculture and allied activities support more than one billion people and contributed about 18 per cent of India's gross domestic product (GDP) at factor cost at current prices in 2006–07.

In a predominantly agrarian country like India, rural development is a *sine qua non* of overall development and agricultural development is a prerequisite for rural development. Therefore, in such a country, agricultural development should form the foundation of national development.

The role of agriculture in economic development has been recognised and discussed since the time of the Physiocrats.¹ According to the Physiocrats, it was only the agricultural sector which produced an economic surplus over cost of production and, therefore, it played the most strategic role in economic development. They considered commerce and manufacturing as non-productive, in the sense that the value of raw materials handled by these sectors was enhanced only enough to pay for the labour and capital used in the process of production.

The classical writers also recognised the importance of agriculture in economic development. It is now believed that the agricultural sector formed the core element of Adam Smith's basic growth model. He thought that the production of an agricultural surplus to support non-farm production was essential for economic development.

In this chapter, we present an overview of the rural economy of India, with special emphasis on its agricultural production base and the role of agriculture in its overall development. We begin with a description of the size and structure of India's rural economy, and its salient characteristics.

SIZE AND STRUCTURE OF THE RURAL ECONOMY

An economy may be conceptualised as a collection of economic, social, institutional, legal and technological arrangements through which individuals in society seek to increase their material and spiritual well-being. The two elementary functions of an economy are consumption and production. Consumption is considered as the prime pump of an economy. The classical dictum that 'the consumer is sovereign' is based on the consumer power embodied in his demand, which is one of the crucial requirements for the existence of any business enterprise or, for that matter, any economic activity, including production.

India's economy can be thought of as comprising two main sectors, namely, the rural sector and the non-rural sector. The rural sector is, in turn, composed of two main subsectors, that is, the agricultural subsector and the non-agricultural subsector. The agricultural subsector comprises agriculture and allied economic activities, such as animal husbandry and dairying, fisheries, poultry and forestry. The non-agricultural subsector consists of economic activities relating to small scale village industries, rural craft, business and services. Industry here refers to cottage and village industries, *khadi*, handloom, handicrafts, and so on. Business refers to micro-enterprises, trading of general goods, small shops, petty traders, and so on, whereas services refers to transport, communications, banking, input supply, marketing of farm and non-farm produce, and so on. The main stakeholders of the rural sector include farmers, agricultural and non-agricultural labourers, artisans, traders, moneylenders and those engaged in providing such services as transport, communications, processing, banking, and education and extension.

The size of the rural sector could be measured in terms of the size of rural population, livestock population, extent of land resources, water resources, forest resources and fisheries, quantum of production inputs used and the output produced.

Human Population

According to the 2001 population census, India's rural population was 1028.7 million, which accounted for 72.25 per cent of the country's total population. Of the total rural population, 127.3 million were cultivators and 106.8 million agricultural workers. The average annual exponential growth rate of population was 1.95 per cent. The quality of human resources is, by and large, poor in terms of literacy, life expectancy, technical knowledge and skills. Consequently, according to the Global Human Development Report (GHDR) 2007, India ranks 128 among countries with medium human development out of 177 countries of the world. This poses a serious constraint on India's development.

Livestock Population

India is endowed with livestock resources of high genetic diversity, and ranks first in the world in terms of the population of cattle and buffaloes. According to the livestock census 2002–03, the country had 185 million cattle, 98 million buffaloes, 61.5 million sheep, 124 million goats, 14 million pigs and 489 million poultry birds (Government of India [GoI] 2005a: 318). However, like land, the livestock has relatively low productivity in terms of average yield of milk, meat and wool per head. Besides, livestock density is relatively high vis-à-vis the carrying capacity of grazing lands and fodder resources of the country. The livestock population exerts high pressure on the country's limited land and water resources, leading to their degradation in many ecologically fragile regions such as hilly, arid and semiarid areas.

Land Resources

Land is one of the natural resources that affects the level and pace of development in general and agricultural development in particular. India has the total geographical area of about 329 mha, of which about 188 mha is degraded, which is 57 per cent of the country's total geographical area. Of the 188 mha of degraded land, about 149 mha was affected by water erosion, 13.5 mha by wind erosion, about 14 mha by chemical deterioration and 11.6 mha by waterlogging (Sehgal and Abrol 1994).

In 2003–04, India had the total gross irrigated area of about 75 mha and net irrigated area of about 55 mha, and it ranked first in the world in terms of irrigated area. The net irrigated area accounted for about 39 per cent of the net area sown in the country and contributed about 55 per cent to the country's total agricultural output. The cropping intensity was 150 per cent. The average productivity of land in India in terms of crop yields is low when compared to that in some of the developed countries of the world. For example, the average yield of paddy in India in 2004–05 was 2,900 kg per ha as against 9,800 kg in Egypt and 7,800 kg in the United States of America (USA), and the average wheat yield in India was 2,700 kg per ha as compared to 7,700 kg in the United Kingdom (UK) and 4,250 kg in China.

Water Resources

Water is a finite but renewable natural resource and, like other natural resources, it is an integral part of the environment. It is essential for the survival of all living beings on this planet and also for the socio-economic development of households, communities and nations all over the world. It is also necessary to maintain and enhance biodiversity and quality of environment. India, as a whole, is reasonably well endowed with fresh water resources. It receives nearly 3,800 billion cubic metres (bcm) of fresh water annually through rainfall and snowfall. Most of the rainfall is concentrated in 100 to 120 days during the period of June through September. Besides, there are also wide variations in the annual rainfall from region to region: 100 mm in parts of western Rajasthan to as high as 11,000 mm in Cherrapunji in the eastern part of Meghalaya. Thus, the distribution and availability of water is not uniform over space. Similarly, there are wide year-to-year fluctuations in rainfall in the country.

It is estimated that out of the total quantity of rainwater received annually, 700 bcm seeps into the ground and 500 bcm is lost due to evaporation and transpiration. Of the total quantum of seepage, nearly 432 bcm is replenishable groundwater through recharging of underground aquifers, of which 396 bcm can be annually extracted economically. The surface run-off to the ocean is estimated at 1,900 bcm, which is approximately half of the total annual rainfall received. This leaves nearly 690 bcm as the fresh utilisable surface water, which together with the extractable groundwater of nearly 396 bcm makes the utilisable water resources of the order of 1,086 bcm. So far, of the total utilisable water resources, nearly 600 bcm has been put to use in the country (GoI 1999: 14–15).

It is estimated that India accounts for about 4 per cent of the world's fresh water resources. This, when seen against India's share of 2.50 per cent in the total land area of

the world, seems more than adequate. However, when we consider the fact that India accounts for about 16 per cent of the world's human population and 15 per cent of the world's animal population, the picture changes from optimistic to pessimistic. The picture is bleak when we consider the declining trend in per capita availability of fresh water. The per capita renewable fresh water availability in the country at present is estimated to be only 1,086 cubic metres (cm) per annum. It has been declining over time and will continue to do so in future also. While this is the picture at the aggregate national level, there are significant regional and temporal variations in water availability caused by spatial and year-to-year fluctuations in the annual rainfall that India receives. This causes the problems of regional and seasonal scarcity and surpluses. There are regions where the average per capita fresh water availability is far below 500 cm per annum. Below this level of availability, water becomes a constraint to life. Droughts and floods have been recurrent phenomena in many parts of the country for ages. They further aggravate the regional and seasonal scarcity of water. Droughts and floods result in enormous economic loss to the nation and sufferings to the millions of affected people.

Forest Resources

Forests are natural renewable resources and have always been an integral part of India's economy and culture since time immemorial. They are held in high esteem by people. The ancient religious, political and literary writings are a testimony to the fact that people were considered as an integral part of nature and not superior to it. Forests occupy an important place in India's economy in terms of their contribution to the GDP, employment and livelihoods of poor people. In 2002–03, forests contributed Rs 27,013 crore at current prices to India's GDP, which was 1.2 per cent of the total GDP. The contribution of forests to India's GDP has varied from one to 1.5 per cent over the nine year period from 1993–94 to 2002–03 (Central Statistical Organisation [CSO] 2004).

The recorded total forest area of India as per legal documents was 7,68,463 sq km in 2001, of which 4,23,311 sq km was under reserved forests, 2,17,245 sq km under protected forests and 1,27,881 sq km was unclassified. The forest area accounted for 23.38 per cent of the total geographical area of the country in 2001 (Forest Survey of India [FSI] 2001). It is estimated that out of 76 mha of area recorded as forest, only 64 mha sustains the actual forest cover and, out of this, only 35 mha has adequate cover, which accounts for only about 11 per cent of the total geographical area of the country at present. The National Forest Policy (NFP) (GoI 1988) stipulates that the country as a whole should aim at keeping about one-third of the geographical area under forest cover. The forests are being degraded by the ever increasing biotic pressure and, hence, they need to be rehabilitated by afforestation not only for environmental considerations but also for meeting the local demand for firewood, small timber, fodder, and for defence and industry.

In India, forests meet nearly 40 per cent of the energy needs of the country of which more than 80 per cent is utilised in the rural areas, and they also meet about 30 per cent of fodder needs of the cattle population. Forest products also play a very important role in rural and tribal economy as many of the Non-Wood Forest Products (NWFP) provide

sustenance to the rural poor. For landless families and marginal farmers, forest related activities often represent the primary source of income. Besides the direct tangible economic benefits mentioned above, forests confer a number of benefits which are not directly visible to the human eye and, yet, they have a great influence in affecting the quality of life. Some of those benefits include the amelioration of climate, conservation of soil and soil moisture, and flood control.

Fishery Resources

India is now the third largest producer of fish and the second largest producer of inland fish in the world. India has a marine coastline of 12,700 km, maritime area of 4.52 lakh sq km and an Exclusive Economic Zone (EEZ) of 200 lakh sq km (Singh 1994: 10). The fisheries sector occupies an important place in the socio-economic development of India. It contributed nearly 1 per cent of India's total GDP and 5.3 per cent of the GDP from agriculture in 2004–05. It is a source of cheap and nutritious food and is an important foreign exchange earner. In 2006–07, the value of fish and fish products exported from India was Rs 7,019 crore (GoI 2008).² Besides, it is considered as a major source of livelihood for 11 million people in the country, engaged fully or partially, or in subsidiary activities pertaining to the sector. It is estimated that the fisheries sector alone can provide 1 million jobs in the next five years.

Fish production in the country has registered tremendous growth over the last two decades or so, ranging from 5.5 per cent to 5.8 per cent per annum, which is much higher than that for the agricultural sector as a whole. The total fish production in India was only 7.52 lakh tonnes in 1950–51, which increased to about 69 lakh tonnes in 2006–07. Fish production can be increased significantly if judicious development, conservation and harvesting of marine and inland fishery resources of the country by way of adopting suitable scientific technologies and conservational measures were adopted.

Use of Inputs and Outputs

The major inputs used in agriculture consist of seeds, organic manure, chemical fertilisers, plant protection chemicals, irrigation water, human labour, animal and mechanical power including electricity and livestock feed, and credit. Table 2.1 presents estimates of the value of selected major inputs used in India's agriculture, and output of agriculture and livestock. In terms of physical quantities, the total fertiliser consumption in terms of nitrogen, phosphorus and potash (NPK) nutrients in India was merely 2.92 lakh tonnes in 1960–61. It increased to 5.52 million tonnes in 1980–81, to about 14 million tonnes in 1995–96 and to about 22 million tonnes in 2006–07. The average per ha consumption of NPK nutrients increased from a mere 1.90 kg in 1960–61 to 75 kg in 1995–96 and to 113 kg in 2006–07. The quantity of certified/quality seeds distributed increased from about 25 lakh quintals in 1980–81 to about 155 lakh quintals in 2006–07. The use of pesticides (technical grade) in India was only 8,620 tonnes in 1960–61. It increased to 75,000 tonnes in 1990–91 but came down to 37,950 tonnes in 2006–07 (GoI 2008).³ The number of tractors in use in

Table 2.1 Value of Major Agricultural Inputs and Output in India at 1999–2005 Prices

		(Rs Crore)			
S. No.	Item	1999–2000	2002–03	2003–04	2004–05
<i>Value of selected inputs</i>					
1.1	Chemical fertilisers	20,846	18,378	18,210	18,520
1.2	Diesel oil	7,436	8,750	9,246	9,404
1.3	Organic manure	6,322	6,913	7,061	7,182
1.4	Seeds	10,210	8,856	9,062	9,217
1.5	Livestock feed	57,610	62,537	63,735	64,222
2.0	Value of output	5,26,658	5,20,193	5,67,412	5,71,615
2.1	Agriculture	3,95,981	3,73,216	4,17,911	4,17,189
2.2	Livestock	1,30,677	1,46,977	1,49,501	1,54,426

Source: CSO (2006: xxxiv).

agriculture increased from 10.63 lakh in 1991 to 15.25 lakh in 2001. The flow of institutional credit to agriculture in the country was Rs 34,274 crore in 1997–98, which increased to Rs 2,03,296 crore in 2006–07. It was expected to increase to Rs 2,40,000 crore by the end of March 2008. Besides, farmers now have access to credit through 582.50 lakh Kisan Credit Cards (KCC) issued to them through a vast rural banking network in the country.

Table 2.2 presents estimates of production of food grain, milk and fish for selected years in India from 1950–51 to 2006–07. As shown in the table, the total production of food grains increased from 51 million tonnes in 1950–51 to 212 million tonnes in 2006–07, milk production increased from 17 million tonnes to 100 million tonnes in 2006–07 and fish production from 7.52 lakh tonnes to 69.00 lakh tonnes in 2006–07. In 2007–08, the total production of food grain in the country is estimated to be about 219 million metric tonnes—an all time record—and milk production is expected to be 102 million metric tonnes (GoI 2008).⁴ India now is self-sufficient in food grains and milk production. The per capita availability of milk in the country has increased from 176 gms/day in 1990–91 to 245 gms/day in 2006–07. The total value of output from agriculture and livestock increased from Rs 5,26,568 crore in 1999–2000 to Rs 5,71,615 crore in 2004–05.

The level of use of energy is an important determinant of rural development. The rural sector is starved of energy. For example, in 2001–02, consumption of electricity

Table 2.2 Production of Food Grains, Milk and Fish in India

Year	Food Grains (Million tonnes)	Milk (Million tonnes)	Fish (Lakh tonnes)
1950–51	50.82	17.00	7.52
1960–61	82.02	20.00	11.60
1970–71	108.42	20.79	17.56
1980–81	129.59	31.60	24.42
1990–91	176.39	53.99	38.36
1999–2000	213.19	78.3	52.00
2004–05	198.36	92.50	63.00
2005–06	208.60	97.1	65.70
2006–07	211.78	100.00	69.00

Sources: GoI (2004a, 2007a)⁵, NABARD (2007).

for agricultural purposes in India was 81,673 million kilowatt hour (mkwh), which was only 25.33 per cent of the total electricity consumption in the country. This was not adequate to meet even half the potential demand in the agricultural sector. It will be a challenging task to meet the growing demand for energy from households, industry, transport, agriculture and business. The pattern of demand for energy is also changing over time. Analysis of total commercial energy consumption shows that there is an increasing trend in the consumption of petroleum products, natural gas and electricity. Measures will have to be initiated for reducing the energy intensity in different sectors through changes in technology and processes. Interfuel and intrafuel substitution will have to be optimised. The main emphasis will have to be on maximising the use of renewable sources of energy, with affordable cost to low income groups in rural and urban areas. Major stress should be laid on efficiency, conservation and demand management to bring down the energy elasticity of output.

THE CHARACTERISTICS OF THE RURAL SECTOR

Some of the salient characteristics of the rural sector are presented in Box 2.1 and Tables 2.3–2.7, and briefly described in the following sections.

Box 2.1 Some Salient Characteristics of India's Rural Sector

1. Excessive dependence on nature
2. Preponderance of small uneconomic land and livestock holdings
3. Low capital–labour ratio
4. Low factor productivity
5. Long gestation and low rate of turnover
6. High incidence of poverty
7. Preponderance of illiterate and unskilled workforce
8. Lack of basic infrastructure

Excessive Dependence on Nature

Agricultural production, being biological in nature, depends more on weather and other climatic factors than non-agricultural production. For example, in India about 60 per cent of the net area sown in 2004–04 was rainfed, where crop production wholly depends on the quantum and distribution of rainfall over the growing season. Given the wide fluctuations in rainfall in India from year to year and area to area, crop production—and, hence, farm incomes—vary widely. In a nutshell, Indian agriculture is vulnerable to natural calamities, such as droughts, floods, hailstorms and cyclones. For example, nearly 60 per cent of the Indian landmass is vulnerable to earthquakes, about 68 per cent of the area is susceptible to droughts, over 40 mha of land is prone to floods and about 8 per cent of the total area is prone to cyclones (Singh and Shishodia 2007: 359). This means that the degree of nature-induced risk and uncertainty in agriculture is higher than in the

non-agricultural sector and so also the need for insurance against such risks. But sadly, the coverage of crop insurance is very limited and, therefore, most farmers have to bear the burden of risk and uncertainty themselves and become broke in the process.

Preponderance of Small Uneconomic Land and Livestock Holdings

In 1995–96, the number of operational landholdings in India was 11.56 crore, which increased to over 12 crore by 2000–01. Of the total land holdings in 2000–01, nearly 63 per cent were operated by marginal farmers having less than 1 ha of land and 19 per cent by small farmers having 1 to 2 ha of land (Table 2.3). Similarly, it is estimated that most of some seven crore households in India owning milch animals are small holders having one or two animals. The average size of operational landholdings in India was 1.32 ha in 2000–01 and it has been declining over time. It declined from 2.69 ha in 1960–61 to 1.82 ha in 1980–81, to 1.57 in 1990–91 and to 1.41 in 1995–96. The land and livestock holdings are not only small in size but also widely scattered all over the countryside. Landholdings are also fragmented, particularly in those states where consolidation of landholdings has not yet been done. The process of subdivision and fragmentation of landholdings continues unabated generation after generation under the existing land inheritance laws. The small and fragmented landholdings are a great obstacle to economical use of farm labour and machinery. The subdivision and fragmentation of landholdings needs to be stopped through appropriate legislative measures.

Almost all the marginal and small farmers are poor, producing very little marketable surplus. It is estimated that farmers having less than 4 ha of land are not financially viable, if they depend wholly on income from the land. Thus, over 90 per cent of farmers in India are not financially viable. Besides, nearly 49 per cent of the farmers in India

Table 2.3 Distribution of Operational Landholdings in India, 1995 and 2001–02

Category of landholding (ha)	No of holdings ('000)		Area operated ('000 ha)		Average size of holding (ha)	
	1995–96	2001–02	1995–96	2001–02	1995–96	2001–02
Marginal (Less than 1 ha)	71,179 (61.6)*	76,122 (63.0)	28,121 (17.2)	30,088 (18.82)	0.40	0.40
Small (1.0–2.0 ha)	21,643 (18.7)	22,814 (18.9)	30,722 (18.8)	32,260 (20.18)	1.42	1.41
Semi-medium (2.0–4.0 ha)	14,261 (12.3)	14,087 (11.7)	38,953 (23.8)	38,305 (23.96)	2.73	2.72
Medium (4.0–10.0 ha)	7,092 (6.1)	6,568 (5.4)	41,398 (25.3)	38,125 (23.84)	5.84	5.80
Large (10.0 ha and above)	1,404 (1.6)	1,230 (1.0)	24,163 (14.8)	21,124 (13.21)	17.21	17.18
All	1,15,580 (100.0)	1,20,822 (100.0)	1,63,357 (100.0)	1,59,903 (100.00)	1.41	1.32

Source: GoI (2007a).⁶

Note: *Figures in brackets indicate the percentage of respective columns to totals.

were in debt in 2005. Development of this huge number of farmers is quite a big challenge for policy makers and planners.

Low Capital–Labour Ratio

India's rural sector is starved of capital and overcrowded with human labour. Consequently, the amount of capital available per worker, that is, the capital–labour ratio is low and this is one of the main reasons of low productivity in the sector. To improve this ratio, it is necessary to step up both public and private investment in the sector, and to facilitate through appropriate policies the absorption of surplus workers in the non-agricultural sector. After a declining trend for a few years, now both public and private investments in agriculture have been increasing at both 1999–2000 and current prices. For example, public investment in agriculture and allied activities increased from Rs 8,733 crore at 1999–2000 prices in 2002–03 to Rs 14,144 crore in 2005–06 and private investment from Rs 46,935 crore to Rs 49,987 crore over the same period of time (GoI 2007a).⁷ This buoyancy needs to be maintained to achieve the target growth rate of 4 per cent per annum in the agricultural sector in the Eleventh Five Year Plan.

Low Factor Productivity

Low crop yields have been the bane of India's rural sector since long (Table 2.4). As mentioned in the preceding section, the low factor productivity is mainly due to inadequate capital in the form of production inputs, raw materials, and improved machinery and equipment available per worker/unit of enterprise. For example, the low average crop yields in India as compared to those in developed countries like the USA, Egypt and China are due to low inputs of fertilisers and plant protection chemicals. Similarly, the low average milk yield per milch animal in India is due mainly to the low quantity of concentrated feed and the poor quality of fodder fed to the animals. What is required to improve the resource productivity in India's rural sector is to close the technology gap and reduce the redundant labour force.

Table 2.4 Average Yield Rates in kg/ha of Principal Crops in India and Selected Countries, 2004–05

<i>Country</i>	<i>Paddy</i>	<i>Wheat</i>	<i>Maize</i>	<i>Sugarcane</i>	<i>Major oilseeds</i>
India	2,900	2,710	1,180	77,515	860
World	3,960	2,870	3,380	62,859	1,860
China	3,837	4,250	4,900	65,293	2,050
Egypt	9,800	3,907	4,854	69,556	NA
Pakistan	3,055	2,370	2,114	62,859	NA
USA	7,830	2,381	9,150	47,934	2,610

Source: GoI (2008).⁸

Long Gestation and Low Rate of Turnover

It takes a relatively longer period of time for investment in agricultural enterprises to yield benefits than in many non-agricultural enterprises. For example, it takes three to four months for most crops to mature, four to six years to raise a young buffalo calf to a stage when she starts yielding milk and five to 10 years before fruit saplings start bearing fruits. Besides, the annual flow of net returns from investment in most agricultural enterprises is also low. This results in a low rate of turnover or, alternatively, it takes longer to recover the investment made.

High Incidence of Poverty

The incidence of poverty is higher in the rural sector than in the urban sector. For example, in 2004–05, about 28 per cent of the rural population was below the poverty line, as compared to about 26 per cent in urban areas. In absolute terms, of the total population of 30.2 crore in the country, living below the poverty line in 2004–05, 22.1 crore (73 per cent) were in the rural areas. Data from National Sample Surveys (NSS) show that the ratio of urban to rural per capita consumption increased from 1.62 in 1993–94 to 1.76 in 1999–2000 and further to 1.91 in 2004–05, which suggests that the urban–rural divide is widening, especially since the NSS probably does not fully capture consumption by the rich, particularly in urban areas. If the comparison is extended to gaps in the availability of other essential services, the chasm is much deeper. But the employment scenario has recently improved in rural areas. According to the sixty-first round of the NSS, in 2004–05, the unemployment rates were lower in rural areas than in urban areas for both males and females. Within the rural areas, unemployment rates for males were higher than those for women. But in the urban areas, the opposite was true (see ‘Rural Employment Scenario’ in Chapter 10 for details).

It is, then, no surprise that the average annual per worker income in rural areas is also markedly lower than in the urban areas. For example, over the period 1998–99 to 2003–04, it was Rs 11,496 at 1993–94 prices as against Rs 59,961 in the non-agricultural sector (Radhakrishna 2008: 45). According to the sixty-first round of NSS (2004–05), the average per capita consumption expenditure (a proxy for per capita income) in rural areas was about Rs 559 as compared to Rs 1,052 in urban areas (GoI 2007a).⁹

Preponderance of Illiterate and Unskilled Workforce

Although the average literacy rate in the country as a whole is low, in rural areas it is lower. In 2001, it was about 60 per cent as compared to about 80 per cent for urban population (Table 2.5). The higher level of illiteracy and the lack of skills among the majority of rural people are serious constraints on their socio-economic development. It is a pity

Table 2.5 Rural–Urban Literacy Rates in India, 1951–2001

Year	Rural			Urban			Total		
	Male	Female	All	Male	Female	All	Male	Female	All
1951	19.02*	4.87*	12.10*	45.60*	22.33*	34.59*	27.16	8.86	18.33
1961	34.30	10.10	22.50	66.00	40.50	54.40	40.40	15.35	28.30
1971	48.60	15.50	27.90	69.80	48.80	60.20	45.96	21.97	34.45
1981	49.60	21.70	36.00	76.70	56.30	67.20	56.38	29.76	43.57
1991	57.90	30.60	44.70	81.10	64.00	73.10	64.13	39.29	52.21
2001	71.40	46.70	59.40	86.70	73.20	80.30	75.85	54.16	65.38

Sources: GoI (2002b) and Office of the Registrar General of India: Population Census Reports, 1951, 1961, 1971, 1981, 1991 and 2001.

Note: *For 1951 population, 'male', 'female' and 'persons' refer to effective literacy rates, and the break-up of rural, urban and male–female components are crude literacy rates.

that while, at one extreme, we have in India world-class scientists, engineers, managers and academicians, at the other extreme, we have hundreds of millions of illiterates amongst us. As regards gender difference, the growth of literacy has been higher in the case of females (14.87 per cent) than for males (11.72 per cent) over the period 1999 to 2001 (GoI 2002a: 250).

Lack of Basic Infrastructure

Indian villages miserably lack in such basic infrastructure as schools, health care centres (leave aside hospitals), all-weather roads, means of transport and communication, drinking water facilities, and electricity for domestic and agricultural purposes. It has been established through empirical studies that basic infrastructure is an important determinant of development. As a matter of fact, the 'growth centre' theory of development is based on this premise. Although in many states, good progress has been made recently under the Minimum Needs Programme (MNP), Bharat Nirman Programme (BNP), Sarva Shiksha Abhiyan (SSA), National Rural Health Mission (NRHM) and other programmes to provide the bare minimum infrastructure, there are crores of people living in remote tribal and hilly areas where not much has been done.

THE ROLE OF THE AGRICULTURAL SUBSECTOR

The rural sector constitutes the basic foundation of India's economy. No programme of national development can ever succeed unless it is built upon this foundation. More specifically, the rural sector in general, and its agricultural subsector, in particular, contributes to the growth and development of India's economy in the following ways.

Contribution to GDP

The agricultural subsector occupies a place of pride in India's economy and will continue to do so in the foreseeable future. Table 2.6 presents data on the share of agriculture in India's GDP at factor cost at current and 1999–2000 prices. Agriculture contributed 34.7 per cent to the GDP at current prices in 1980–81, but its share has been declining over time. By 2006–07, it had declined to 17.5 per cent at current prices and 18.5 per cent at 1999–2000 prices. As a matter of fact, the share of agriculture has been gradually declining ever since 1950–51, when it was 56.46 per cent. The declining share of agriculture in the GDP does not, however, mean a retrogression of agriculture; it only means that the secondary and tertiary sectors of the economy are expanding at a higher rate. And this is what one would anticipate as the process of economic development moves forward. This has happened in developed countries all over the world. In general, the more developed a country, the smaller is the share of agriculture in its national income. For example, in 1995, the share of agriculture in the GDP was only 2 per cent in the UK, 3 per cent in the USA and 4 per cent in Japan (World Bank 1997: 236–37). We could conclude by emphasising that as agriculture is the most important sector of India's economy, development must act directly on agriculture, if the majority of the country's people are to be affected by development.

Table 2.6 Share of Agriculture and Allied Activities in India's GDP at Factor Cost

Year	Agricultural GDP		Total GDP		Percentage share of agriculture	
	At current prices	At 1999–2000 prices	At current prices	At 1999–2000 prices	At current prices	At 1999–2000 prices
	(Rs crore)					
1999–2000	4,46,515	4,46,515	17,86,525	17,86,525	25.0	25.0
2000–01	4,49,746	4,45,594	19,25,416	18,64,772	23.4	23.9
2001–02	4,87,063	4,73,530	21,00,187	19,72,912	23.2	24.0
2002–03	4,72,679	4,39,321	22,65,304	20,47,733	20.9	21.5
2003–04	5,33,642	4,83,274	25,49,418	22,22,592	20.9	21.7
2004–05	5,36,629	4,83,080	28,55,933	23,89,660	18.8	20.2
2005–06	5,95,058	5,12,147	32,50,932	26,04,532	18.3	19.7
2006–07	6,52,403	5,26,127	37,17,465	28,44,022	17.5	18.5

Sources: CSO (2006) and GoI (2007a).

Mainstay of Livelihood and Employment

As we stated earlier, a peculiar feature of India's economy is that a very high proportion (72 per cent in 2001) of the country's population lives in its rural areas. Similarly, though the share of the agricultural sector in GDP has been declining over time, the proportion of the population dependent upon agriculture and allied activities has been more or less stagnant, or declining at a very slow rate. It is estimated that the agricultural sector

supports more than half a billion people and provides employment to 52 per cent of India's total workforce (GoI 2008).¹⁰ This means that agriculture is the main source of livelihood and employment for about half of India's population. In developed countries like the UK, the USA, Germany and Japan, the proportion of the population dependent upon agriculture has been declining continuously. In 1995, it was 2.1 per cent in the UK, 2.6 per cent in the USA, 3.0 per cent in Germany and 5.5 per cent in Japan, as compared to 61.6 per cent in India (Food and Agriculture Organisation [FAO] 1996: 26–35). The higher percentage of the population dependent upon agriculture indicates the inability of the industrial and services sectors to absorb the incremental rural population. The obvious remedy in such cases is to expand the industrial and services sectors at a faster rate.

Source of Raw Materials

Agriculture is the principal source of raw materials for India's leading industries, such as sugar, cotton, jute, textiles, leather, tobacco and edible oils. Many other industries like fruit preservation and processing, *dal* mills, handloom weaving, *gur* making and oil crushing, also depend upon agriculture as a source of raw materials. The rate of growth in all these industries is, thus, dependent on the rate of growth in the agricultural sector, and agricultural development is a prerequisite for their development.

Source of Foreign Exchange

Agriculture is an important source of earning foreign exchange, which is needed for importing capital goods for the rapidly expanding industrial sector. Agriculture makes its contribution to the net foreign exchange earning through the displacement of current and potential imports, and through expanded exports. In the year 2005–06, the value of agricultural exports was Rs 49,803 crore, which accounted for about 11.0 per cent of the total value of exports from India in that year (Table 2.7). The value of agricultural imports in the same year was Rs 21,026 crore, which accounted for 3.3 per cent of India's

Table 2.7 Value of India's Exports and Imports and Share of Agricultural Commodities

Year	(Rs crore)					
	Agricultural imports	Total national imports	% of agricultural imports	Agricultural exports	Total national exports	% of agricultural exports
1990–91	1,478.27	47,850.84	3.09	7,838.04	44,041.81	17.80
1995–96	5,890.10	1,22,678.14	4.08	20,397.74	1,06,353.35	19.18
2000–01	12,086.23	2,28,306.64	5.9	28,657.37	2,01,356.45	14.23
2004–05	22,057.49	4,81,064.11	4.59	39,863.31	3,56,068.88	11.20
2005–06	21,025.54	6,30,526.77	3.3	49,802.92	4,54,799.97	10.95

Source: GoI (2007a).¹¹

total exports. The share of agricultural commodities in the total exports of India has been gradually declining over time. It declined from 17.7 per cent in 1996–97 to 11 per cent in 2005–06. This is due to the fact that the exports of non-agricultural commodities has been increasing at a faster rate than the exports of agricultural commodities.

Market for Industrial Goods and Services

The agricultural sector provides a ready and big market for many goods manufactured and services provided by the secondary and tertiary sectors. Such goods include pesticides, insecticides, farm machinery, pumping sets, cattle and poultry feed, fish feed, pipelines, fencing material, veterinary medicines and vehicles. Rural people also buy consumer goods manufactured by the industrial sector. In fact, now many big companies have their eyes on rural markets for their products and services. Thus, increased farm income and purchasing power is a valuable stimulus to industrial development. It has been argued by a number of economists that insufficient purchasing power in rural areas is the basic problem in industrial development in low-income countries. If industrial development is in fact throttled by the lack of a mass market, the solution is to increase rural purchasing power. However, there is clearly a conflict between the need for enhancing agriculture's contribution to the capital requirements for overall development and the emphasis on increased farm purchasing power as a stimulus to industrialisation, and there is no easy reconciliation of this conflict.

Source of Cheap Food

Economic development is characterised by a substantial increase in the demand for food. Apart from autonomous changes in demand, the annual rate of increase in the demand (D) for food is given by $D = p + ng$, where p and g are the rates of growth of population and per capita income, respectively, and n is the income elasticity of demand for food. With the average annual exponential population growth rate of 1.95 per cent per annum registered in India during the decade 1991–2001, and with the rise of nearly 6 per cent in real per capita income per annum registered during the Tenth Plan period (2002–03 to 2006–07), the annual rate of increase in demand for food in India is around 6 per cent (assuming the income elasticity of demand for food to be 0.6). If food supplies fail to expand in pace with the growth of demand, the result is likely to be a substantial rise in food prices, leading to political discontent and pressure on wage rates, with consequent adverse effects on industrial profits, investment and economic growth. The inflationary impact of a given percentage increase in food prices is much more severe in a developing country, like India, than in a high-income economy. This is a simple consequence of the dominant position of food as a wage good in low-income countries, where 40 per cent to 50 per cent of the total consumption expenditure is devoted to food, compared with 20 per cent to 25 per cent in developed economies. There are, thus, severe penalties attached to the failure to produce adequate food in developing countries.

THE ROLE OF THE NON-AGRICULTURAL SUBSECTOR

In most developing countries—including India—the rural labour force has been growing rapidly but employment opportunities have been dwindling. As the land available for expansion of agriculture becomes increasingly scarce, opportunities for non-farm employment must expand, if deepening rural poverty is to be avoided. Given the expected growth and composition of large-scale urban industries, they are unlikely to be able to absorb the rising tide of workers migrating from the countryside to the cities. Looking towards the twenty-first century, we must slow the process of the urban spread, with its high social and environmental costs, such as congestion, pollution, skyrocketing land costs, growing violence and increasing incidence of sexually transmitted diseases (STDs) such as AIDS. Expansion of the rural non-agricultural sector, with its emphasis on labour intensive and small-scale enterprises, widens income opportunities for the poor, including small farmers, the landless and women, enabling them to even out extreme fluctuations in their incomes.

The relative importance of the rural non-agricultural subsector and the composition of the various economic activities included in the sector differ widely from region to region in India. Broadly defined, this subsector includes economic activities outside agriculture, carried out in villages and varying in size from households to small factories. Some examples of these activities are cottage, tiny, village and small-scale manufacturing and processing industries; and trade, transportation, construction and services of various kinds. Household industries have declined over time, whereas small-scale, non-household industries have expanded. Cottage enterprises—based on part-time family labour—are relatively less efficient than small-scale, full-time and specialised rural industries. As the cost of labour rises, enterprises with no scope for division of labour continue to lose their cost advantage. The rural towns that serve as trading and distribution centres for both urban and agricultural goods subsequently attract manufacturing activities.

The linkages between the rural non-agricultural and agricultural subsectors are critical for rural development. The growth in farm income provides an expanding market for consumption goods and agricultural inputs produced by the non-agricultural subsector, while agricultural raw materials are processed in the rural non-agricultural subsector. The relative strengths of the consumption and production linkages depend on the pace and pattern of growth in agricultural income, and the production technology used in agriculture. The higher the per capita income growth, the higher is the share of non-food consumption in rural expenditure and, hence, the greater is the stimulus to the growth of the rural non-agricultural subsector. The share of locally produced consumption goods (as against imports from urban areas or abroad) in consumption expenditure depends on the distribution of income in agriculture. It is higher among the medium or small farmers than among the rich.

The Khadi and Village Industries Commission (KVIC) has identified 95 village industries for government support. These industries are divided into the following seven categories:

1. Mineral based industries.
2. Forest based industries.
3. Agrobased industries.

4. Polymer and chemicals based industries.
5. Engineering and non-conventional energy based industries.
6. Textile industry other than *khadi*.
7. Service industry.

In India, cottage and village industries have been an important occupation of the landless and other poor people in villages for ages. It is an important source of income and employment opportunities for them. As a matter of fact, agriculture and rural industries are complementary to each other. This sector has the second largest share of employment after agriculture. It touches the lives of the weaker and unorganised sections of the society, with more than half of those employed being women, minorities and the marginalised. Fifty-seven per cent of the micro and small enterprises (MSEs) units are owner-run enterprises with one person. They account for 32 per cent of the workforce and 29 per cent of the value added in non-agricultural private unincorporated enterprises.

The sector contributes over 40 per cent to the gross turnover in the manufacturing sector, about 45 per cent of manufacturing exports and about 35 per cent of the total exports. In order to give a further boost to this sector, several policy initiatives have been taken by the Government of India, including a scheme of integrated infrastructural development, concessional rate of excise duty to non-registered units, quality certification scheme to acquire ISO 9000, raising project outlay from Rs 30 lakh to Rs 50 lakh in the single window scheme, and adequate and timely supply of credit as per the Nayak Committee (1992) recommendations. Besides, the investment limit for small-scale industry (SSI) units has been increased from Rs 60 lakh to Rs 3 crore, for the tiny sector from Rs 5 lakh to Rs 25 lakh and the composite loan limit for SSI units from Rs 50,000 to Rs 2 lakh.

The Nayak Committee, set up to examine the adequacy of institutional credit to the SSI sector and related aspects, observed that it would be safe to presume that the bulk of the financial needs of the rural segment of the SSI sector was met from private sources, including moneylenders. In regard to the overall SSI sector, it observed that

1. there has been a dispersal of SSI units away from the metropolitan areas and large cities;
2. in spite of the increased flow of credit, the share of the tiny sector and village industries has been dismally low; and
3. establishment of forward and backward linkages to ensure the success of enterprises has not kept pace with the increase in the flow of credit.

Credit is only one of the essential inputs for industrialisation and only if other supporting facilities, including adequate and timely availability of raw materials, skilled labour and marketing support are provided on an assured basis, will entrepreneurs be able to prepare viable proposals and obtain institutional finance. The Nayak Committee recommended, among other things, the creation of a separate fund for modernisation, research and marketing, venture capital assistance for promoting viable projects by technocrat entrepreneurs, and detailed data collection for village and tiny industries.

Infusion of appropriate technology, design skills, modern marketing capacity building and easier access to credit can make this segment an expanding base for self-sustaining

employment and wealth generation, and also foster a culture of creative and competitive industry. Agrofood processing, sericulture and other village enterprises can check rural–urban migration by gainfully employing people in villages. This will also take pressure off agriculture. The MSE sector can open up a window of opportunities in regions like the northeast where large industries cannot be set up due to infrastructure gap and environmental concerns. The income generated from various activities in this subsector is more evenly distributed than that generated in the large-scale manufacturing subsector. Besides, due to the low capital requirement per worker, the subsector can generate more jobs with a given amount of capital than the corresponding large-scale factory industries.

Lack of adequate infrastructure is a major impediment to the development of industries in the rural areas. Electricity, transport, communications and availability of ancillary and allied services, such as suppliers of raw materials and other inputs, semi-skilled and skilled labourers to attend to the problems of machinery, marketing and credit support agencies, and so on, are essential for the growth of industries. In their absence, production activities of tiny units tend to concentrate around the peripheries of urban centres. The Sivaraman Committee has suggested that the responsibility for providing infrastructural and extension support to the development of industries in rural areas (including providing raw material supply) be assigned to the state governments. In the absence of responsive and committed agencies for providing these essential services, banks find the task of supporting the development of rural industries frustrating.

Several ministries, departments and institutions deal with activities falling within the domain of the MSE sector, and have a variety of schemes to support the MSEs. However, the benefits accrue to only a small fraction of the MSEs, as only 13 per cent are registered. In the Eleventh Five Year Plan, we need to adopt a dual strategy to ensure that the unregistered MSEs and units outside the cooperative fold are encouraged to get themselves registered and are also able to benefit from government schemes, pending registration. In fact, the provision of voluntary filing of enterprise memoranda by the MSEs in the new Micro, Small and Medium Enterprises Development Act, 2006 is a step in that direction and should be implemented energetically.

There is need to change the approach from emphasis on loosely targeted subsidies to creating an enabling environment. A cluster approach can help increase viability by providing these units with infrastructure, information, credit and support services of better quality at lower costs, while also promoting their capacity for effective management of their own collectives. Further, in order to improve the competitiveness of these micro, small and medium enterprises (MSME), schemes for establishment of mini tool rooms, setting up design clinics, providing marketing support, sensitisation to intellectual property rights (IPR) requirements and tools, adoption of lean manufacturing practices, wider use of information technology (IT) tools, and so on, should be evolved on a public private partnership (PPP) basis. Brand building can be used as an effective strategy to promote their products in national and international markets. According to the Union Budget 2008–09, a fund of Rs 5,000 crore is to be created in the National Bank for Agriculture and Rural Development (NABARD) in 2008–09 to enhance its refinance capacity for the MSME sector. Similarly, two funds of Rs 2,000 crore each are to be created in the Small Industries Development Bank of India (SIDBI); one for risk

capital financing and the other for enhancing its refinance capacity for the MSME sector. All these measures would be more effective if targeted at identified clusters. It is also necessary to recognise the continuing need to facilitate graduation of these enterprises to higher levels, particularly from small to medium. There is a need to provide incentives for the graduation of MSEs to medium and larger units through well-calibrated fiscal and non-fiscal measures.

CHALLENGES AND OPPORTUNITIES

Achieving food security had been the overriding goal of agricultural policy in India until the 1960s. The introduction and rapid spread of high yielding variety (HYV) seeds in the late 1960s and the early 1970s resulted in a steady growth of output of food grain. Public investment in infrastructure, research and extension, along with crop production strategies, has significantly helped to expand food grain production and stocks. Food grain production, which was 8.2 crore tonnes in 1960–61, has increased to over 21 crore tonnes in 2006–07. India now produces enough food not only for its people but also for export. It could be the potential granary of the world: the country which the world should look up to for feeding its rising population. The present crop yields in India are, however, very low as compared to those in developed countries. For example, in 2004–05, the average yield of paddy in India was 2,900 kg per ha as compared to 6,420 kg in Japan and 6,730 kg in South Korea. The yield gap could be bridged only through, *inter alia*, increased public and private investment in agriculture, widespread use of ecofriendly appropriate new technologies, producer-oriented price policies and professionally managed programmes. If the average cereal yield in India can be increased to the level of the world average, India can become the world's number one nation in terms of food grain production. Therefore, the biggest challenge before India is how to increase its crop yields to the world average level on a sustainable basis, despite such natural calamities as droughts and floods to which India continues to be highly vulnerable even now.

Of late, there has been an increasing incidence of suicides by farmers due to heavy losses suffered by them year after year in agriculture, and the consequent increasing indebtedness, in the four states of Andhra Pradesh, Maharashtra, Karnataka and Kerala. In view of this, the Government of India has approved a rehabilitation package of Rs 16,978.7 crore for suicide prone districts in these four states. The package will be implemented over a period of three years, from 2007–08 to 2009–10. It includes both immediate and medium term measures. The rehabilitation package aims at establishing a sustainable and viable farming and livelihood support system through debt relief to farmers, improved supply of institutional credit, crop-centric approach to agriculture, assured irrigation facilities, watershed management, better extension and farming support services, and subsidiary income opportunities through horticulture, livestock, dairying, fisheries, and so on. So far an amount of Rs 3,728.4 crore of interest on overdue loans has been waived by the banks and Rs 10,086.6 crore (as on 31 December 2007) has been released to Andhra Pradesh, Maharashtra, Karnataka and Kerala under the package (GoI 2008).¹²

Landholdings in India are not only small in size but also widely scattered all over the countryside. Landholdings are also fragmented in those states where consolidation of landholdings has not yet been done. The process of subdivision and fragmentation of landholdings continues unabated generation after generation, under the existing land inheritance laws. Small and fragmented landholdings are a great obstacle to economical use of farm labour and machinery. The subdivision and fragmentation of landholdings needs to be stopped through appropriate legislative measures, such that landholdings below an economically viable level are not allowed to be subdivided further. Effecting such a reform in the structure of landholdings is a great challenge for policy makers. Besides, there is also urgent need for tenancy reforms that protect the rights of tenants, without discouraging the practice of land leasing.

Liberalisation has opened up new opportunities for Indian farmers to benefit from higher world prices for their produce and lower prices for some of the inputs. Export orientation has brought in its wake the need for hightech projects and for exploring international markets for exportable commodities. The assessment of credit demand, appraisal and instruments of financing the hightech projects are all difficult tasks. Meeting the credit needs of this emerging export-oriented hightech sector requires concomitant institutional innovations, for which a beginning has been made with the establishment of agricultural development finance companies. NABARD has to play—and, in fact, it is already playing—a crucial role in meeting this challenge.

Further, with uncertainties in global markets and hardening of the international prices of food, fuels and edible oils, domestic price stability and food security critically depend on growth in this sector. This necessitates working out the forward and backward linkages that enhance productivity through balanced allocation and better utilisation of available resources at all levels of implementation and quantifying output per unit of resource used. The issue of productivity and resource use assumes importance as agriculture continues to support more than half of the total population.

Two new initiatives in the form of National Food Security Mission (NFSM) with an outlay of Rs 4,822 crore and Rashtriya Krishi Vikas Yojana (RKVY) with an outlay of Rs 25,000 crore have been taken in 2007–08 to rejuvenate the agricultural sector. The sector will benefit immensely from these policy interventions. Human resource development of the persons engaged in agriculture is necessary not only to have greater penetration of better technology, but also because new skill sets would be necessary to enable the underemployed labour in this sector to get absorbed in other fast growing sectors.

Of late, there has been a spectacular growth in public awareness about the adverse environmental impacts of economic growth and development. This has come from increasing air and water pollution, soil erosion, depletion of ground water aquifers, denudation and degradation of forests, and increasing waterlogging and soil salinity in canal command areas. In view of this, a new paradigm of sustainable development is emerging. This paradigm does not favour any blind pursuit of economic growth at the cost of environmental degradation. A serious challenge before the agricultural development planners today is how to achieve a faster rate of development, while keeping the natural resources and quality of the environment intact.

Similarly, the rural non-agricultural subsector will have to expand at a much faster rate to provide income and employment opportunities to the surplus rural people. This is also possible if a well thought out long-term national policy for the rural non-farm sector development is formulated and implemented effectively.

Last but not the least, bridging the widening gap between rural and urban areas in terms of basic infrastructure and civic amenities, and thereby reversing the present trend of rural–urban migration is—and will continue to be so in near future—a great challenge for development policy makers, planners and managers. Programmes like the MNP, BNP, SSA and NRHM could be instrumental in narrowing down the rural–urban divide if they were implemented rigorously.

MAIN POINTS

1. India's economy comprises two sectors, namely, rural sector and non-rural sector. The rural sector accounts for about 72 per cent of India's total population. It is composed of two main subsectors, that is, the agricultural subsector and the non-agricultural subsector.
2. In the rural sector, agricultural subsector is the most prominent. This is evident from the fact that about one half of the country's population is dependent on agriculture and allied activities for its livelihood. Agriculture and allied activities contributed about 18 per cent of India's gross domestic product (GDP) at factor cost in 2006–07 at current prices and provided employment to 52 per cent of the country's total labour force. It is also an important source of foreign exchange and raw materials for India's major agro-industries and provides a large market for industrial products. No programme of India's development can ever succeed if it neglects the rural sector.
3. The non-agricultural subsector consists of several economic activities, such as cottage and village industries, *khadi*, handloom, handicrafts, trading of general goods, small shops, petty traders and services such as transport, communication, banking, input supply, and marketing of farm and non-farm produce. The non-agricultural subsector has been growing at a faster rate than the agricultural sector, providing lots of new employment opportunities.
4. Despite the impressive progress that India has made since independence in the field of science and technology, the rural sector and rural people remain grossly underdeveloped with about 221 million (about 28 per cent of India's rural population) of the rural people living below the poverty line in 2004–05 and 41 per cent being illiterate in 2001.
5. The rural sector is characterised by, *inter alia*, the preponderance of small and scattered rural enterprises, lack of basic infrastructure, low productivity, high incidence of poverty and unemployment, and excessive dependence on weather and climatic factors, and the consequent high degree of risk and uncertainty. In view of this, there is a need to reduce the weather induced risk in agriculture

through appropriate crop insurance schemes. It is also necessary to consolidate the scattered and fragmented landholdings and prevent their further subdivision and fragmentation through appropriate legislative measures so that farm labour and machinery could be used more cost effectively.

6. Of late, there has been an increasing incidence of suicides by farmers due to heavy losses suffered by them year after year in agriculture and consequent increasing indebtedness, in the four states of Andhra Pradesh, Maharashtra, Karnataka and Kerala. In view of this, the Government of India has approved a rehabilitation package of Rs 16,978.7 crore for suicide prone districts in these four states. The package will be implemented over a period of three years, from 2007–08 to 2009–10.
7. The non-agricultural subsector of India's rural sector also occupies an important place in India's economy as a source of income and employment opportunities, particularly for the landless. This sector has the second largest share of employment after agriculture. It touches the lives of the weaker and unorganised sections of the society, with more than half of those employed being women, minorities and the marginalised. The micro and small enterprises (MSEs) account for 32 per cent of the workforce and 29 per cent of the value added in non-agricultural private unincorporated enterprises. The rural non-farm sector has been increasing at a faster rate than the agricultural subsector in the recent past, but needs to develop faster to absorb the addition to the rural labour force.
8. The income generated from various activities in the non-agricultural subsector is more evenly distributed than that generated in the large-scale manufacturing subsector. Besides, due to low capital requirement per worker, this subsector can generate more jobs with a given amount of capital than the corresponding large-scale factory industries.
9. The linkages between the rural non-agricultural and agricultural subsectors are critical for rural development. The growth in the agricultural subsector provides an expanding market for consumption goods and agricultural inputs produced by the non-agricultural subsector, whereas agricultural raw materials are processed in the rural non-agricultural subsector.
10. In the wake of increasing liberalisation and globalisation of its economy, India now faces several challenges to cope with and has many opportunities to benefit from. Some of the challenges include maintaining food security and environmental integrity, increasing resource productivity in agriculture and allied activities to at least match the corresponding world averages, bridging the gap between rural and urban areas in terms of basic infrastructure and civic amenities, and ensuring the financial viability of the agricultural sector through increasing farm incomes and reducing the weather induced risk and uncertainty.
11. The major opportunities opened up by globalisation include increased access to the world markets and the consequent possibilities of securing higher prices for farm produce and lower prices for some of the inputs used by the rural producers. The export orientation has brought in its wake the need for hightech projects and for exploring international markets for exportable commodities. Meeting the credit needs of this emerging export oriented hightech sector requires

concomitant institutional innovations, for which a beginning has been made with the establishment of agricultural development finance companies. National Bank for Agricultural and Rural Development (NABARD) is playing a crucial role in meeting this challenge.

12. The launching of two new initiatives in the form of National Food Security Mission (NFSM) with an outlay of Rs 4,822 crore and Rashtriya Krishi Vikas Yojana (RKVY) with an outlay of Rs 25,000 crore in 2007–08, are intended to rejuvenate the agricultural sector. These initiatives will benefit the sector immensely.

NOTES

1. The term, 'Physiocrats' refers to a French school of economic thought of the 1760s, which believed that only agriculture produced an economic surplus or net product.
2. <http://www.indiabudget.nic.in>. Accessed in March 2008.
3. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
4. <http://www.indiabudget.nic.in>. Accessed in March 2008.
5. <http://dacnet.nic.in/eands/agStat06-07.htm>. Accessed in March 2008.
6. <http://dacnet.nic.in/eands/agStat06-07.htm>. Accessed in March 2008.
7. <http://dacnet.nic.in/eands/agStat06-07.htm>. Accessed in March 2008.
8. <http://indiabudget.nic.in> and <http://dacnet.nic.in/eands/agStat06-07.htm>. Accessed in March 2008.
9. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
10. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
11. <http://dacnet.nic.in/earnds/agStat06-07.htm>. Accessed in March 2008.
12. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.

QUESTIONS FOR DISCUSSION

- 2.1. In India, the rich (nearly top 20 per cent of the country's total population) live in a modernised and westernised *India*, having easy access to everything that they desire and enjoying a comfortable life, whereas the poor four-fifths (80 per cent or so) live in an underdeveloped and traditional *Bharat*, lacking access to even the bare necessities of life and highly vulnerable to manmade and natural calamities. Can India ever be a truly developed country so long as this dualism exists and the yawning gap between the rich and the poor is not narrowed down.? Yes/No. If yes, why; and if no, why not?
- 2.2. What are main characteristics of India's rural sector that are obstacles to rural development? How can those obstacles be removed?
- 2.3. How can India's rural non-agricultural sector grow at a faster rate so as to be able to solve the problems of rural poverty, inequality and unemployment?
- 2.4. What are the major challenges that India is facing now and will continue to face in the near future, and how can India cope with those challenges?
- 2.5. Outline a strategy to enable India to harness the opportunities emerging in the new era characterised by globalisation and liberalisation.

3

Measures of Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- explain the necessity of rural development measurement for rural development policy makers and managers;
- define various measures of level of rural development and use them;
- define various measures of distribution of benefits from development and use them;
- analyse through questions whether a particular area, region or nation is on a path of development or retrogression and
- describe various concepts and measures of poverty and identify methodological problems in estimating rural poverty.

INTRODUCTION

Statistical measurement of the level and pace of rural development is important for a number of reasons. Quantitative measures of rural development are needed to:

1. indicate the extent of economic and social well-being of the rural people;
2. serve as a benchmark for future planning;
3. serve as instruments of monitoring, evaluation and control of ongoing programmes;

4. facilitate spatial and temporal comparisons of development; and
5. serve as criteria for advancing loans.

Needless to emphasise, if the measures are to be meaningful, they must be consistent with the objectives of rural development.

The main objectives of rural development in all societies, irrespective of their economic, political and socio-cultural systems are to:

1. increase the availability and improve the distribution of life-sustaining goods and services, such as food, clothes, shelter, health and security;
2. raise the per capita purchasing power and improve its distribution by providing better education, productive and remunerative jobs, and cultural amenities; and
3. expand the range of economic and social choices to individuals by freeing them from servitude and dependence.

Therefore, a measure of rural development should provide, at the minimum, an indication of the commonly accepted objectives of development, such as per capita availability of life-sustaining goods or per capita real income in rural areas, as well as some idea of the distribution of income, assets and other means of socio-economic welfare.

There is at present no single indicator of rural development which adequately captures its multifaceted nature. A variety of indicators have been used by economists to reflect the multiplicity of goals which characterise rural development. For the sake of orderly presentation, we categorise the indicators into two classes, namely, measures of the level of rural development and measures of distribution of income. A critique of some of these indicators is presented in the following sections.

MEASURES OF LEVEL OF RURAL DEVELOPMENT

The following measures are commonly used (or can be used) to measure the level of rural development at a particular time in a particular place, as well as over time and across space.

Per Capita Real Gross National Product (GNP)

The GNP is the market value of all final goods and services produced in a year, and attributable to the factors of production supplied by the normal residents of the country concerned. Real GNP is the GNP adjusted for changes in prices, and is computed by dividing GNP by the General Price Index (GPI). Per capita real GNP is the most widely used measure of the economic well-being of people. If computed for rural people separately, it could be used as a measure of the economic component of rural development. An increase in the average real GNP per capita means that, *ceteris paribus*,

we are economically better off. But in reality, GNP has the following weaknesses as a measure of economic well-being:

1. It does not include the value of physical and mental satisfaction that people derive from leisure.
2. It does not include the value of non-paid housewives' services and home labour, such as gardening, painting, and care of pets and domestic animals. If a bachelor marries his maid, the GNP is reduced because he no longer pays for her services.
3. It does not assign any negative values to those side effects of economic activities that reduce the total satisfaction from the output of those activities. The examples of such side effects are air pollution, water pollution, noise and other disagreeable aspects that accompany industrialisation.
4. It does not give any negative weight to the 'disamenities' of living in dirty, noisy and crowded cities and slums, compared to more clean, open and pleasant surroundings. Nor does it assign any positive weight to such environmental amenities as clean air and water, and a pollution-free environment.
5. It is not only difficult but also time-consuming and expensive to determine per capita income of rural people, most of whom are self-employed and, being illiterate, do not keep any written records of their income and expenditure. It takes quite an experienced and well-trained rural researcher/investigator to find out the true per capita income of rural people.

Clearly, the GNP does not include everything that contributes to human happiness, and does not exclude every thing that diminishes it. But despite all its weaknesses, per capita real GNP is the only quantitative indicator of the economic component of rural development available for intra-national and international comparisons over time and over space.

Per Capita Consumption Expenditure

Given the weaknesses of per capita income as a measure of rural development, per capita consumption expenditure of rural people is considered a better measure of rural development for several reasons, including relative ease of recall by the respondent of the expenditure incurred and the general tendency of rural people not to hide any expenditure, as compared to income. Per capita consumption expenditure is a reasonably good proxy variable for per capita income. The National Sample Survey Organisation (NSSO) conducts sample surveys all over India at regular intervals to estimate the consumption expenditure for both urban and rural people. The latest round (sixty-first) was conducted in 2004–05. The NSSO estimates are considered reasonably reliable. Besides, other estimates of consumption expenditure are also available for selected areas from research reports of institutions and scholars. Like nominal income, nominal consumption expenditure also should be adjusted for changes in the GPI over time and across space to make it useful for comparison purposes.

Per Capita Public Expenditure on Community Facilities and Services

The level of rural development in a country is a function of the per capita quantity of various goods and services consumed by its rural population, in a particular reference period of time. It does not matter whether the goods and services consumed are purchased by a person with his personal income or he receives them without specific expenditure on his part. Certain services, facilities and civic amenities, such as schools, hospitals, roads, parks, police protection and street lights, are provided free by the government or at a nominal cost to its people. The availability of these facilities and services represents 'real income' and, therefore, constitutes part of the level of living. Per capita public expenditure on such services and amenities is a good measure of socio-economic welfare. For comparisons over time and space, this measure should also be adjusted for changes/differences in the GPI. This measure, used in conjunction with per capita income or expenditure, constitutes a reasonably satisfactory measure of rural development. However, estimates of this variable/measure are not made by any organisation/agency in India. Therefore, one has to collect the requisite information from the office records of village panchayats and other village/block level organisations to estimate this measure and use it.

Physical Quality of Life Index (PQLI)

This measure was developed by Morris and McAlpin (1982: 1–30) to determine the impact of development projects on their target groups. The measure is called the PQLI. It supplements the per capita real GNP, which is the most widely used measure of economic growth. It has three components, namely, infant mortality, life expectancy at age one and basic literacy. These three component indicators lend themselves to intra-national and international comparisons, are simple to compute and understand, are fairly sensitive to changes in distribution of benefits of development, do not reflect the values of any specific cultures and reflect results, not inputs.

In the calculation of GNP, various goods and services can be combined via a common element: market price. But the three component indicators of PQLI do not have any common element that values them all. Instead, a simple indexing system is used to combine them into a single index, PQLI. For each indicator, the performance of individual state/country is evaluated on a scale of 0 to 100, where zero represents an absolutely defined 'worst' performance, and 100 represents the 'best' performance. Once the performance for each indicator is scaled to this common measure, a composite index is calculated by averaging the three indicators, giving equal weight to each of them. The resulting PQLI, thus, is also scaled 0 to 100.

Morris and McAlpin computed the PQLI for 150 countries. The range for each component index was based on the examination of the historical experience of the countries concerned. The literacy index ranged from 0 literacy to 100 per cent literacy for the population aged 15 years and more, the infant mortality rate from 229 to 7 per thousand

births, and life expectancy at age one from 38 to 77 years. Using these ranges and actual data for Nigeria, India and the USA, they computed a PQLI for each of them, as shown in Table 3.1. They argue that PQLI measures the combined effects of nutritional status, public health facilities, family income and social relations.

Table 3.1 Life Expectancy at Age 1, Infant Mortality and Literacy: Actual Data and Index Numbers (Early 1970s)

Country	Life expectancy at age 1 ¹		Infant mortality ²		Literacy ³		PQLI ⁴
	Years	Index No.	Per 1,000 live births	Index No.	Per cent	Index No.	
Nigeria	49	28	180	22	25	25	25
India	56	46	122	48	34	34	43
USA	72	87	16	96	99	99	94

Source: Morris and McAlpin (1982: 18).

Notes: 1. Years of life expectancy are converted to an index number according to the formula: (Life expectancy at age 1 – 38) 0.39.

2. The infant mortality rate is converted to an index number according to the formula: (229–Infant mortality rate per thousand) 2.22.

3. Literacy index numbers correspond to the actual data.

4. Average of life expectancy at age 1, infant mortality and literacy indices (equally weighted).

Composite Index of Rural Development

Duly recognising the multidimensional nature of rural development, a composite index of rural development was developed by Mathur (2005: 159–90). Twenty-five indicators depicting all important dimensions of rural development were identified and grouped into nine key components as shown in Table 3.2.

All the 25 indicators of state level rural development were converted into an index with the all-India values of these indicators equal to 100. For deriving an overall composite index of state level rural development based on the 25 indicators, a two-step procedure was followed. In the first step, nine separate group level composite indices of rural development were computed. For this purpose, for all the six groups which had more than indicator, the group level indices were computed as a simple average of the indices of rural development belonging to each of the groups concerned. The nine composite indices thus computed portray different facets of state level rural development in India. In the second step, all the nine group level composite indices were aggregated into one to arrive at the composite index of state level rural development. For this purpose, two alternative methodologies were adopted. In the first alternative, a simple procedure of the type used for computing group-wise composite indices was followed. The Composite Rural Development Index (CRDI) thus computed was called Simple Index. In this alternative, an equal weight was assigned to each of the nine group indices. In the second alternative, a weighted average was computed for combining the nine indices. The weights were derived from a variant of the First Principal Component

Table 3.2 Indicators of Rural Development by Group

<i>Group No.</i>	<i>Group Name</i>	<i>Indicator Number and Description of Indicator</i>
I	Agricultural productive efficiency	1. Productivity per hectare
		2. Productivity per worker
		3. Per cent of villages electrified
II	Workforce diversification	4. Per cent of non-agricultural workforce
III	Rural educational infrastructure	5. Per cent enrolment at primary and middle stage
		6. Retention rate
		7. Density of primary and middle schools in rural areas
		8. Per capita number of primary and middle school teachers
IV	Rural health infrastructure	9. Per capita number of primary health centres (PHCs)
		10. Per capita number of rural doctors
		11. Per capita number of nurses/ <i>dais</i> /VLWs
		12. Rural infant mortality rate
		13. Rural female infant mortality rate
V	Rural amenities	14. Per cent of rural households with drinking water
		15. Per cent of rural households with electricity connection
		16. Per cent of rural households with toilets
		17. Per cent of rural <i>pucca</i> houses
VI	Transport infrastructure	18. Per cent of villages having surfaced roads
VII	Human capital content of workforce	19. Per cent of educated (primary and middle level) rural workforce
		20. No. of commercial banks per capita
VIII	Rural financial infrastructure	21. Rural credit of commercial banks per capita
		22. Rural deposits of commercial banks per capita
		23. Number of cooperative societies per capita
IX	Rural Standard of living	24. Per capita rural consumption expenditure
		25. Per capita rural food consumption expenditure

Source: NIRD (2005: 160–61).

Method (Kundu 1980). This index may be called the Weighted Index. Table 3.3 presents the Simple and Weighted indices of rural development for the years, 1981, 1991 and 2001 by state. As shown in the table, Kerala emerged as the most highly developed state in India in terms of both the Simple Index and the Weighted Index in all the three reference years and Punjab followed Kerala closely. At the other extreme, Madhya Pradesh was the least developed state in the years 1981 and 1991, and Bihar in 2001.

Human Development Index (HDI)

Rediscovering the truth that people must be at the centre of all development, the United Nations Development Programme (UNDP) decided to bring out every year, beginning in 1990, a report on the human dimensions of development. The *Human Development*

Table 3.3 Simple and Weighted Composite Indices of Rural Development by State for the Years 1981, 1991 and 2001

State	1981		1991		2001		Rank in 2001	
	Simple Index	Weighted Index	Simple Index	Weighted Index	Simple Index	Weighted Index	Simple Index	Weighted Index
Andhra Pradesh	91.2	233.7	83.7	231.9	99.3	209.8	11	11
Assam	106.1	272.5	93.6	259.9	81.5	174.0	16	16
Bihar	81.1	209.5	74.2	205.8	70.1	149.4	17	17
Gujarat	106.0	271.5	108.4	297.1	121.9	258.1	6	6
Haryana	136.0	347.5	129.0	351.5	118.3	251.6	7	7
Himachal Pradesh	177.5	443.8	131.3	359.3	156.1	325.7	3	3
Jammu & Kashmir	134.6	343.9	106.4	295.7	110.2	232.9	9	9
Karnataka	111.6	284.8	101.7	279.1	117.8	248.0	8	8
Kerala	190.8	487.7	194.8	536.3	185.6	391.3	1	1
Madhya Pradesh	70.8	183.3	71.5	201.0	86.8	183.2	14	14
Maharashtra	112.1	287.2	110.9	303.9	133.6	282.5	5	5
Orissa	82.1	212.2	75.3	210.6	93.3	196.2	12	12
Punjab	190.0	479.3	172.7	467.5	165.8	349.8	2	2
Rajasthan	80.8	208.4	83.7	231.6	86.2	182.0	15	15
Tamil Nadu	135.9	342.5	124.8	341.2	151.0	321.0	4	4
Uttar Pradesh	85.0	219.2	86.5	237.9	87.2	186.0	13	13
West Bengal	104.2	267.9	103.7	286.5	103.2	219.7	10	10
India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	–

Source: NIRD (2005: 160–61).

Report 1990 was the first such report. The report addresses the question of how economic growth does or does not promote human development. It discusses the meaning and measurement of human development, proposes a new composite index of human development, summarises the record of human development over the past three decades and sets forth strategies for human development in the 1990s (UNDP 1990).

The *Human Development Report 1990* defined human development as the process of increasing people's options. It stressed that the most critical choices that people should have include the options to lead a long and healthy life, to be knowledgeable, and to find access to the assets, employment and income needed for a decent standard of living.

Development, thus defined, cannot be adequately measured by income alone. The report therefore proposed a new measure of development, the HDI, composed of three indicators: life expectancy, adult literacy and income expressed in logs. The subsequent Human Development Reports have made some refinements in the procedure of defining the component indicators and computing the HDI. The refinements include adjustment of income for differences in purchasing power and disparities in income distribution, combining adult literacy and mean years of schooling into an index of educational attainment, and computing disaggregated HDI for males and females and for different

population groups. In addition, the HDI has also been supplemented by a Human Freedom Index, and indicators of human security for selected countries for which data are available.

The HDI for 1994 was calculated on a different basis from that in the previous years. Maximum and minimum values were fixed for the four basic variables: life expectancy (85 years and 25 years), adult literacy (100 per cent and 0 per cent), mean years of schooling (15 years and 0 years), and income adjusted for differences in purchasing power and expressed in terms of Purchasing Power Parity (PPP) (\$40,000 and \$200). For income, the threshold value was taken to be the global average real GDP per capita of PPP \$5,120. Multiples of income beyond the threshold were discounted using a progressively higher rate (UNDP 1994: 92).

The minimum and maximum values of component variables were fixed without reference to particular countries, that is, the values were norms. The minima were those observed historically, going back about 30 years, and the maxima were the limits of what could be envisioned in the next 30 years. This permitted more meaningful comparisons across countries and over time.

An index was prepared for each of the component variables of HDI, using the following formula:

$$\text{Component index} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

Illustration of the Procedure of Computing HDI

For illustration, we take a pair of countries, one industrial (Greece) and one developing (India). Their basic variables are presented in Table 3.4.

Country	Life expectancy	Adult literacy (%)	Mean years of schooling	Income (PPP\$)
Greece	77.3	93.8	7.20	7,680
India	59.7	49.8	2.4	1,150

Source: UNDP (1994: 92–93).

Life expectancy index

$$\text{Greece} = \frac{77.3 - 25.0}{85.0 - 25.0} = \frac{52.3}{60.0} = 0.872$$

$$\text{India} = \frac{59.7 - 25.0}{85.0 - 25.0} = \frac{34.7}{60.0} = 0.578$$

Adult literacy index

$$\text{Greece} = \frac{93.8 - 0.0}{100.00 - 0.0} = \frac{93.8}{100} = 0.938$$

$$\text{India} = \frac{49.8 - 0.0}{100.00 - 0.0} = \frac{49.8}{100.0} = 0.498$$

Mean years of schooling index

$$\text{Greece} = \frac{7.0 - 0.0}{15.0 - 0.0} = \frac{7.0}{15.0} = 0.467$$

$$\text{India} = \frac{2.4 - 0.0}{15.0 - 0.0} = \frac{2.4}{15.0} = 0.160$$

Educational attainment index

$$\text{Greece} = 2(0.938) + 0.467 = 2.343/3 = 0.781$$

$$\text{India} = 2(0.498) + 0.160 = 1.156/3 = 0.385$$

Adjusted income

Greece's income is above the threshold, but less than twice the threshold. Thus, the adjusted income for Greece was computed as follows:

$$\begin{aligned} \text{Greece} &= 5,120 + 2(7,680 - 5,120)^{1/2} \\ &= 5,120 + 101 \\ &= 5,221 \end{aligned}$$

The indexed adjusted income for Greece was as follows:

$$\text{Greece} = \frac{5,221 - 200}{5,385 - 200} = \frac{5,021}{5,185} = 0.968$$

India's income is below the threshold, so it needs adjustment. To calculate the distance for income, we used the maximum adjusted income (5,385) and the minimum (200). The indexed adjusted income for India was as follows:

$$\text{India} = \frac{1,150 - 200}{5,385 - 200} = \frac{950}{5,185} = 0.183$$

The indices for the three component variables and the HDI thus computed for Greece and India, are presented in Table 3.5.

Table 3.5 Indices of Life Expectancy, Educational Attainment, Adjusted Income and HDI for Greece and India

Country	<i>Indexed life expectancy</i>	<i>Indexed educational attainment</i>	<i>Indexed adjusted income</i>	<i>All three</i>	<i>HDI</i>
Greece	0.872	0.781	0.968	2.621	0.874
India	0.578	0.385	0.183	1.146	0.382

Source: UNDP (1994: 92).

Countries having an HDI below 0.5 are considered to have a low level of human development, those between 0.5 and 0.8 a medium level, and those above 0.8 a high level (UNDP 1994: 92).

No change/modification in the method of computing HDI is contemplated in the near future. But greater emphasis will be placed on improving human development statistics. The HDI is by far the most widely accepted indicator of human development (and lack of development or poverty). In 1994, India's HDI was 0.446 and its rank was 138th among 175 nations of the world. Canada had the highest HDI (0.960) and Sierra Leone the lowest (0.176). In 2005, India's HDI increased to 0.619 (UNDP 2008).¹

The HDI has been used to

1. stimulate national political debate;
2. give priority to human development;
3. highlight disparities within countries; and
4. open new avenues for analysis.

The HDI is, however, not a perfect measure of human development. It does not include important indicators such as gender or income inequality, respect for human rights, and freedom.

MEASURES OF INCOME DISTRIBUTION

The level of per capita real GNP and its distribution are both equally important from the point of view of aggregate economic welfare. In general, higher per capita real GNP and its more equitable distribution mean a higher level of economic well-being. A country with a high per capita real GNP but with a less equitable distribution of income, would rank lower in terms of aggregate economic welfare than the one with the same level of per capita real GNP but with a more equitable distribution of income.

There are a wide variety of measures which are used by economists to measure income distribution. They include, among others, the Pareto index, the shares of the bottom 20 per cent and the top 20 per cent of households in the aggregate income, standard deviation of logarithms of incomes, the Lorenz Curve and the Gini Concentration Ratio (GCR). A good measure of income distribution should possess two characteristics. First, it should be unaffected by equal proportional increases in all incomes, so that if the distribution of income for year X is simply a scaled-up version of that for year Y, then we should regard them as characterised by the same degree of inequality. Second, it should

be sensitive to disproportionate changes at all levels of income, so that if from year X to year Y, the incomes of lower income households increase proportionately more than the incomes of the higher income households, this ought to lead to a strictly positive reduction in the index of inequality and not merely leave it unchanged (Atkinson 1970: 253–54).

The following is a brief description of the procedure for computing some of the commonly used measures of income inequality.

The Lorenz Curve

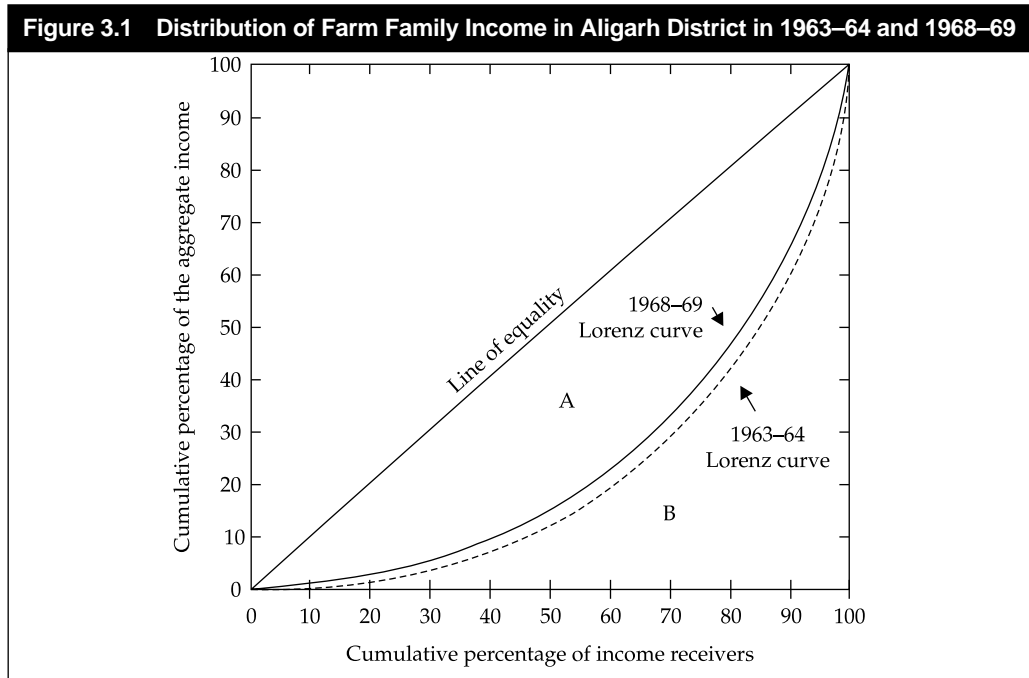
This is a graphical measure of income distribution and income inequality. The information required to draw a Lorenz Curve consists of a frequency table showing the distribution of income by decile groups of households. In simpler words, the table should show for each of the decile groups, its share in the aggregate income, as is done in Table 3.6. To draw a Lorenz Curve, the cumulative percentage of income receiving households is represented on the horizontal axis, the cumulative percentage of aggregate income on the vertical axis, and the curve represents the locus of all the combinations of the two cumulative percentages. The Lorenz Curves shown in Figure 3.1 are drawn on the basis of the figures presented in Table 3.6. The diagonal line represents a perfectly equal distribution of income and, hence, is known as the line of equality. In general, the farther the Lorenz Curve is from the line of equality, the higher the degree of income inequality is.

Table 3.6 Relative Shares of Aggregate Income Received by Various Decile Groups of Households in Aligarh District in 1963–64 and 1968–69

Decile group	Percentage of aggregate income			
	1963–64		1968–69	
	Simple	Cumulative	Simple	Cumulative
Bottom 10 per cent	-0.42	-0.42	0.77	0.77
Second 10 per cent	1.04	0.62	2.37	3.14
Third 10 per cent	2.29	2.91	3.57	6.71
Fourth 10 per cent	4.06	6.97	5.12	11.83
Fifth 10 per cent	6.10	13.07	6.71	18.54
Sixth 10 per cent	8.00	21.07	8.89	27.43
Seventh 10 per cent	10.31	31.38	11.55	38.98
Eighth 10 per cent	13.94	45.32	13.86	52.84
Ninth 10 per cent	18.39	63.71	17.56	70.40
Top 10 per cent	36.29	100.00	29.60	100.00

Source: Singh (1973: 4).

The Lorenz Curve is a simple and commonly used measure of income inequality. It could be used to compare income distribution over time and across space. Its limitation is that, whereas it can show the difference in income inequality, it cannot quantify it. For instance, in Figure 3.1, since the Lorenz Curve for the year 1963–64 lies above that for the year 1968–69, we could say that the income inequality was higher in 1963–64 than in 1968–69, but we cannot quantify the difference.



Source: Singh (1973).

The Gini Concentration Ratio (GCR)

This ratio was invented by Corrado Gini in 1913. It is the most commonly used measure of income inequality these days. The ratio can be approximated either from the Lorenz Curve or the mean difference.

When approximated from the Lorenz Curve, it represents the proportion of the area lying between the diagonal and the Lorenz Curve to the total area under the diagonal. If we denote the area inside the Lorenz Curve as A and outside the Lorenz Curve as B, the ratio would be $A/A + B$ (see Figure 3.1). Hence, the range of this ratio is from zero to one; zero being perfect equality and one perfect inequality.

When computed from the mean difference, the GCR may be defined as:

$$\text{GCR} = \frac{\sum_{i=1}^n \sum_{j=1}^n f_i f_j / x_i - x_j}{2\bar{x}N}$$

where n is the number of income classes, f_i and f_j are the frequencies in the i th and j th classes, x_i and x_j the mean incomes of the i th and j th classes, N is the total number of income receivers, and \bar{x} the overall mean income. Hence, the ratio is one-half of the weighted average of all absolute differences between all possible pairs of incomes.

The GCR possesses both the properties of an ideal measure of income inequality described earlier.

The Standard Deviation of Logarithms of Incomes

This is another commonly used measure of income inequality. It is defined as:

$$\text{S.D.} = \left[\frac{1}{N} \sum_{i=1}^n (\log x_i - \log x)^2 \right]^{1/2}$$

where N is the total number of individuals/households, x_i is the income of the i_{th} individual/household and x is the mean income of all the individuals/households.

This measure is particularly useful when income is approximately log-normally distributed. A variable is log-normally distributed when its logarithm is normally distributed. Like the GCR, this measure also possesses both the properties of an ideal measure of income inequality, but it attaches more weight to income transfers at the lower end of the distribution.

MEASURES OF DEVELOPMENT SIMPLIFIED

Realising that reduction or elimination of rural poverty, inequality and unemployment is an important index of rural development, we may specify a few simple measures by posing the following six questions:

1. Has the number of rural people below the absolute poverty line been declining over time?
2. Has the degree of income inequality in rural areas been declining over time?
3. Has the level of rural unemployment been declining over time?
4. Have the nature and quality of public educational, health and other social and cultural services in rural areas been improving over time?
5. Has economic progress enhanced individual and group esteem of rural people, both internally vis-à-vis one another, and externally vis-à-vis other nations and regions?
6. Finally, has economic progress expanded the range of choices available to rural people, and freed them from external dependence and internal servitude to other men and institutions?

If the answer to each of these questions is 'yes', then clearly these phenomena constitute real rural development, and a nation in which they are manifested can unquestionably be called 'developed'.

CONCEPTS AND MEASURES OF RURAL POVERTY

The term 'rural poverty' is the opposite of the term 'rural development'. It implies the lack of development, or underdevelopment, and therefore, the knowledge of its measures also is as important for a student of rural development as that of measures of rural development. In this section, we present some commonly used measures of rural poverty.

Rural poverty is a worldwide problem; it exists in both developing and developed countries of the world. Over one billion people in the world are estimated to be living in poverty. The incidence of poverty is highly uneven among the regions of the world, among countries within those regions, and among localities within those countries. Nearly half of the world's poor live in South Asia, a region that accounts for roughly 30 per cent of the world's population. Alleviation of poverty has been an important objective of development policies and programmes all over the world, including India.

Connotations and Definitions of Poverty

There is no universally acceptable definition of poverty, although there are several connotations and definitions in vogue. Poverty implies a condition of life characterised by deprivation of some sort or the other, and perceived as undesirable by the person(s) concerned or others. It is a multidimensional concept and phenomenon. Generally, there is a consensus among scholars about poverty being conceived and defined as absolute or relative. Absolute poverty implies a person's lack of access to objectively determined reasonably adequate quantities of goods and services to satisfy his material and non-material basic needs. Relative poverty, on the other hand, means that a person's access to the basic needs of life is relatively lower, as compared to some reference group of people. Between two households or two persons, one may be considered as poor, while the other in comparison may not be so, even though both may be in a position to fulfill their basic material needs.

Criteria for Measuring Poverty

Measurement of poverty is beset with numerous conceptual, methodological and empirical problems. Conceptually, it is difficult to define poverty in operational terms that are universally acceptable. Methodologically, there is no consensus among scholars about the best indicator or measure of poverty, and empirically, given the choice of a particular measure of poverty, it is very difficult to collect reliable data necessary for computing the value of the indicator/measure chosen. These problems notwithstanding, policy makers, planners and scholars have attempted to measure poverty, and have used poverty measures to monitor changes in the level/incidence of poverty and for other purposes.

The magnitude of poverty at any given point in time depends on the criteria or norms used to define poverty and determine the poverty line. There are two criteria or norms usually employed to define the poverty line:

1. The norm based on the concept of a nutritionally adequate diet.
2. The norm based on the concept of a minimum level of living.

A number of research scholars have attempted to estimate the cost of providing a nutritionally adequate diet. For example, Dandekar and Rath (1971: 8–9), on the basis of an average calorie intake of 2,250 per capita per day, estimated the poverty line to correspond to a consumer expenditure of Rs 15 per capita per month for rural households, and Rs 22.50 for urban households at 1960–61 prices.

As far as the second norm based on the concept of a minimum level of living is concerned, a distinguished Working Group² constituted by the Planning Commission, Government of India, in July 1962, deliberated on the question of what should be regarded as the nationally desirable minimum level of consumer expenditure. The study group recommended that a per capita monthly consumer expenditure at 1960–61 prices of Rs 20 for rural areas and Rs 25 for urban areas should be deemed the national minimum. This does not include expenditure on health and education, which are expected to be provided by the state; the 'minimum' for the urban areas assumed an element of subsidy in urban housing.

A 'Task Force on Projection of Minimum Needs and Effective Consumption Demand' constituted by the Planning Commission in 1979 defined the poverty line as that per capita expenditure level at which the average per capita per day calorie intake was 2,400 kcal for rural population and 2,100 kcal for urban population. The recommended poverty line was Rs 49.09 per capita per month for rural population and Rs 56.64 per capita per month for urban population at 1973–74 prices. The Task Force also recommended an adjustment in the consumption expenditure levels estimated by the NSSO by raising it by a 'factor' to make it consistent with the total level of private consumption expenditure reported in the National Accounts Statistics (NAS), which was higher. This 'factor' was small in the beginning but grew larger and larger over the years.

The Expert Group (EG) constituted by the Planning Commission in 1989 recommended the continuation of the Task Force poverty line (Rs 49.09 for rural areas and Rs 56.64 for urban areas at 1973–74 prices) as the level separating the poor from the non-poor. The EG recommended specially constructed state-wise indices for updating the poverty line for price changes. It also recommended the abandoning of the adjustment of NSSO-based consumption expenditure with NAS consumption expenditure, since the reasons for the differences were diverse and the NSSO survey obtained direct information on consumption and, hence, was more reliable. Following the EG recommendation, the poverty series were revised by the Planning Commission from 1973–74 onwards. Since then the official poverty estimates are based on the methodology recommended by the EG. The methodology suggested by the EG is summarised as follows (Radhakrishna and Ray 2005).

The poverty lines are anchored to a fixed commodity basket corresponding to the Task Force recommended poverty line (Rs 49.09 per person per month at 1973–74 prices for rural areas and Rs 56.64 for urban areas, as specified in the previous paragraph). The rural commodity basket suggested by the EG contained 2,400 kcal per capita per day in rural areas and the urban food basket had 2,100 kcal per capita per day in 1973–74. The use of calorie norm was taken as an approximation to what may be considered as an acceptable ‘minimum needs’. The consumption basket is common to all states. In order to take care of the changing tastes and preferences, the EG recommended that the consumption basket be revised once in five years. This was to take care of ‘minimum needs’ as derived from the chosen nutrition attributes as revealed by the behaviour patterns of consumers.

The consumption basket thus identified separately for rural and urban areas is evaluated at state specific prices to arrive at state specific poverty lines in the base year, 1973–74. The state-wise poverty lines computed for the base year 1973–74 are adjusted for prices for the subsequent years. For any year, poverty levels are estimated for each state using the state level consumer expenditure distribution. Aggregating the state-wise poverty ratios, the all-India poverty ratio is estimated. Given the all-India poverty ratio, poverty line is estimated using the consumer expenditure distribution for that year. The state specific poverty lines for the year 2004–05 are presented in Table 3.7.

We now briefly present some commonly used measures/indicators of poverty.

Some Common Measures and Indicators of Poverty

Though Head Count (HC) is the most popularly used measure, three other measures, that is, Poverty Gap (PG), Squared Poverty Gap (SPG) and Sens’s Index are also important for their properties. The first three measures belong to a class of additive measures. There are good surveys on the measurement of poverty (Atkinson 1987; Foster 1984). We briefly mention the main issues having a bearing on policy analysis. Let y denote per capita consumer expenditure and z denote the poverty line. Let $f(y)$ be the density function and $F(y)$ be the cumulative distribution function (CDF). A function $f(y, z)$, non-increasing in y and non-decreasing in z , is a measure of poverty. A desirable property for the function is homogeneity. In other words, the measure is scale neutral. Various ways of aggregating the $p(y, z)$ ’s have been proposed in the literature. However, additive measures satisfy sub-group consistency, which means that when poverty increases in any sub-group of the population (say agricultural labourers) without a decrease elsewhere, the aggregate poverty should also increase.

A sub-group inconsistent measure may mislead policy analysis, as the measure may not show decline in national poverty even when it declined in a particular area. The class of additive poverty measures is given by:

$$P(z) = \int p(y, z) f(y) dy \quad (3.1)$$

The limits of integration are 0 and q . All the three measures of poverty, that is, HC, PG and SPG are derived by taking $(1 - y/z)^\alpha$ for $p(y, z)$ and giving 0, 1 and 2 to α :

Table 3.7 State Specific Poverty Lines in India in 2004–05

S.No.	State/UTs	(Rs per capita per month)	
		Rural	Urban
1.	Andhra Pradesh	292.95	542.89
2.	Assam	387.64	378.84
3.	Bihar	354.36	435.00
4.	Chhattisgarh	322.41	560.00
5.	Delhi	410.38	612.91
6.	Goa	362.25	665.90
7.	Gujarat	353.9	541.16
8.	Haryana	414.76	504.49
9.	Himachal Pradesh	394.28	504.49
10.	Jammu & Kashmir	391.26	553.77
11.	Jharkhand	366.56	451.24
12.	Karnataka	324.17	599.66
13.	Kerala	430.12	559.39
14.	Madhya Pradesh	327.78	570.15
15.	Maharashtra	362.25	665.90
16.	Orissa	325.79	528.49
17.	Punjab	410.38	466.16
18.	Rajasthan	374.57	559.63
19.	Tamil Nadu	351.86	547.42
20.	Uttar Pradesh	365.84	483.26
21.	Uttarakhand	478.02	637.67
22.	West Bengal	382.82	449.32
23.	Dadra & N. Haveli	362.25	665.90
	All-India*	356.30	538.60

Source: Anonymous (2007: 44).

Note: *The poverty line (implicit) at the all-India level is worked out from the expenditure class-wise distribution of persons (based on Uniform Recall Period [URP] consumption, that is, consumption data collected from 30-day recall period for all items and the poverty ratio at all-India level. The poverty ratio at all-India level is obtained as the weighted average of the state-wise poverty ratios.

$$P(z) = \int (1 - y/z)^\alpha f(y) dy \quad (3.2)$$

The limits of integration are 0 and q .

The Head Count (HC) Index

This measure is widely used now-a-days. It is simply the proportion of population whose consumption (y) is less than the poverty line (z). This is simply the value of $P(z)$ when $\alpha = 0$ in equation (3.2). The measure is easy to understand and communicate, but it has two serious drawbacks which affect policy analysis. First, it violates monotone axiom of welfare, which states that an improvement in the income of some people, given the incomes of others, should reduce poverty. The HC ratio is not sensitive to changes in income as long as these changes do not move a person from one side of poverty line

to the other. The measure also violates the transfer axiom of welfare, which states that transfers from a richer to a poorer person should reduce poverty. This violation has a serious implication that a given improvement of incomes through policy interventions will have high impact if those who are close to the poverty line are selected.

The Poverty Gap (PG) Index

This is obtained by setting $\alpha = 1$ in equation (3.2). It measures the depth of poverty as it depends on the distances from the poverty line as well as the number of the poor. The widely used income gap ratio is $I = 1 - \mu^p/z = PG/H$, where, μ^p is the mean value of y for the poor. It measures average proportionate shortfall below the poverty line. This is a deceptive measure because if a poor person with a standard of living above μ^p escapes poverty, the income gap ratio will rise, though no one is worse off and one of the poor is, in fact, better off. Therefore, PG is a better measure than the income gap ratio. While it satisfies the monotone axiom, it is insensitive to transfers from a better off poor to another poor person, as the gap remains the same as long as both remain poor. While it gives depth of poverty, it does not indicate the severity of poverty, as it uses no weight for the gap from the poverty line.

The Squared Poverty Gap (SPG) Index

This measure, proposed by Foster et al. (1984), indicates the severity of poverty and it is obtained by taking $\alpha = 2$. This is a strictly convex function, a desirable property of a welfare function.

Sen's Index

Sen (1976) proposed an index of poverty that combines the number of poor, the depth of poverty and the distribution of the poor within the group. The formula is given by:

$$P_s = 2/(q + 1) n \sum (1 - yi/z) (q + i + 1) \quad (3.3)$$

where q is the number of poor and $q + i + 1$ is the weight accorded to the i th poor person from the poverty line. The formula can be expressed in terms of the average of the HC (P_0) and PG (P_1) measures weighted by the Gini coefficient of inequality among the poor (G^p).

$$P_s = P_0 G^p + P_1 (1 - G^p) \quad (3.4)$$

Some estimates of HC index of poverty are presented in Chapter 10, Section 10.2 of this book.

The Housing Index

Gibbons (1997) proposed this index as a cost effective measure/tool for identifying the poor. He asserts that this index has been found to be valid and useful in a number of countries, such as China, Vietnam, the Philippines, Indonesia, India and Bangladesh, and that the index can help identify about 80 per cent of the poor very quickly; it takes about five minutes for an experienced field assistant to use the index properly.

The Housing Index has three components, namely, (a) the size of the house; (b) the physical condition of the house, as reflected in the materials used in its construction; and (c) the type of materials used for making the roof of the house. All the three dimensions of the index can be looked at and assessed through going up and down the lanes/streets in a village. One does not have to conduct any interviews using questionnaires or schedules. According to Gibbons, the material of the roof is a simple but powerful indicator of poverty in most countries of Asia. The poor in those countries live in houses having thatched roofs or roofs made out of woven bamboo or twigs, or plastic sheets that have holes, with the roofs leaking and creating health problems. Nobody wants to live in such houses unless one has to. So the people living in such houses are really very poor. If we combine this with the small size of the houses and the very simple building materials, such as mud, jute sticks, and such other things, then we are very close to identifying most of the very poor. Gibbons admits two limitations of this index. First, some poor people live in bigger and better houses because they inherited those houses, but now they no longer have any income. Second, in many countries (including India), the government provides reasonably good houses to the poor free of cost. So, in those areas, this index cannot identify the poor. To overcome these and other similar limitations, there is an appeal procedure. The poor people living in good houses could appeal to the field assistant and convince him/her that they are not rich. A senior officer could later interview such people and take a final decision in the matter. In such cases, use of the Participatory Rural Appraisal (PRA) method of wealth ranking has been found to be useful. In the PRA method, all the villagers are brought together to find out who are the very poor, poor, not so poor and not poor at all. The two methods, Housing Index and PRA, were found to be comparable in terms of cost effectiveness and the time taken. They could both be used by governmental and non-governmental organisations (NGOs) engaged in rural development, for identifying the poor for targeting their projects. The Housing Index has a serious limitation in the sense that it cannot be used for making international and even intra-national comparisons, when the type of houses varies widely from country to country, or from state to state within the country. But the primary purpose of this index is to identify the poor in a particular area, for giving some benefits or services to them. For this purpose, the index seems alright. Another limitation is that there is no way to combine the three components into a single index. Hence, the name Housing Index is misleading.

The Human Poverty Index (HPI)

The *Human Development Report 1997* (UNDP 1997) presents an HPI and ranks 78 poor countries using it. The report asserts that poverty is multidimensional, and poverty measures based on the income criterion do not capture deprivation of many kinds.

The HPI is based on the following three different types of deprivation (UNDP 1997: 17–23):

1. Survival deprivation, as measured by the percentage of people (in a given country) not expected to survive to age 40 years (P_1).
2. Deprivation in education and knowledge, as measured by the adult literacy rate (P_2).
3. Deprivation in economic provisioning (P_3), which is computed as the mean of three variables: population without access to safe water (P_{31}), population without access to health services (P_{32}), and underweight children under the age of five years (P_{33})—all three expressed in percentages.

The HPI is then obtained as the cube root of the average of the cubes of the three components of deprivation. This is a 'power mean' of order three. The power mean of order one is the simple mean, the average of the values.

Out of the 78 developing countries, Trinidad and Tobago had the lowest HPI at 4.1, and Niger had the highest at 66.0. India's HPI was 36.7 and its rank was 47.

The report says that the HPI can be used in at least three ways: as a tool of advocacy; as a planning tool for identifying areas of concentrated poverty within a country; and as a research tool. For example, the HPI can help summarise the extent of poverty along several dimensions, the distance to go and the progress made.

This index has some drawbacks and, therefore, is not yet acceptable to scholars and policy makers (Krishnaji 1997: 2202–05). The HPI does not include certain critical dimensions of human poverty, such as low incomes, lack of political freedom, inability to participate in decision-making, lack of personal security and threats to sustainability and inter-generational equity. In addition, the quality and reliability of data used for computing the HPI are also questionable in many cases.

MAIN POINTS

1. Measurement of the level and pace of rural development is useful for a number of purposes, such as the determination of the extent of economic and social well-being of the rural people, serving as a benchmark for future planning, facilitating the monitoring, evaluation and control of ongoing programmes, and spatial and temporal comparisons of development.
2. To be meaningful, measures of rural development must be consistent with the objectives of rural development. A measure should provide, at the minimum, an indication of such commonly accepted objectives of development as per capita availability of life sustaining goods or per capita income in rural areas as well as some idea of the distribution of income, assets and other means of socio-economic welfare.
3. There is no universally acceptable measure of rural development that captures its multi-faceted nature. The choice of measure depends upon the purpose of measurement and the availability of requisite data/information. Commonly used measures

of rural development can be categorised into two classes, namely, measures of level of rural development and measures of distribution of rural development.

4. Some of measures of level of rural development include per capita real gross national income (GNP), per capita consumption expenditure, per capita public expenditure on community facilities and services, the Physical Quality of Life Index (PQLI), composite index of rural development and the Human Development Index (HDI).
5. Of all the measures of level, the composite index of rural development and the HDI, when computed separately for rural population, could be the most appropriate indicators of rural development.
6. The Lorenz Curve and the Gini Concentration Ratio (GCR) are two of the most popular measures of income distribution. They could also be used for measuring the distribution of benefits from rural development programmes.
7. The Head Count (HC) ratio or index, the Poverty Gap (PG) index, the Squared Poverty Gap (SPG) index, Sen's index and the Human Poverty Index (HPI) are some of the commonly used indicators of rural poverty or lack of rural development. Estimation of poverty is beset with many conceptual, methodological and empirical problems including the lack of consensus about the definition of poverty, procedure of determination of poverty line and difficulty in gathering reliable data on income of rural households.
8. Some of the simple measures of rural development could be constructed in the form of questions like these: (a) Has the number of rural people below the absolute poverty line been declining over time? (b) Has the degree of income inequality in rural areas been declining over time? (c) Has the level of rural unemployment been declining over time? Answers to these questions would indicate whether a particular area or a country is developing or not.

NOTES

1. http://hdrstat.undp.org/country_fact_sheetscty_fs_IND.html. Accessed in March 2008.
2. The Working Group comprised Prof. D. R. Gadgil, Dr B. N. Ganguli, Dr P. S. Lokanathan, Mr M. R. Masani, Mr Ashok Mehta, Mr Shriman Narayan, Mr Pitamber Pant, Dr V. K. R. V. Rao and Mr Anna Saheb Sahasrabudhe.

QUESTIONS FOR DISCUSSION

- 3.1. Why do we need to measure rural development?
- 3.2. What are the problems in measuring rural development?
- 3.3. Which is the most appropriate measure of development and why?
- 3.4. In India, the per capita income in Punjab is higher than that in Kerala. Does this imply that the level of overall development or quality of life in Punjab is better than in Kerala? Yes/No. If yes, why; and if no, why not?

- 3.5. Which one of the following three alternative states of an economy is better and why?
- (i) Increasing per capita income at a faster rate associated with increasing inequality in income distribution
 - (ii) Increasing per capita income at a slower rate associated with decreasing inequality in income distribution
 - (iii) No change in per capita income associated with decreasing inequality in income distribution
- 3.6. Write a critique of the Human Development Index (HDI) as a measure of development.
- 3.7. What are the main problems in estimating rural poverty and how they could be minimised?
- 3.8. What are the advantages and limitations of Wealth Ranking, done using the technique of Participatory Rural Appraisal (PRA) as compared to conventional sample survey methods?

4

Some Paradigms of Rural Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- list a few major characteristics of the Modernisation Theory of development;
- illustrate the genesis of the Dependency Theory of the Marxist School and its relevance in India's context;
- compare and contrast the Rosenstein-Rodan's Theory of the 'Big Push' and the Leibenstein's 'Critical Minimum Effort Thesis' and determine which one is more relevant to India;
- critically examine the main assumptions of the Lewis' Model of Economic Development and their validity under present Indian conditions;
- appraise the Gunnar Myrdal's Thesis of 'Spread and Backwash' effects in the present context of India;
- describe the salient features of the Human Capital Model of Development and its relevance to India vis-à-vis the Gandhian Model of Rural Development and
- illustrate the basic concepts of 'dualism' and 'need for achievement', and their role in development.

INTRODUCTION

There are several paradigms or models of development in vogue at present and also many perspectives or viewpoints. A theory is expected to perform two major functions, namely, explanation and prediction, of a phenomenon. There is no universally acceptable model or theory of rural development, which can explain the existing phenomenon of rural development and predict its future course. What we have is a set of hypotheses and propositions that constitute higher level generalisations in the field of development. To the extent that rural development is a subset of development, the hypotheses of development apply to rural development as well. Many such hypotheses emphasise both economic and non-economic determinants of development, that is, they are quite comprehensive. Another characteristic of some of the hypotheses propounded by development theorists is that they are not fully operational, in the sense that it is very difficult to test them, that is, they are refractory. This chapter is devoted to a critical review of some of the contemporary paradigms of development and examines their relevance to rural development in the Indian context.

We begin with an examination of what the great thinkers of the past, particularly the Classical economists, contributed to the subject. We can, then, in the light of subsequent experience, determine in what respects they were right or wrong. In this manner, we can free ourselves (at least partially), from the confines of our own times, and can better equip ourselves for an objective analysis of the complex process of development.

The economists of the late eighteenth and early nineteenth centuries were primarily concerned with the conditions for economic growth. This was the period of the Industrial Revolution in Europe. The Classical economists—including Adam Smith, David Ricardo, Thomas Robert Malthus, John Stuart Mill and Karl Marx—lived through the period of take-off into sustained growth. The observations of these economists regarding the nature and causes of economic growth are, therefore, of considerable interest. We shall now present some basic ideas of the Classical school of thought, which may still be relevant. An interesting element of the arguments of the Classical economists was the concept of circularity that characterised the interrelationship between technology, investment and profit. The circularity was inherent in their assertion that the level of technology depends on the level of investment, investment depends on profits, and profits depend partly on the level of technology. This circularity was no accident or oversight. It was precisely what the Classicists wished to stress, that is, in economic development, nothing succeeds like success and nothing fails like failure. In the circular argument, we already have a clue to the difference in the performance of developed and developing countries.

The Classical economists did not focus their attention on development or rural development *per se*. They perhaps assumed that economic growth would naturally lead to development. It was towards the end of World War II around 1945 that development became an important field of study and attracted several scholars. Most of the initial writings on the subject dwelt on explaining the meaning of development, identifying factors affecting development and exploring interrelationships among the factors. Two distinct schools of thought emerged in the 1950s, namely, the Capitalist School

and the Marxist School; and two distinct theories corresponding to them, namely, the 'Modernisation Theory' of the Capitalist School and the 'Dependency Theory' of the Marxist School.

THE MODERNISATION THEORY

The dominant arguments of the Capitalist School are embodied in what is known as the Modernisation Theory or the 'Free World' model of development. The Modernisation Theory was the justification for the US hegemony in the context of the Cold War. Scholars who contributed to the growth and development of this theory comprised economists, sociologists, historians and anthropologists, and the determinants of development identified by them included both economic and non-economic factors. The essence of the theory was the transfer of Western technology and rationality, without changing class structure as a means of development, and removal of all social and ideological obstacles to such a process (Alavi and Shanin 1982: 2).

The Modernisation Theory was based on several assumptions, some of which are briefly stated here (Barnett 1988: 26; McKay 1990: 55):

1. Application of Western science and technology in order to increase production is essential for achieving development.
2. The process of development can be delineated into a series of stages, and all societies pass through those stages.
3. In the process of development, traditional social and political institutions are replaced by modern ones.
4. Traditional feudal forms of political power will be replaced by democratic forms of governance.

In a nutshell, the Modernisation Theory presented the 'American way of life' as the epitome of modernity. It envisages that development can be achieved only through industrialisation and urbanisation, along with technological transformation of agriculture—an insight validated by the experience of the newly industrialised countries of East Asia and Southeast Asia.

In the context of rural development, the Modernisation Theory offers quite a few useful insights, such as the inevitability of the use of modern technology for increasing agricultural production and the need for replacing traditional feudal institutions by new democratic ones for a shift towards greater scientific temper, and secular values and norms. However, the theory has lost much of its appeal due to its failure to predict and explain many economic phenomena, such as the faltering of the post-World War II boom in the 1960s, worldwide depression in the 1970s and the shift in the terms of international trade in the favour of developed countries. The theory also did not foresee the adverse environmental impacts of the capitalist/free market model of development and its unsustainability. In the face of these weaknesses and criticisms, the theory has

taken a few new directions, such as International Keynesianism, with its emphasis on the establishment of a New International Economic Order and the Guarantee of Basic Needs and Structural Adjustments Programmes. However, these new initiatives do not directly address the problems of rural development and, to that extent, are not relevant.

The financial (currency and stock market) turmoil in the East Asian countries has proved that the free market economy model, or the capitalist path, cannot guarantee stable and sustainable economic development characterised by fast improving living standards. From Japan and South Korea to Malaysia and Indonesia, mounting bankruptcies, growing unemployment and rising inflation, had engendered not only the loss of economic self-confidence, but also threatened the region's political and military stability.

There is yet another reason for the failure of the Modernisation Theory to be relevant in the context of developing countries like India, and that is the non-existence or ineffective implementation of rules and controls aimed at preventing private companies or groups from dominating their domestic markets. In the free market oriented Western democracies, such rules and controls are effectively implemented and, hence, they tend to even out the distribution of income and wealth. In the absence of strict control and regulation of the activities of private enterprises in developing countries, including India, not all the intended benefits from free markets accrue to society.

THE DEPENDENCY THEORY OF THE MARXIST SCHOOL

The growing disenchantment with the Modernisation Theory, owing to its failure to explain growing inequalities, poverty, violence and military coups in the newly independent nations in Africa and Asia, forced development scholars to ask new questions and seek new answers, using an alternative paradigm. The intellectual foundation of the new paradigm was rooted in the ideas of Karl Marx, Friedrich Engels and other Marxist thinkers. Marx (1818–83) and Engels (1820–1895) were the contemporaries of the proponents of the Modernisation Theory, notably Emile Durkheim (1858–1917) and Max Weber (1864–1924). Marx and Engels believed that the process of social change was not gradual and evolutionary, as assumed by the Modernisation Theory. Instead, it was characterised by conflict of interests between classes in society, or in other words, class struggle. The Marxists saw class struggle as the engine of social change and development.

The Marxists argued that imperialism, rather than being a benign political outgrowth of European civilisation (as argued by the Modernisation Theorists), was an exploitative system of economic, social and political relations. The system changed the colonised nations into sources of cheap inputs to production in the capitalist nations, as well as markets for their products. This arrangement always worked to the advantage of the imperial power. Such a view of the dynamics at work in the capitalist system meant a complete reversal of the logic of modernisation from the promise of development to impoverishment. This was the fundamental argument of the Marxist School of thought, which came to be known as the Dependency Theory.

The initial support for the Dependency Theory came from Latin America, particularly from the work of Raul Prebisch and his associates at the Economic Commission for Latin America (ECLA). However, the chief spokesman for the theory was Andre Gunder Frank, who dismissed the Modernisation Theory as useless from a policy perspective. Frank asserted that the relation between rich and poor nations was not only non-beneficial to the latter, but also positively destructive, hindering and distorting their development. In his view, development and underdevelopment were both results of interactions between societies. He drew up the detailed historical case studies of Chile and Brazil to support his assertions. The following are the main arguments of the Dependency Theory (McKay 1990: 55–56):

1. The developed countries (the First World) could not have achieved the level of development that they have, without the systematic exploitation of the developing countries (the Third World).
2. That the process of development passes through a series of stages is an illusion. Developing countries cannot attain development following the path adopted by developed countries, so long as the exploitative world system exists.
3. Countries that are now poor were not so to begin with; rather they have been *forced* into the stage of underdevelopment by a global system of capitalist exploitation.
4. Developing countries can develop only by snapping their links with the developed countries.

The Dependency Theory was very popular in the 1970s, as it provided a plausible explanation to the perpetuation of the problems of poverty and stagnation in developing countries, despite concerted efforts at solving them. Development scholars realised the need for critically examining the existing relations between rich and poor countries to find out whether they were benign and beneficial to the poor nations, or harmful. However, in the 1980s, the theory lost much of its initial popularity, and was criticised as being ‘too deterministic’ and ‘too simplistic’. The basic argument of the theory that ‘underdevelopment’ in developing countries (the periphery) is the result of ‘development’ in developed countries (the core/centre), was falsified by the experience of the East Asian tigers. These tigers were initially dependent on the developed countries (that is, they were on the periphery), but in course of time they became highly developed and competitive, that is, they moved from the periphery to the core. Besides, the theory did not consider the role of several internal factors, such as excessive population growth, underdeveloped human resources, shortage of natural resources and class struggle, in explaining the existence of ‘underdevelopment’.

In the context of rural development, we could say that the theory provides a useful caveat that while identifying the determinants of rural development, we should critically examine various inter-sectoral linkages (both backward and forward) and interactions, and determine whether they are beneficial to rural people or not. If not, necessary policy measures should be taken to make the linkages and interactions beneficial to the rural people. A similar exercise needs to be done at the national level to find out which international economic and political relationships are beneficial, and which are harmful to economic development in general, and rural development in particular.

ROSENSTEIN-RODAN'S THEORY OF THE 'BIG PUSH'

According to this theory, there is a minimum level of resources that must be devoted to a development programme, if it is to have any chance of success. Launching a country into self-sustaining growth is a little like getting an aeroplane off the ground. There is a critical ground speed which must be passed before the craft can become airborne (MIT 1957: 70). The essence of this theory is: Proceeding 'bit by bit' will not add up in its effects to the sum total of the single bits. A minimum quantum of investment is a necessary—though not sufficient—condition for success.

Rosenstein-Rodan (1970) identifies three different kinds of indivisibilities, which may be considered the main obstacles to the development of developing countries. These are the indivisibility in the supply of social overhead capital (lumpiness of capital), the indivisibility of demand (complementarity of demand) and the indivisibility (kink) in the supply of savings. He argues that a big push in terms of a high quantum of investment is required to scale the economic obstacles to development created by these three kinds of indivisibilities, and the external economies to which they give rise. This implies that the development process is a series of discontinuous 'jumps', and each jump requires a 'big push'. Besides, there may finally be a phenomenon of indivisibility in the vigour and drive required for successful development policy. Isolated and small efforts may not add up to a sufficient impact on growth. An atmosphere of development may only arise after a critical minimum level of investment has been reached.

Rosenstein-Rodan does not offer any specific and practicable suggestions to overcome the adverse effects of the indivisibilities, but he suggests that international trade may reduce the size of the minimum push required to obviate the effect of indivisibility (complementarity) of demand. Mobilisation of sufficient resources to provide the required 'big push' continues to be the biggest hurdle, which developing countries cannot overcome on their own. Rosenstein-Rodan recommends that a trust—with capital from outside—be established to plan and finance investment for the entire area simultaneously. A major criticism of this theory is that the resources required to give the 'big push' are of such a high order, that a developing country like India cannot afford them. In fact, a country capable of mobilising the requisite quantum of resources would not be a poor country. However, conceptually, this paradigm continues to be appealing to planners and scholars.

LEIBENSTEIN'S 'CRITICAL MINIMUM EFFORT THESIS'

The central idea of Harvey Leibenstein's (1957) thesis is that in order to attain sustained secular growth, it is essential that the initial stimulant to development be of a certain critical minimum size. According to Leibenstein, economic backwardness is characterised by a set of interrelated factors, which have a certain degree of stability at their small equilibrium values. The actual values are different from the equilibrium values, because the economy is always being subjected to stimulants or shocks. The stimulants have a tendency to raise per capita incomes above the equilibrium level. But in backward

economies, long-term economic development does not take place because the magnitude of stimulants is too small. In other words, efforts to escape from economic backwardness, be they spontaneous or forced, are below the critical minimum which is needed for sustained growth.

For small values of the stimulant, the generated income-depressing factors are, in the long run, more significant than the induced income-raising forces, but the reverse is the case with high values of the stimulant. Population growth may be cited as an example of this phenomenon. A small increase in capital through raising incomes will stimulate more than an equivalent increase in population, and a proportional decline in per capita income. There is, of course, a biologically determined maximum rate of population growth between 3 per cent and 4 per cent. As such, persistent capital accumulation above a certain minimum rate would eventually permit development. The need for a minimum effort arises to overcome internal and external diseconomies of scale, to overcome income-depressing obstacles, which may be generated by the stimulants to growth, and to generate sufficient momentum in the system, so that the factors that stimulate growth continue to play their part.

Leibenstein's thesis is more realistic than Rosenstein-Rodan's 'big push' theory. Giving a big push to the programme of industrialisation all at once is not practicable in underdeveloped countries, while the critical minimum effort can be properly timed and broken up into a series of smaller efforts to put the economy on the path of sustained development. This theory is also consistent with the concept of decentralised democratic planning, to which India, and most developing countries, are wedded. Therefore, this paradigm provides good clues as to the quantum of investment that is absolutely essential to make a programme take-off.

LEWIS' MODEL OF ECONOMIC DEVELOPMENT

W. Arthur Lewis' (1954: 139–92) model is based on the fact that in many developing countries, there exist large reservoirs of labour whose marginal productivity is negligible, zero or even negative. This labour is available in unlimited quantities at a wage equal to the subsistence level of living, plus a margin sufficient to overcome the friction of moving from the 'subsistence sector' to the 'capitalist sector', which may be called 'subsistence-plus' wage. As the supply of labour is unlimited, new industries can be set up and the existing ones can be expanded without limit, at the ruling wage rate. The capitalist sector also needs skilled workers. But Lewis maintains that skilled labour is only a temporary bottleneck and can be removed by providing training facilities to unskilled workers.

Since the marginal productivity of labour in the capitalist sector is higher than the ruling wage rate, there results a capitalist surplus. This surplus is used for capital formation, which makes possible employment of more people from the subsistence sector. The increase in investment by the capitalists raises the marginal productivity of labour, which induces capitalist employers to increase their labour force till the marginal productivity of labour falls to a level equivalent to the ruling wage rate. This process goes on till the

capital-labour ratio rises to the point where the supply of labour becomes inelastic. Some critics have pointed out that Lewis' optimism concerning development by absorption of disguised unemployment from agriculture is unfounded, because it is not possible to transfer a large number of workers permanently and on a full-time basis from agriculture to industry, without a drop in the agricultural output, that is, the marginal productivity of the labour in agriculture is not zero.

Technical progress in the capitalist sector may also increase the share of profits in the national income as long as there is surplus labour. The share of profits increases, both because the profit ratio within a capitalist sector of a given size may increase through innovation, and because the capitalist sector itself grows. According to Lewis, this is the major way in which the rise in capital formation from 4 per cent or 5 per cent to about 12 per cent to 15 per cent of national income takes place.

Capital is created not only out of profits but also out of bank credit. In a developing country characterised by unemployed resources and scarcity of capital, credit creation will expand output and employment in the same way as profits do. Credit-financed capital formation, however, results in a temporary rise in prices. The inflationary process comes to an end when voluntary savings from increased profits are large enough to finance new investment, without resort to bank credit.

According to Lewis, the process of growth cannot continue indefinitely and must come to an end on account of a number of factors. When this happens, the process of capital formation can still be kept going by stimulating immigration or by encouraging export of capital to countries which possess abundant supplies of labour at the subsistence wage rate. Since the former measure is strongly opposed by trade unions, the latter seems more practicable.

Lewis' model seems to provide a good framework to understand the process of economic development in labour-surplus developing countries like India. Its basic premise is that labour productivity in agriculture must increase substantially in order to generate surplus in the form of food to be used for development of the non-farm sector, and to release the surplus labour from agriculture for meeting the growing needs of the non-farm sector. However, the relevance of the model is constrained by a number of factors. First, labour unions may push the wage rate up as labour productivity increases, and keep the rate of profit and rate of capital formation lower than expected. Second, the capitalist employers may use the surplus for speculative or non-productive purposes instead of ploughing it back for development purposes. This is, in fact, what has been happening these days in India and other developing countries. Third, to meet their rising expectations, rural people may consume more and save less than predicted by the model, and thereby dampen the pace of development.

The Lewis model does not present a satisfactory analysis of the agricultural sector, in the sense that it fails to consider the possibility of a change of productivity in agriculture. Building upon the Lewis model, Ranis and Fei (1970) propounded a theory of economic growth, by first analysing the role of the 'neglected' agricultural sector in a static sense, and then generalising the 'static' analysis by introducing the possibility of an increase in agricultural productivity (Higgins 1966: Chapter 5).

Cochrane (1969: Chapter 11) critically reviews the models of Lewis and of Ranis and Fei, and concludes that the creation of investment capital needed to employ the surplus

workers released from agriculture is the critical missing element in these models. He then suggests that the resources to finance the expensive process of agricultural modernisation can be obtained in any one or in a combination of three basic ways:

1. By squeezing more agricultural surplus.
2. By slowing down the rate of investment in the non-farm sector and in basic infrastructure.
3. By obtaining foreign loans and grants.

Of these three sources, foreign loans and grants are, he asserts, the most advantageous or least expensive. He further states that the growth rate of agricultural production in a developing country in the early stages must be raised high enough to meet its expanding food requirements. For this to happen, he argues, the pull exerted on agriculture through higher market prices will not be enough; agriculture must be pushed, and pushed hard, by a strategy emphasising the use of modern technology and supporting infrastructure and services.

In my opinion, Cochrane's model is a good exposition of the process of agricultural development, and of the possibilities and limitations of agricultural development as a catalyst for overall national development. I would like to add two elements to Cochrane's model, and these are (a) population control measures; and (b) the international economic and political environment. No strategy of agricultural and national development would ever succeed in the absence of appropriate population control measures, and a congenial international economic and political environment. Whereas a developing country can always do something to control its exploding population, the creation of a suitable international environment is the responsibility of the world community and its organisations.

GUNNAR MYRDAL'S THESIS OF 'SPREAD AND BACKWASH' EFFECTS

Gunnar Myrdal (1957) highlights low levels of income in most of the non-Soviet countries in the world, and international disparities in income, wealth and investment. Myrdal finds the theoretical approach (automatic self-stabilisation) inadequate to grapple with the problems of inequality. In his opinion, in a normal case, a change does not call forth countervailing changes, but, instead, supporting changes which move the system in the same direction as the first change, but much faster—the principle of circular and cumulative causation. As a result of such circular causation, a social process tends to move faster. A social process can be stopped by introducing new exogenous changes in the system. He elaborates this with an example of the African-American problem in the United States of America (USA). Two factors, namely, white prejudices causing discrimination against the African-Americans and their 'low plane of living' are interrelated. Their low standard of living is kept suppressed by discrimination by the whites. On the other hand, the African-Americans' poverty, ignorance, superstition, slum dwellings, health

deficiencies and their supposedly unclean appearance, bad odour, disorderly conduct, unstable family relations and criminality, stimulate and feed the antipathy of the whites for them. Both these factors mutually 'cause' each other.

He also emphasises the role of non-economic factors in development, and highlights the backwash effects of growth brought out by the free play of market forces. The clustering of labour, capital, goods and services in certain localities and regions leave the remaining areas, mostly rural, more or less in the backwaters and accentuate regional inequality. Concentration of firms, capital and talented individuals in certain localities (growth points) at the expense of surrounding areas (the backwash) lowers the level of economic development below what it would have been, if growth points had never emerged.

Against the backwash effects there are, however, certain centrifugal 'spread effects' of expansionary momentum from the centres of economic expansion to other regions. Empirical evidence shows that backwash effects are neutralised by spread effects only at a high level of development. This is one of the reasons why rapid sustained progress becomes an almost automatic process once a country has reached a high level of development. At low levels of development, the spread effects are either very weak, or are just strong enough to cancel the backwash effects, and the result in both cases is poverty and stagnation.

Similarly, at the international level, trade, capital movement and migration have strong backwash effects on the developing countries. Examples can easily be cited of developing countries whose cultures have been impoverished as a result of the establishment of trading contacts with the outside world. But, generally speaking, the concepts of 'backwash effects' and 'spread effects' are useful, and need to be considered while planning for rural development.

THE HUMAN CAPITAL MODEL OF DEVELOPMENT

This model emphasises the importance of human capital investment in the process of economic and social development. By human capital, we mean acquired mental and physical ability through education, training, health care and pursuit of some spiritual methods like yoga or meditation. The acquisition of human capital is largely through the investment of human effort and money. The simplest and most important of this type of model is a schooling model, which relates economic development to schooling. The classical and neoclassical economists did not explicitly include the quality of human resources in their theoretical frameworks; labour was taken to include both physical and mental effort (Alex 1983: 3–12). It was Theodore Schultz (1964) who elaborated the concept of human capital and explicitly considered the investment in human capital as an important determinant of economic development. Subsequently, quite a few other scholars got interested in the economics of human capital, especially the economics of education, and a large number of studies were conducted on the subject. The model considers the totality of human potential and emphasises the need to harness it for

the good of the people. It respects people's culture and religion, and social values and structures. It is more applicable to countries like India than any other model. The human capital approach to rural development is based on the following three assumptions, which have been ignored in the classical theory of development:

1. Human physical and mental capabilities are partly inherited and partly acquired, and they vary from individual to individual, that is, the classical assumption of a homogeneous labour force does not hold.
2. Human capital directly contributes to development through its positive effect on productivity and through reduction in resistance to the diffusion of new technologies in the economy, especially in the rural sector.
3. Human resources are inexhaustible and are available in plenty in all developing countries of the world, including India. If properly developed and utilised, human resources can contribute significantly to development.

Thus, this model shifts the emphasis from physical capital formation to human capital formation, and from industrial development to rural development, as a basis for overall development. This model seems most appropriate for labour-surplus developing countries like India, where a lot of underdeveloped human resources having high potential for development exist. Besides, human resources are renewable and, hence, inexhaustible. Therefore, human capital can be substituted for exhaustible non-renewable physical capital in the process of development, and thus relax the constraint on development imposed by the inadequacy of physical capital to a large extent. As a matter of fact, strategies for development of the tertiary (service) sector, which is now the fastest growing sector in India, requires skilled, and experienced and innovative human resources for their success. And this is the path that India should choose to bring about overall sustainable development. Human resource development through nutrition, health care, appropriate education, training and empowerment deserves the highest priority now in terms of allocation of resources for the purpose.

THE GANDHIAN MODEL OF RURAL DEVELOPMENT

Mohandas Karamchand Gandhi, popularly known as Mahatma Gandhi, played the leading role in securing for India political independence from the British Raj, through organising and mobilising Indian people from all walks of life in a peaceful and non-violent manner. He is, therefore, rightly called the 'The Father of the Nation'. Gandhiji's approach to India's rural development was holistic and people-centred. It was rooted in his conviction in the tenets of truth, non-violence and the goodness of human beings. Influenced as he was by Tolstoy, Ruskin and the teachings of *The Gita*, he placed more emphasis on moral and spiritual values than economic motives as a means of overall development. Some of the salient features of the Gandhian model are presented in the following pages.

Values and Premises Underlying the Model

The Gandhian model of rural development is based on certain values and premises (Box 4.1).

Box 4.1 Basic Values and Premises underlying the Gandhian Model of Development

1. Real India is found not in its cities, but in its villages.
2. The revival of villages is possible only when the villagers are exploited no more. Exploitation of villagers by city dwellers was 'violence' in Gandhiji's opinion.
3. Simple living and high thinking, implying voluntary reduction of materialistic wants, and pursuit of moral and spiritual principles of life.
4. Dignity of labour: everyone must earn his bread by physical labour and one who labours must necessarily get his subsistence.
5. Preference to the use of indigenous (*swadeshi*) products, services and institutions.
6. Balance between the ends and the means: Gandhiji believed that non-violence and truth could not be sustained unless a balance between the ends and the means was maintained.

Source: Singh 1999: 86.

Principal Components of the Model

The principal components of the Gandhian Model are as follows.

Self-sufficient Village Economy

Gandhiji's concept of self-sufficiency was not a narrow one nor was it that of selfishness or arrogance. He realised the need for villagers to get those things from outside the village, which they could not produce in the village.

Decentralisation

Gandhiji believed that human happiness with mental and moral development should be the supreme goal of society, and that this goal should be achieved through decentralisation of political and economic powers.

Khadi and Village Industries

For Gandhiji, *khadi* was an instrument of decentralisation of production and distribution of the basic necessities of life, and of ensuring 'work to all'. He also favoured the promotion of other village industries, such as hand grinding, hand pounding, soap making, paper

making, metal making, oilseed crushing, tanning, and so on. He advocated the use of manual labour and opposed the introduction of machines, fearing that they would displace human labour. But he appreciated the role of new technologies if they were appropriate, indigenous and did not affect the level of employment and standard of living.

Implementing Strategy

Gandhiji prescribed the following institutional structure and instruments for implementing his strategy, namely, panchayati raj, cooperatives, trusteeship, and *Nai Taleem* (New Education). A brief description of each of these instruments follows.

Panchayati Raj

Gandhiji envisaged that each village in India would be a republic, where the village panchayat would have the full power of managing its affairs, including defence. He expected the panchayat to perform the legislative, executive and judicial functions necessary for a smooth functioning of the village economy. Various developmental activities such as education, health and sanitation would also be taken up by the village panchayat. It is good, and in conformity with Gandhiji's views, that India now has made panchayati raj institutions statutory bodies by passing the 73rd and 74th (Constitution) Amendment Acts. It is hoped that Gandhiji's dream of local self-governance through village panchayats would now be fulfilled.

Cooperatives

Gandhiji saw a great virtue in cooperation as an instrument of rural development. He assigned specific roles to cooperatives in the field of agriculture, commending the promotion of cooperative farming and thereby preventing further fragmentation of landholdings. He also advocated the establishment of other types of cooperatives, such as credit cooperatives, weavers and spinners cooperatives, and dairy cooperatives. In this matter also, we have perhaps lived up to the expectations of Gandhiji. India now has the world's largest network of cooperatives, which occupy an important place in India's rural economy. The Operation Flood (OF) programme is a living example of what cooperatives can do to promote agricultural and rural development in India. There is, therefore, the need for us to adopt the cooperative path to rural development, as advocated by Gandhiji.

Trusteeship

Gandhiji considered trusteeship as an instrument of transforming the capitalist order of society into an egalitarian one. In his opinion, all the land belonged to God, that is, the

community and, therefore, he advocated that land and other natural resources should be collectively owned by—and operated for—the welfare of the community. Landlords should merely be trustees of land and other natural resources and capital assets. He saw in the principle of trusteeship a non-violent method of persuading landowners to donate their land voluntarily for community welfare purposes, and of avoiding class conflicts.

Nai Taleem

Gandhiji had no faith in modern education, which emphasised only literacy and acquisition of information. In his opinion, modern education was ‘debauchery of the mind’. Hence, he developed a new system of appropriate education and training which he called *Nai Taleem*. He believed that *Nai Taleem* would help develop the full potential of children and adults, through full development of their bodies, minds and spirits. He wanted to see *Nai Taleem* to be self-supporting and practice oriented. It is unfortunate that India has not yet geared its education system to the needs of the country, and that is why its human resources remain underdeveloped and less productive as compared to other countries that have given the highest priority to education and training. However, of late, ‘Universalisation of Elementary Education’ and ‘Total Literacy Programmes’ have received higher priority than in the past, with a view to achieve the national objective of ‘Education for All’. Similarly, vocational education at the post-high school (10th class) level is now being considered as an alternative to the present traditional general education. This shows that we have now realised the relevance of Gandhiji’s *Nai Taleem*.

The Gandhian model, like any other development model, has both its proponents and opponents. The proponents argue that under the prevailing socio-cultural and economic conditions in India, the Gandhian model is still relevant, and is the only alternative available for bringing about equitable and sustainable rural development. They assert that panchayati raj institutions and cooperatives are still as relevant as when they were in Gandhiji’s days, and that the role of appropriate education cannot be overemphasised even in the present Indian context. The critics argue that Gandhiji’s ideals of swadeshi, voluntary curtailment of one’s wants, trusteeship, self-sufficient villages, and the use of manual labour in preference to machines sound obsolete these days, particularly in the wake of India’s new economic policy characterised by privatisation, liberalisation and globalisation. As a matter of fact, by adopting an economic growth oriented development path and by following the Western model of industrialisation, both under the influence of Jawaharlal Nehru, India had abandoned the Gandhian model long ago, they assert further. To conclude, we could say that Gandhiji wanted India to travel east but India decided to travel west, and we know that ‘the twain never meet’. Now, we have gone probably too far in the wrong direction, and turning around and travelling eastward is perhaps not a feasible course of action. But, then, nothing is impossible, and if there is a will, there is a way.

DEVELOPMENT THEORIES FROM OTHER SOCIAL SCIENCES

Development is a complex process which is affected by both economic and non-economic factors. The importance of non-economic factors in development was duly recognised by the Classical school. John Stuart Mill thought that non-economic factors, like beliefs, habits of thought, customs and institutions, play an important role in economic development, and he attributed the backwardness of underdeveloped countries to the despotic and anti-progressive character of their customs, institutions and beliefs.

Boeke (1953) attempted to explain underdevelopment in terms of sociological dualism, which he defines as 'the clashing of an imported social system with an indigenous social system of another style.' On the basis of his analysis, largely based on the Indonesian experience, he concludes that the kindest thing the Western world can do for developing countries is to leave them alone; any effort to develop them along Western lines can only hasten their retrogression and decay. The acceptance of the dualism leads to two policy conclusions: (a) as a rule, one policy for the whole country is not possible; and (b) what is beneficial for one section of the society may be harmful for another. An appraisal of Boeke's theory would reveal that whereas there can be no question about the existence of dualism, its explanation lies not in the nature of society as Boeke perceives it, but in economic and technological terms. This is proved by the fact that not all efforts to promote development in the developing countries through technical and capital assistance from the West have been in vain.

For example, in India, a large part of the credit for bringing about the Green Revolution goes to the United States Agency for International Development (USAID) that helped India, both financially and technically, in setting up modern land-grant type state agricultural universities in the 1960s, and trained its agricultural scientists in American land-grant agricultural universities. Similarly, the OF programme that is credited with modernising India's dairy industry, also benefited a lot from food aid in the form of skimmed milk powder and butter oil, first from the World Food Programme of the Food and Agriculture Organisation (FAO), and then from the European Economic Community (EEC).

One may reject the theory of sociological dualism advanced by Boeke, and still consider sociological, cultural and psychological factors important in economic development. Indeed, one may say that all economists who have specialised in economic development recognise the importance of the interplay of these factors with economic factors. In the words of Meier and Baldwin (1957: 355), 'The psychological and sociological requirements for development are as important as the economic requirements. They deserve full consideration in their own right.' Relatively few economists, however, have had the courage to attempt a systematic theory of development which would incorporate strategic sociological, cultural and psychological factors. Outstanding among these few are David McClelland and Everett Hagen (Higgins 1966: Chapter 13).

McClelland's 'Need-for-Achievement Motivation' (N-Ach) theory seeks to establish a relationship between N-Ach and economic development. His theory rests on two propositions: (a) that group differences in the average level of certain motives, such as N-Ach, predict differences in the rate of economic growth; and (b) that certain motive

combinations predispose individuals to act like successful business entrepreneurs, who have played key roles in all previous economic development. On the basis of his studies and analyses, he concludes that if we are to promote economic growth, it is necessary to first change the values and motives of individuals. This, in his opinion, can be done by: (a) persuasion or education; (b) introducing changes in the social system; and (c) early character training. Of the three, the third is by all odds the one most likely to succeed. For, in this way, values can be in-built from the very beginning. Early character training can be imparted by a corps of specially qualified nursery and primary school teachers carefully selected for the purpose.

Thus, McClelland's analysis leads to the conclusion that a take-off into economic development requires a large number of individuals with the entrepreneurial motivation complex and particularly with high N-Ach, and for this a long period of time is required to establish psychological preconditions.

MAIN POINTS

1. There is no universally acceptable theory of rural development which can explain the existing phenomenon of rural development and predict its future course. What we have is a set of hypotheses and propositions that constitute higher level generalisations in the field of development. To the extent that rural development is a subset of development, hypotheses of development apply to rural development as well.
2. The classical economists did not focus their attention on development or rural development *per se*; they perhaps assumed that economic growth would naturally lead to development. An interesting element of the arguments of the Classical economists was the concept of circularity that characterised the interrelationship among technology, investment and profit. The circularity was inherent in their assertion that the level of technology depends on the level of investment, investment depends on profits, and profits depend partly on the level of technology.
3. The essence of the Modernisation Theory was the transfer of Western technology and rationality to less developed countries without changing their class structure as a means of development and removal of all social and ideological obstacles to such a process.
4. In a nutshell, the Modernisation Theory presented the 'American way of life' as the epitome of modernity. It envisaged that development can be achieved only through industrialisation and urbanisation along with technological transformation of agriculture. It offers quite a few useful insights, such as the inevitability of the use of modern technology for increasing agricultural production, and the need for replacing traditional feudal institutions by new democratic ones, for a shift towards greater scientific temper, and secular values and norms.
5. The intellectual foundation of the Dependency Theory of the Marxist School was rooted in the ideas of Karl Marx and Friedrich Engels, who believed that

the process of social change was not gradual and evolutionary as assumed by the Modernisation Theory. Instead, it was characterised by conflict of interests between classes in the society, or in other words, class struggle. The Marxists saw class struggle as the engine of social change and development.

6. The Dependency Theory was very popular in the 1970s, as it provided a plausible explanation to the perpetuation of the problems of poverty and stagnation in developing countries despite concerted efforts at solving them. The theory provides a useful caveat that while identifying the determinants of rural development, we should critically examine which international economic and political relationships are beneficial and which are harmful to economic development in general, and rural development in particular, and initiate policy measures to minimise the adverse ones.
7. Rosenstein-Rodan's Theory of the 'Big Push' maintained that there is a minimum level of resources that must be devoted to a development programme if it is to have any chance of success. Launching a country into self-sustaining growth is a little like getting an aeroplane off the ground. There is a critical ground speed which must be passed before the craft can become airborne. A major criticism of this theory is that the resources required to give the 'Big Push' are of such a high order, that a developing country like India cannot afford them.
8. The central idea of Harvey Leibenstein's 'Critical Minimum Effort Thesis' is that in order to attain sustained secular growth, it is essential that the initial stimulant to development is of a certain critical minimum size. Leibenstein's thesis is more realistic than Rosenstein-Rodan's Big Push theory in the sense that the critical minimum effort can be properly timed and broken up into a series of smaller efforts to put the economy on the path of sustained development. This theory is also consistent with the concept of decentralised democratic planning as practised in India.
9. W. Arthur Lewis' model of economic development with unlimited supplies of labour is based on the fact that in many developing countries, there exist large reservoirs of labour whose marginal productivity is negligible, zero or even negative. Since the marginal productivity of labour in the capitalist sector is higher than the ruling wage rate, there results a capitalist surplus, which can be used for capital formation which makes possible employment of more people from the subsistence sector and initiates the process of development. The model provides a good framework to understand the process of economic development in labour-surplus developing countries like India.
10. Gunnar Myrdal in his thesis of 'Spread and Backwash Effects' asserts that the clustering of labour, capital, goods and services in certain localities and regions leave the remaining areas, mostly rural, more or less in backwaters and accentuates regional inequality. Concentration of firms, capital and talented individuals in certain localities (growth points) at the expense of surrounding areas (backwash) lowers the level of economic development below what it would have been if growth points had never emerged. Against the backwash effects, there are, however, certain centrifugal 'spread effects' of expansionary momentum from the centres

of economic expansion to other regions. Empirical evidence shows that backwash effects are neutralised by spread effects only at a high level of development.

11. The Human Capital Model of Development emphasises the importance of human capital investment in the process of economic and social development. The human capital includes acquired mental and physical ability through education, training, health care and pursuit of some spiritual methods like yoga or meditation. The acquisition of human capital is largely through the investment of human effort and money. The simplest and most important of this type of model is a schooling model which relates economic development to schooling. This model is relevant to India and other developing countries.
12. The Gandhian Model is holistic and people-centred. It is rooted in Gandhi's conviction in the tenets of truth, non-violence and goodness of human beings. It places more emphasis on moral and spiritual values than economic motives as a means of overall development. The proponents of the Gandhian model argue that under the prevailing socio-cultural and economic conditions in India, the model is still relevant and is the only alternative available for bringing about equitable and sustainable rural development. The critics argue that Gandhiji's ideals of *swadeshi*, voluntary curtailment of one's wants, trusteeship, self-sufficient villages and use of manual labour in preference to machines are obsolete these days.
13. There are a few other models of development propounded by other social scientists. They include Boeke's explanation of underdevelopment in terms of sociological dualism which he defines as 'the clashing of an imported social system with an indigenous social system of another style' and McClelland's 'Need-for-Achievement Motivation' (N-Ach) theory. McClelland's analysis leads to the conclusion that a take-off into economic development requires a large number of individuals with the entrepreneurial motivational complex and particularly with a high N-Ach, and for this a long period is required to establish psychological preconditions. These Boeke's and McClelland's models are useful in providing insights into the role of non-economic factors in development.

QUESTIONS FOR DISCUSSION

- 4.1. Why is it difficult, if not impossible, to have a universally acceptable theory of 'development'?
- 4.2. Write a critique of the Modernisation Theory of Development in the India's current context.
- 4.3. Is the Dependency Theory relevant to India? Yes/No. If yes, why; if no, why not?
- 4.4. Compare and contrast the Rosenstein-Rodan's Theory of the 'Big Push' and Harvey Leibenstein's 'Critical Minimum Effort Thesis'. Which one is more applicable to India and why?

- 4.5. What are the limitations of Arthur Lewis' Model of Economic Development in India's context?
- 4.6. Illustrate with an example the 'Spread and Backwash effects' of development as articulated by Gunnar Myrdal in his thesis.
- 4.7. What are the common features of the Human Capital Model of Development and Gandhian Model of Development? Examine critically the relevance of Gandhian model in the current context of India.
- 4.8. What do you understand by the term 'sociological dualism'? How does its existence affect development?
- 4.9. Write a critique of the McClelland's 'Need-for-Achievement Motivation' (N-Ach) theory in the India's context.

5

Determinants of Rural Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- explain why 'changes in output' is considered as a proxy variable for 'development' and its limitations;
- illustrate the role of land and water resources in India's development in general and agricultural development in particular;
- identify the major attributes of human resources that significantly affect 'development';
- define various forms of capital and their role in 'development';
- illustrate the role of new agricultural technologies in agricultural development in India;
- identify various forms of organisations and examine their role in India's rural development and
- describe various conceptual and methodological problems in measuring and quantifying the relation between rural development and its determinants, and the lessons of a few empirical studies of the relationship.

INTRODUCTION

The factors affecting rural development favourably or adversely are so varied, and have combined over time in so many different ways, that it is very difficult to isolate a small number of crucial variables or determinants. There are many physical, technological, economic, socio-cultural, institutional, organisational and political factors that affect the level and pace of rural development. These factors operate at all levels: household, village, district, state, nation and the world as a whole. Depending upon how they are managed, these factors can have both favourable and adverse effects on development. For instance, if the human resources of a country are not properly developed by proper nutrition, health care, education and training, and are not productively utilised, these resources become liabilities and obstacles to development. But if they are properly developed and utilised, then they become great assets and major factors contributing to development. Knowledge about the nature and magnitude of the impact of various determinants on rural development is necessary for rural development managers to be able to use these factors to achieve their goals efficiently and effectively. This chapter is devoted to identifying the major determinants of rural development, and examining their role in promoting rural development.

Rural development is characterised by multiple goals, and as stated in Chapter 3, there is no single index or indicator which can adequately capture the multifaceted nature of rural development. At the same time, unless we can measure the phenomenon of rural development, we are unlikely to know much about the quantitative impact of the factors that influence it.

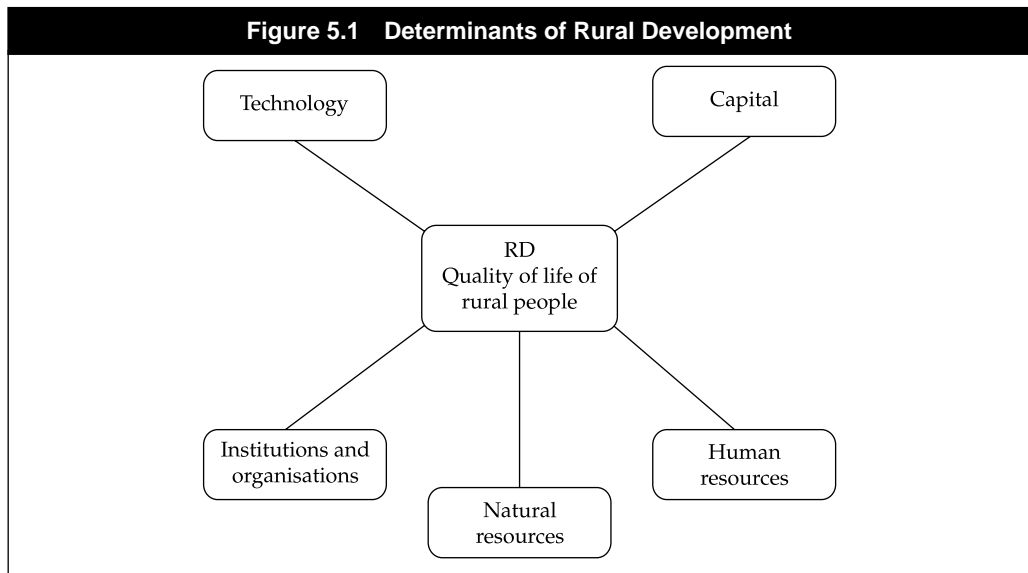
In the absence of a single index of rural development, we shall use change in output as its proxy measure, and discuss the role of various factors that appear to us, on an *a priori* basis, as important determinants of this measure. Let us assume that change in output is a function of changes in natural resources, employment, capital, technology and institutions and organisations.

This can be expressed in notational form as follows:

$$\Delta Y = f(\Delta R, \Delta N, \Delta K, \Delta T, \Delta O)$$

where Y = output, R = natural resources, N = employment, K = capital, T = technology, O = organisational and institutional framework and delta (Δ) means 'change in'.

This equation states that changes in output is a function of changes in those variables appearing on the right hand side of the equation, that is, natural resources, employment, capital, technology, and organisational and institutional framework (Figure 5.1). The variables might be called the 'instrument variables' of economic growth or change in output. Of course, it is not easy to determine the causal relationship between Y and these instrument variables. All change simultaneously, and the contribution of a single variable is difficult to isolate, but at least some statistical associations are often possible, and have been established by a number of economists.



Source: Author.

CHANGES IN OUTPUT

Measuring changes in output over time is much more complex than often thought. For this, we need a system of accounts that provide indicators of output change. Many indicators may be used, but they are all subject to certain limitations. Before proceeding with a discussion of specific indicators of output change, a few observations will be made about economic growth as a means of promoting overall development.

A growing economy is one of the goals of economic policy in practically all countries, rich and poor. In recent years, however, particularly in developed countries, this preoccupation with growth has been challenged. It is now pointed out that growth should not be considered as an end in itself, but only as a *means* of promoting development. In fact, it is now widely believed that economic growth produces undesirable as well as desirable consequences. It has been alleged that our preoccupation with producing bigger, better and faster objects to satisfy our insatiable appetites and whims is a kind of 'growthmania'. The implication is that we have been so concerned about increases in some indicators of income or product, that we have neglected some of the side effects of growth which are the causes of the deteriorating quality of life of people.

Before growth can be considered an end of social policy, it must be demonstrable that economic activity will enhance the level of well-being of at least some human beings. The national income accounts have been designed to provide indicators of aggregate output or, alternatively, on the other side of the accounts, aggregate income to owners of the factors of production. Some of these indicators are gross national product (GNP), net national product (NNP), national income, personal income and personal disposable income.

If we must have a single indicator which shows the growth that has occurred, that indicator must have a way of meaningfully aggregating physically unlike goods and services, such as wheat, milk, houses, clothes, steel, aeroplanes, banking and insurance. The national income indicators accomplish this by converting these physical units of output into monetary values by multiplying the physical units by market prices. The monetary values of output are thus comparable and additive.

This valuation procedure is open to one basic question. Do market prices used as weights accurately reflect the contributions of the respective units of output to aggregate income? The answer seems to be that if product and factor markets are perfectly competitive, and no externalities are present in either consumption or production of the commodities being priced, they do. If the demand for a product is less than perfectly elastic, however, the additions to income due to increase in the output of the product will be reflected by marginal revenue rather than by price, because as output expands, the price of all units sold will decline. Furthermore, if externalities are present in consumption of the product, the market demand price will not reflect the 'social' value of the product as it is consumed. By the same token, if externalities are present in production of the product, the product supply price will not reflect the complete 'social' productivity of the factors of production. Externalities may be positive or negative, and when they can be shown to exist and can be meaningfully quantified, valuation adjustments may be made to reflect their significance.

An even more serious problem relates to the statistical coverage of the traditional national income indicators. What is needed, of course, is an indicator that captures all changes in the level of output. As a rule, the income accounts provide good coverage of those goods and services which pass through the market, but do not include many of those which do not. This means that the statistical coverage becomes more comprehensive as the economy becomes more complex, and the market expands into more and more areas of the economy. If so, the consequence is that the real output of a less developed country is probably understated more by the income accounts than the real output of an advanced country.

Economists and others have recognised that a gross measure of output, such as the real GNP, is not the best indicator of the aggregate size of the growth-producing mechanism called the economy. The reason is that part of gross output is needed to maintain the stock of capital which is part of the productive base of the economy. Some of the category called 'gross investment' constitutes net addition to the capital stock, and should thus be included in any measure of net productive capacity. But a substantial part of gross investment is simply replacement capital, called 'capital depreciation allowance' in the income account. Gross product less capital depreciation allowance is net product. We would argue that change in real net product is the best indicator of economic growth. But as stated in Chapter 3, Composite Rural Development Index (CRDI) and Human Development Index (HDI) are more comprehensive measures of rural development than the real NNP. But unlike real NNP, their estimation year after year is not yet institutionalised in India.

Although we cannot measure them in the income accounts, it is important to remember that other factors of production have precise parallels to the capital depreciation allowance. Labour sometimes depreciates as production occurs, and maintenance of

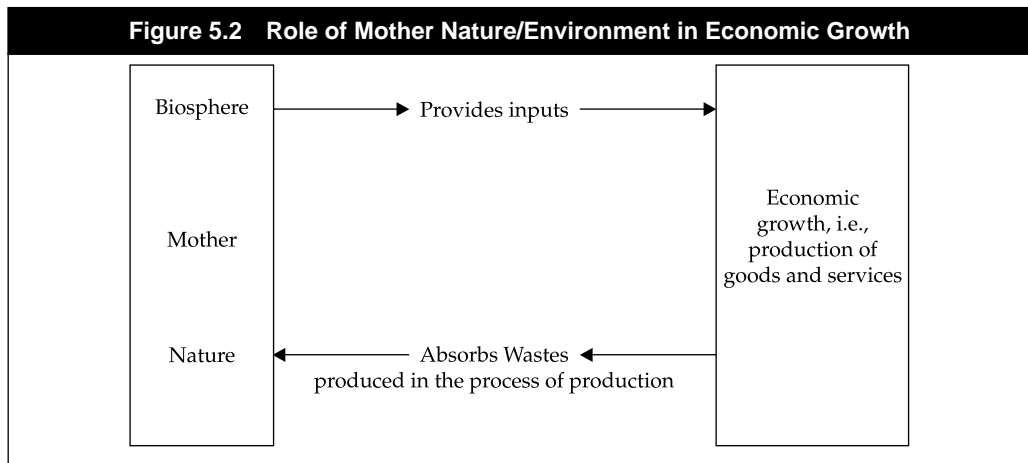
the stock of human capital at a certain base requires investment in training, schooling, health and nutrition. Resources taken from the natural environment are depleted and, to that extent, should be netted out of gross productivity figures in an exactly analogous fashion as with capital. The point is equally relevant with respect to the quality as well as the quantity of the factors. If the quality of the stock of human capital and of natural resources declines over time, latent productivity of the economy declines, and these deleterious changes should be subtracted from the net product of the system. Contrarily, if the quality of the factor stock improves due to technical advances and increases in knowledge, this latent capacity to produce should be added to the net product actually produced in a given time period.

Perhaps the most devastating limitation of our productivity accounts is the manner in which we deal with negative final products. These are those final outputs of production which cause disutility to human beings, and which usually cause deterioration in the natural environment in the form of waste residues and environmental degradation. They also take the form of external diseconomies, such as crowding, congestion and crime. Before a true estimate of the effects of growth on human well-being can be assessed, these negative influences on growth should be netted out from the positive ones.

NATURAL RESOURCES

By a natural resource we mean any product, thing or circumstance found by man in his natural environment that he may in some way utilise for his own benefit. In this sense, the resources provided by nature include air, climate, soil, water, plants, animals, mineral ores, mineral oil, coal, natural gas, solar radiation and certain amenities which can be used for tourism. As time goes by, the world's resource pattern changes, not because nature's basic provision alters, but because of changes in what constitutes a resource. Natural resources can be classified into two categories: non-renewable or stock resources, such as metal ores, mineral oil and coal deposits, and renewable or flow resources, such as solar radiation, animal and plant species, and winds, among others. This distinction is very important from the point of view of policies for resource development, conservation and utilisation.

Natural resources play a very important role in the process of rural development. Mother Nature provides us natural resources free of cost and performs two important functions in the process of economic growth, namely, providing inputs to production processes and assimilating the wastes generated in the process of production (Figure 5.2). Since Planet Earth is finite, closed and non-growing, there is a natural limit to both these critical functions, that is, both inputs provisioning and waste assimilating capacities of our planet are limited. This means that one cannot go on increasing the production of goods and services using natural resources forever, that is, there are ecological/natural limits to economic growth; hence, it cannot be sustained forever. Sustainable development requires that in the process of economic growth, we maintain our natural resources and environment intact, and use/harvest only that quantity which is regenerated naturally,



Source: Author.

that is, we live on the 'flows' and keep the 'stock' of natural resources and the environment intact. However, we would like to add that it is now possible to augment—through appropriate technological and management interventions—the natural flows/harvest of the products of nature.

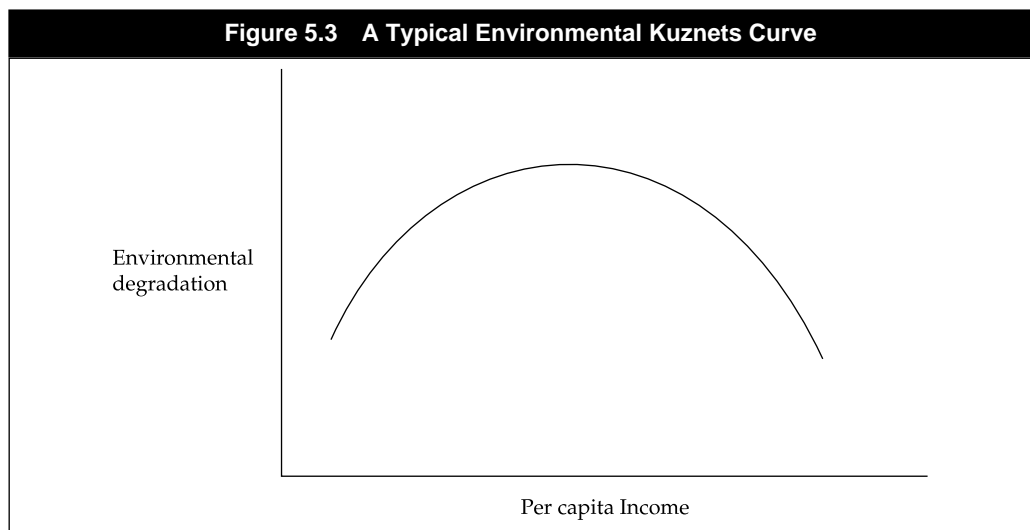
For example, fish catches can be increased sustainably through artificial feeding and breeding; crop yields can be increased through application of balanced organic and inorganic fertilisers, biopesticides, and scientific soil and water management; and forests can be rejuvenated faster and their natural productivity increased through application of fertilisers and water. Thus, the carrying capacity of our biosphere in terms of the population of living beings is, to some extent, amenable to augmentation through technological and managerial interventions. Therefore, contrary to what growthmaniacs and technocrats believe, there are limits to economic growth, and also, contrary to what ecologists assert, the limits are not absolutely rigid, that is, they can be relaxed. Proponents of sustainable development recognise this truth and advocate the middle path between the two extremes represented by technocrats and ecologists.

There are three major hypotheses that seek to propound the relation between the natural resources and development: (a) Neo-Malthusian hypothesis; (b) Cornucopian hypothesis; and (c) the Environmental Kuznets Curve (EKC) hypothesis. The proponents of the Neo-Malthusian hypothesis, mostly biologists and ecologists, believe that the carrying capacity of our planet Earth is limited as the planet is finite, closed and non-growing. In other words, there is a natural limit to both the critical functions of the environment, that is, the inputs provisioning and waste assimilating capacities of our planet Earth are both limited.¹ On the other extreme, the proponents of the Cornucopian hypothesis have an optimistic perspective. They are mostly technologists, agricultural scientists and economists. They assert that there is no evidence or reason to fear the catastrophic collapse of societies postulated by the scholars subscribing to the Neo-Malthusian school. Thanks to the incentives provided by competitive markets, entrepreneurs are exploring

and developing new sources of energy and minerals, and reserves of many commodities have increased due to new discoveries and/or recycling of wastes. Also, research in agricultural sciences has made it feasible now to augment through appropriate technological and management interventions the natural flows/harvest of products of nature. (Singh and Shishodia 2007: 42–44).

The EKC hypothesis proposes that there is an inverted U shaped relation between quality of environment as measured by some of the indicators of environmental degradation and per capita income, which is an important indicator of development (Figure 5.3). This means that environmental degradation is low initially when the per capita income is low, then it increases with increase in per capita income and, eventually, it declines with further increase in per capita income. The EKC is named after Simon Kuznets (1955) who proposed a hypothesis that the relationship between a measure of inequality in the distribution of income and the level of income is depicted by an inverted U shaped curve. The EKC hypothesis has been interpreted by many scholars to imply that economic growth will eventually redress the adverse environmental impacts of the early stages of economic growth and that continued growth will lead to further improvements in the quality of environment. The hypothesis has been criticised by many scholars on both theoretical and empirical grounds (Stern 1998: 173–96). But overall, the general consensus is that it holds for some but not all environmental indicators and that economic growth alone cannot solve all environmental problems. The best fit is for air pollution and a few indicators of water pollution (Barbier 1997: 357–58).

Following the teachings of India's great philosophers, scholars and *gurus*, we believe in the middle path between the two extremes represented by biologists and ecologists, and technocrats and economists. This means that contrary to what growthmaniacs and technocrats believe, there are limits to economic growth and, also, contrary to what



Source: Author.

ecologists assert, the limits are not absolutely rigid; they can be relaxed. We conclude with an optimistic view that, as argued by Simon and Kahn (1984), the twenty-first century will usher in an era characterised by higher living standards and reduced human impacts on the environment as a result of technological advance and policy innovation. This view is consistent with the principles underlying sustainable development.

In India, Common Pool Resources (CPRs), that is, resources used by people in common, play a very important role as sources of food, fuel wood, fodder and many other basic needs of rural people, particularly the poor. India has nearly 100 million hectare (mha) of common pool land, about 30 mha of common pool forests, and the bulk of its water resources and fisheries are also CPRs. One of the major causes of rural poverty in India is the lack of access of the poor to privately owned natural resources and natural CPRs. With the growing commercial exploitation of natural CPRs, the rural poor people find it difficult to meet their basic requirements. Depletion of CPRs of land, forests and water has increased the misery and drudgery of the rural poor, particularly women, who now have to spend a lot of their energy and time in fetching water, fuel wood and fodder from far away places. Restoration and judicious management of natural CPRs is essential for improving the well-being of the rural poor, as also for improving the quality of the environment (Singh 1994: 16–20).

At any level of economic development, utilisation of domestically available natural resources constitutes the bedrock of an economy. The quantity and quality of available natural resources along with the intensity and efficiency of their use determine, to a considerable extent, the level and pace of the economic development of a nation. Poverty of natural resources does not, however, exclude a high level of economic development, as is shown by the examples of Denmark, Switzerland, Israel, Hong Kong and Japan. These countries have compensated for the lack of natural resources by appropriate technologies, institutions and organisations, and highly developed human resources. India is relatively well-endowed with natural resources, but has not been able to develop and utilise them fully and judiciously for the benefit of its people. Hence the low level of agricultural and rural development in India.

It is almost invariably true that the poorer a country is, the greater the percentage of its income that goes to the owners of natural resources, and thus the greater the importance of natural resources to economic development. This can be easily demonstrated in the case of food production. In India, about 42 per cent of the total private consumption expenditure (a proxy for income) is spent on food and beverages. Of the total cost of production, approximately 30 per cent is paid out to the owners of land in the form of rent. Thus, approximately 13 per cent of the community's total income is spent on land services alone. This means that so much of the capital wealth in India is held in the form of land. Who owns this land makes a tremendous difference, since economic, political and social privileges also tend to be associated with land ownership. In a developed country such as the USA, on the other hand, about 10 per cent of the total income is spent on food, and approximately 20 per cent of the cost of producing food goes towards land rent. Thus, only a little over 2 per cent of the total community income goes to the owners of land. Land ownership, then, has far less economic and political significance in the USA than in India.

The same point is relevant with respect to the production of other products that depend primarily on natural resources. If capital is scarce and labour tends to be unskilled, then land and natural resources of other kinds tend to be very significant in production and their ownership becomes an important social issue.

HUMAN RESOURCES

Both the size and quality of human resources play an important role in the process of development. The level of employment is best considered from the viewpoint of the long run and the short run. Over the long run, employment is related primarily to population growth. The correspondence between employment and population growth is especially close in societies where human beings enter the labour force at a young age, where much of the labour is utilised in agricultural pursuits, and is, therefore, likely to be utilised even if underemployed. The higher the rate of population growth, the larger will be the amount of labour used relative to the other factors of production.

The important point in this connection, however, is that it takes time and investment to get a fully productive human being. If the time is shortened by the necessity for children to work, the result tends to be less productive labour over the long run. On the other hand, if work is postponed and children go to school, the burden on public institutions, such as the educational establishments, becomes greater, and the net consumption embodied in per capita incomes is reduced, as resources go into institutions for training and maintenance, rather than for consumption. Thus, per capita incomes are temporarily reduced until people eventually get into the labour force, at which time, per capita incomes are increased if the labour is productive enough to compensate for the time which is spent on schooling and training.

In the short run, on the other hand, employment can be increased by providing more opportunities for people to work. This may be accomplished by offering favourable wages, which attract previously unemployed workers into the labour force, and by providing a healthy economic environment where jobs are more plentiful.

Research undertaken in developed and developing countries of the world reveals that for an increase in output, the quality of labour is more important than the quantity. A clear picture emerges if one looks at the experience of different countries. No country with an educated, technically trained labour force is poor, and no country with a predominantly illiterate, untrained labour force is rich. In general, the quality of the labour force is much more critical in economic development than is the availability of natural resources. Japan is a country which has almost no mineral or energy resources but has high economic productivity because of a highly literate, trained and efficient working population.

It has also been seen that investment in education and training produces very high internal rates of return in economic output. Especially high are the returns to basic literacy. The rate of returns to investment in schooling is in the neighbourhood of 50 per cent per year in many rich countries, and in developing countries like India, the rate of return to primary schooling is even higher. Any poor country that wants to develop could do no better than use its scarce resources in schools, technical education, training and management.

Another point to note about people and their importance in the development process is that their values and attitudes must be conducive to development. If development is to occur, an increase of income and wealth, held either privately or publicly, must be one of the dominant goals in life. That is, people must have a desire to acquire, accumulate or consume at increasing levels. If not, development is practically impossible. There is no denying that it was this desire that produced Western technology, money and financial intermediaries, private property, and an economic structure based on free contract and exchange. Some would argue that even political liberty, which increased social mobility, which in turn contributed to development, resulted from the dominance of pecuniary considerations in the hierarchy of privately held goals.

India is a labour surplus country. According to the 2001 population census, India's rural labour force was 234.1 million, comprising 127.3 million cultivators and 106.8 million agricultural labourers, which was about 64 per cent of India's total labour force. The quality of the rural labour force is poor in terms of skills, education, training, values and attitudes. The literacy rate for the rural population in India in 2001 was as low as 59 per cent as compared to 80 per cent for urban population. There is a positive correlation between the literacy rate and real per capita gross domestic product (GDP). For a sample of 43 developing countries, the simple correlation between these two variables was 0.48. The poor quality of the rural labour force, in conjunction with very low per capita availability of capital, explains to a large extent the low productivity and, hence, the low per capita incomes in India's rural sector.

CAPITAL

Most development economists from the developed Western countries consider capital to be the key instrument of economic development. The Harrod-Domar model represents a typical example of this school of thought. In this model, capital accumulation plays a crucial role in the process of economic growth, as the rate of economic growth is expressed as the product of the savings rate and output-capital ratio. Capital formation is, therefore, an important prerequisite of economic development. Much of new technology, such as high yielding seeds, chemical fertilisers and pesticides, tractors, combine harvesters and food processing plants, is embodied in capital. Increases in the capital stock lead to increases in the marginal productivity of labour which, in turn, generally enhances wage rates.

Capital can be classified in various ways. Long-term capital is embodied in improvements in land, machinery, equipment, basic infrastructure and other long-lived forms of capital, while operating capital exists in the form of seeds, fertilisers, fuel and other raw materials which are used up annually in the production process.

Moreover, capital may also be classified according to whether it is owned publicly or privately. Private capital is managed by the individual entrepreneur, and examples are those listed above in the examples of long-term and operating capital. Public capital, on the other hand, is the society's investment in infrastructure, such as roads, schools, hospitals, national defence and various government establishments. Private capital is, of

course, acquired by individuals by their own decisions to consume less than they earn. Public capital, on the other hand, is produced by joint action through political processes, but can also come into being because the society earns more than it consumes. For promoting rural development, both private and public capital investments are necessary. At present, both types of investments in India fall short of the requirement and, hence, the level and pace of rural development have been affected adversely.

Looking at capital formation from the vantage point of the economy, capital resources can be acquired in one of the following two ways: one, by domestic saving, or two, by foreign aid. In most countries, domestic savings can be acquired from three sources. The first is from private citizens who consume less than their incomes, and make the difference available in the form of investment to the economy. In rich countries, people save as a matter of course in their attempt to provide security against various contingencies and, thus, the saving takes the form of insurance premiums, retirement annuities, bank accounts, and so on. Since these choices are made voluntarily, people consider their well-being enhanced in the process of saving and, therefore, no deprivation is involved. In poor countries, on the other hand, saving is often painful, because people live so close to the edge of hunger and disease, and need all their income for consumption alone. As a result, savings are usually meager. But in India, of late, domestic saving has been increasing in all sectors. For example, in 2004–05, the average rate of gross savings in all sectors was 29.1 per cent as against 24.9 per cent in 1999–2000. Similarly, the average rate of gross saving in the household (private) sector increased from 21.3 per cent in 1999–2000 to 22.0 per cent in 2004–05 (GoI 2006c: xxxix). If the society needs more savings than are available by private decisions to save, then saving must be forced by inflation.

Second, savings can be acquired from corporations, which as a rule, in an effort to expand, take some of their earnings and plough them back into the firm for additional capital formation. In rich countries, where corporations are numerous, large and powerful, this form of savings and the concomitant capital formation is extremely important. In India, the average rate of gross savings in both the private corporate sector and public sector has been increasing but is still very low; in 2004–05, it was 4.8 per cent and 2.2 per cent, respectively (GoI 2006c: xxxix).

Last, governments can acquire resources for purposes of capital formation through taxes and inflation. Income tax, property tax, excise tax, value-added tax, and so on—all have their own advantages and disadvantages. However, space will not permit an evaluation.

Inflation is also a form of taxation. The government causes inflation by increasing the money supply, which creates excess demand for goods and services. This results in price rises and the average rise in a composite index of prices is known as inflation. With the money created by running printing presses or selling securities, the government buys goods and services. These may take the form of investment capital. Inflation is really a tax on cash balances, since those individuals and organisations in the economy who hold cash balances see their purchasing power getting eroded by inflation. There is, thus, a transfer of wealth from those who hold money in the form of cash balances to those (in this case the government) who obtain the resources through the creation of money. It is possible, of course, to analyse and evaluate the efficiency and equity effects of inflation

vis-à-vis other forms of taxation to raise funds for government use. But this is not within the purview of this chapter.

Of course, saving is only one prong in the process of capital formation. Somehow the saving generated in the economy must be made available to the investors, that is, those who actually produce the capital formation. If the primary reliance is given to private savings, then an organisational base must be available to make the transfer of funds to investors. In most countries, these organisations are the commercial banks, savings and loan associations, insurance companies and credit cooperatives. Likewise, if government funds are available for investment, whether they come from external aid, taxation or money creation, there must be an institutional base to transfer the resources to investors. In many countries (including India), these take the form of central banks, and industrial and agricultural banks.

Foreign aid has been used extensively since World War II as a form of transfer of international capital from one country to another. It should be pointed out, however, that many of the advanced countries of today received much of their development capital from external sources. The USA and Canada were aided tremendously in the take-off phase of their development by foreign capital shipments, particularly from the UK. There is one major difference, however, between that period and the present day. The bulk of the development capital that fuelled the take-off in the US and Canada came from private foreign sources. Profit opportunities were unusually high, and this attracted capital which was seeking these profits. It goes without saying that since the capital transfer was made voluntarily, both borrowers and lenders were benefited by it.

There is also much private capital that goes abroad today. Large multinational corporations and international firms have established branches in many countries, including India. However, for development purposes, large quantities of financial resources are obtained from international organisations, such as the World Bank, the Asian Development Bank (ADB), the Inter-American Development Bank (IADB), and through foreign aid from government to government. Again, as long as the transfers are mutually beneficial and voluntary, there is a lot to be gained by both the grantor and the grantee. Since a large amount of international capital is available through grants or low-cost loans, the recipients do not worry too much about the economic feasibility of projects utilising these funds. This is a needless waste of scarce resources. International grants and low-cost loans should be administered just as tightly and economically as high-cost loans. The real cost to the economy of using these funds, regardless of source or terms, are the foregone opportunities of using the resources in their most productive alternative. These capital funds should be allocated to uses where they generate the greatest productivity. Planning should be just as tight and rigorous with foreign aid resources, in terms of determining their use in the economy, as would be the case if the resources were generated through domestic saving.

India's rural sector is starved of capital, and this is perhaps one of the most serious constraints on rural development. The rate of capital formation in the rural sector has been low vis-à-vis the rate required for achieving a higher level of rural development. Furthermore, much of the surplus generated in the sector is siphoned off to the urban sector for a variety of reasons, including lack of institutional arrangements for mopping up small savings and providing incentives to small savers.

TECHNOLOGY

In all likelihood, technological advance is the most important factor that accounts for economic development. In many ways, it is the *sine qua non* of development, that is, it *is* development. Studies in the advanced countries have shown that increases in natural resources, employment and capital have accounted for less than one-half of the increases in output over time. The bulk of growth must, therefore, be accounted for by qualitative rather than quantitative increases in the factors of production. In essence, this is what technological advance is—an improvement in the processes of production, which produces increases in output per unit of input. It is improvements in knowledge and knowhow; it is improved skills; it is utilising better machinery and equipment, all of which combine to increase productivity.

Many students of development, notably Hayami and Ruttan (1970), Schultz (1964) and Rostow (1960), have constructed theories of development which have technological advance at the very centre of concern. Schultz has argued that the transition from traditional to modern agriculture is essentially one of utilising modern inputs, which are defined as those that are technologically advanced. In Rostow's scheme, once the static stage of traditional life has been disturbed, society passes through the later stages of: (a) establishment of the preconditions for growth; (b) take-off; (c) drive to maturity; and (d) mass consumption. During the period of the establishment of the preconditions for growth, the insights of modern science begin to be translated into new production functions. This is just another way of saying that technological advance is occurring.

Schumpeter (1949) distinguishes between the two classes of influences upon the dynamic evolution of an economy, such as: (a) the effects of changes in factor availability, which he calls the 'growth' component; and (b) the effects of technological and social changes, which he refers to as 'development' or 'evolution'. In his view, development covers five combinations, which are as follows:

1. The introduction of a new commodity.
2. The introduction of a new method of production.
3. The opening of a new market.
4. The conquest of a new source of supply of raw materials or half-manufactured goods.
5. The reorganisation of an industry, like the creation of a monopoly position or breaking down a monopoly situation.

In Schumpeter's model of economic development, the entrepreneur is the central figure. He revolutionises the pattern of production by exploiting inventions, by exploiting untried technological possibilities for producing new commodities, by producing old commodities in new ways, and so on. For entrepreneurial activity to flourish, the capitalist rationality and bourgeois institutions are important prerequisites. Schumpeter also assigned an important role to credit as a means of enabling entrepreneurs to obtain productive resources and to carry out innovation. He emphasises the importance of innovation in generating business cycles. In Schumpeter's opinion, there is no limit to the increase in the rate of output per head.

The critical question is, of course, how to promote a high rate of technical change. In the first place, the general economic climate must be conducive to innovation and knowledge building. As a rule, if incentives exist for individuals to innovate, they *will*. A country which has a sizeable and educated middle class can rely largely on the profit motive to push inventors, scientists and entrepreneurs to undertake technological advance. In conservative traditional societies, however, public institutions must also play a very large role. Educational institutions are crucial at all levels. So are the experiment stations and the extension services. Empirical studies from both rich and poor countries clearly demonstrate that the rates of return from public investment in these knowledge building institutions and activities are very high. Over the long run, no country can afford to neglect these institutions which act as agents of change in producing and implementing technical change.

Prior to 1965, the outlook for agriculture in India was discouraging. But the post-1965 era was characterised by a marked spurt in the use of modern inputs, like high yielding seeds, chemical fertilisers, plant protection chemicals, and improved farm machines, tools and equipment.

In his 1970 presidential address to the Indian Economic Association (IEA), Dantwala (1970: 165–92) reviewed various economic, technological, institutional and organisational factors which had been given credit for the so-called 'technical breakthrough' or the Green Revolution in Indian agriculture. He concluded that land tenure, credit, marketing, extension services, education, relative prices, taxes and subsidies were all of minor significance when compared with new technology. He arrived at his conclusion by a process of elimination: technology was the only causal factor which changed significantly between the pre-1965 stagnation and the post-1965 Green Revolution. What he did not appreciate was the fact that both the introduction and spread of new technology were facilitated by the efforts of various institutions and organisations, including agricultural universities, and provision of extension education services, credit, marketing and subsidies. It is, however, true that new—and appropriate—technology is a necessary condition for economic growth. But new technology unsupported by appropriate institutions and organisations cannot bring about a transformation of traditional agriculture. Now India has access to the latest available new technology in the field of crop production, but still its average paddy yield in 2004–05 was about 2,900 kg/ha, as compared to 6,730 kg/ha in Korea and 6,420 kg/ha in Japan. What are the factors that can explain this vast yield differential? Certainly, natural resources and knowledge of new technology cannot. It is the level and intensity of the use of available new technology which explains these differentials, and which is a function of supporting institutions and organisations, including government policies and programmes in the fields of input and output prices, credit, marketing, subsidies and land reforms. One of the major factors responsible for low crop yields in Indian agriculture is the low level of use of fertilisers. For example, in 2004–05, the average consumption of fertiliser in terms of nitrogen, phosphorous and potash (NPK) fertilisers in India was about 105 kg/ha, as compared to 350 kg/ha in Japan and 448 kg/ha in South Korea.

India has an impressive infrastructure for agricultural research, comprising 45 research institutes, 10 project directorates, 30 national research centres, four national bureaux and

86 all-India coordinated research projects, all established by the Indian Council of Agricultural Research (ICAR). Besides, there are 31 state agricultural universities (SAUs), 120 zonal research stations affiliated to the SAUs, one central agricultural university, eight regional agro-economic research centres, and numerous other public and private organisations engaged in research on issues of agricultural and rural development, and finding out solutions for them. Both ICAR institutions and SAUs have played a significant role in ushering in the Green Revolution in the country. What is needed now is a change in the orientation of researchers towards demand-driven, problem-solving and action-oriented research. There is also an urgent need to step up public and private investment in agriculture research. The launching of the National Agricultural Technology Project (NATP) by ICAR is a welcome move in that direction (Pal and Singh 1997).

While examining the role of new technology in rural development, I would like to caution that the adoption of technologies which are not appropriate may cause serious damage to the biosphere, albeit unintentionally. The general economic and political environments prevailing in the developing countries tend to favour and promote environmentally harmful technologies. For example, an indiscriminate use of chemical fertilisers, and the effluents discharged by firms producing such chemicals as naphthol, disulphonic acid and its derivatives, pollute the rivers, streams, land and air, and cause hazards to human health and reduce the longevity of these. People in India, particularly the poor, suffer more from such hazards, as there are neither property rights nor liability rules to protect them. Therefore, it is necessary that the environmental impacts of new technologies are carefully evaluated before they are recommended for wider use.

ORGANISATIONAL AND INSTITUTIONAL FRAMEWORK

As already mentioned, rural development is influenced by a multitude of factors, such as natural resources, human resources (labour), capital, technology, and institutions and organisations. Although the Classical and neoclassical economists emphasised the role of natural resources, labour, technology, and investment in economic development, they did not assign any significant role to institutions and organisations in the process of development. They assumed the institutional setup of the economy as a given (exogenous) and, hence, beyond scientific analysis. As a matter of fact, they even argued for minimising the role of the government in the process of development and advocated a policy of *laissez-faire*. It was the institutional economists and Karl Marx who recognised the significant role that institutions and organisations play in the process of economic development.

The terms 'organisation' and 'institution' are often used interchangeably. We consider organisations as a subset of the broader set of institutional structures or arrangements. An organisation connotes coordinated acts or endeavours of two or more individuals. It is created to give effect to a certain institutional arrangement. The main function of an economic organisation is to provide signals that will guide the self-interested economic agents/entities to act in the interest of the larger community. The main task of any nation-state is to create institutional arrangements that provide the needed signals to

individual economic entities. Markets provide such signals efficiently, so long as they operate with low transaction costs. Non-market mechanisms, such as government agencies and non-governmental organisations (NGOs), including cooperatives, can also provide such signals.

Institutions and organisations are important aids to development. They may affect agricultural and rural development in many different ways, including the provision of production inputs and services, reduction of transaction costs, enhancement of the bargaining power of rural producers vis-à-vis those to whom they sell their produce and from whom they buy production inputs and services, influencing investments and savings and bringing the two together, and so on. The economic life of any community takes place in a milieu of organisations and institutions. They largely determine the economic structure of the community, and set the rules in which the economic game is played. Changes in these organisations and institutions over time will probably have a pronounced effect on the economic output and development. Often these effects are difficult to isolate and measure because of the interdependence between changes in organisations and institutions, and between other instrument variables of agricultural development.

There are many forms of organisations, such as public (government), sole proprietorship, partnership, company, cooperative and charitable trust, that can serve—and are, in fact, serving—the needs of the farmers in India. The form of organisation suitable for promoting agricultural development should fully identify with the interests of the farmers, and should be fully oriented to meeting their needs, both organisationally and operationally.

The government has been—still is and will continue in the near future to be—an important organisation in the field of agricultural and rural development in India. Development is seen as the specific responsibility of the government. This has far reaching implications for the role of public bureaucracy, which is the arm of the state responsible for carrying out the wishes of the political leaders. Efforts to bring about improvement in the quality of life of the rural people depend heavily on government administration and bureaucrats.

At the institutional level, laws of property and contract have a profound impact on economic growth. The essential questions here are as follows:

1. What may a man do with his property?
2. What may others do to his property?
3. In what kinds of economic activity may he engage?

Some societies, like Japan, are fairly liberal in permitting private firms and individuals to operate without restrictions, while others impose many restrictions that curtail private profits in the name of protecting the broad public interest. Other questions relate to what kinds of agreements private individuals may make; what kinds of claims and contracts can be enforced and to what extent, and so on.

All these questions relate to the influence of government regulation of business activity and its impact on economic growth. How tightly are specific kinds of business

activities regulated by the government? How are the taxes, tariffs, subsidies and other fees utilised to discourage certain activities and encourage others? How are the taxes and laws of inheritance used to control the distribution of income at the expense of economic growth? All these forces and factors determine the incentives for economic production, and must not be neglected in the search for a favourable institutional and organisational climate for economic development.

The only organisation that conceptually satisfies all the criteria of a good rural organisation is a cooperative. The cooperative form of organisation is solely designed for promoting the mutual interests of its user patrons on the basis of equality and equity. It is controlled by them on a democratic basis. It also resolves the conflict of interests between the lender and the borrower, or between the seller and the buyer, for, in it, the lender and the borrower, or the seller and buyer are the same person. The objective is not to do business for the sake of profits only, but for meeting the members' needs. It is a local organisation, and provides for local participation. It is responsive to local needs, as its policy is decided democratically by the local members/users. It serves as a training ground for the rural people in business and in democracy.

In India, the Anand pattern dairy cooperatives have demonstrated what appropriate institutions and organisations can do to initiate and foster agricultural and rural development. Similarly, sugar cooperatives also have contributed significantly to rural development.

Besides cooperatives, there are many other forms of formal and non-formal associations which could do a good job of promoting agricultural and rural development. For example, Sadguru Water and Development Foundation, a Dahod (Gujarat) based NGO; SEWA, an Ahmedabad (Gujarat) based NGO; and PRADAN, a Delhi-based NGO, promote people's organisations at the grassroots level to take up agricultural and rural development projects.

The role of the NGOs is to organise people and help them with technical information, training and, to some extent, with funds. Besides, they also help grassroots organisations to secure financial assistance from various governmental and non-governmental sources. In most cases, the performance of the programmes taken up under the auspices of the NGOs has been better than that of government programmes. However, this statement cannot be generalised, as there are many NGOs which do not have the necessary technical and managerial expertise, and financial discipline to initiate and support agricultural and rural development programmes. Indian corporations and companies could play a pivotal role in promoting agricultural development. In fact, many blue chip companies such as the Tatas, Mafatlals, Larsen and Toubro, and Hindustan Unilever, and associations of industrialists such the Confederation of Indian Industry (CII) and the Federation of Indian Chambers of Commerce and Industry (FICCI), have already won laurels for their exemplary work in the field of agricultural and rural development, not only from Indian NGOs, and government organisations, but also from international donors and development agencies. Corporates can bring the benefits of modern science and technology, management and world markets to the agricultural sector, and thereby promote agricultural development, particularly now in the era of liberalisation, deregulation, privatisation and globalisation.

RELATION BETWEEN RURAL DEVELOPMENT AND ITS DETERMINANTS

It is not easy to quantify the relationship between rural development and the various determinants discussed in the preceding section. For one thing, there are no time series data available on any acceptable measure of rural development, nor on these determinants, some of which cannot be quantified at all. Second, all these determinants keep changing simultaneously, and it is not possible to isolate and measure the contribution of any single determinant without resorting to some sophisticated econometric techniques.

A few attempts have been made in the past to measure the impact of some of these determinants on rural development. For instance, Hayami and Ruttan (1970: 895–911) attempted to explain the differences in agricultural output per worker (a proxy for agricultural development) between a representative group of developed and developing countries, and found that: (a) resource endowment (land and livestock); (b) technology (fertilisers and machinery); and (c) human capital (general and technical education), accounted for 95 per cent of the differences. The implications of their analysis for an agricultural development strategy for developing countries are clear. An attempt must be made to close the gap in the levels of modern industrial inputs, education and research between the developed and developing countries. Agricultural surplus generated by closing the gap, over and above the amount necessary to maintain the growth of agricultural productivity, must be used to finance industrial development. In India as well, a number of studies have been conducted, mostly at the farm level, to determine the effect of land, water (irrigation), fertilisers, labour and power on farm production and income. These studies furnish valuable information about the nature and magnitude of the impact of various determinants on farm income. However, there is a need for conducting macro-level studies aimed at determining the relationship between some acceptable measure of rural development and various factors affecting it.

MAIN POINTS

1. There are many physical, technological, economic, socio-cultural, institutional, organisational and political factors that affect the level and pace of rural development. These factors operate at all levels: household, village, district, state, nation and the world as a whole. Depending upon how they are managed, these factors can have both favourable and adverse effects on development. Knowledge about the nature and magnitude of the impact of various determinants on rural development is necessary for rural development managers to be able to use these factors to achieve their goals efficiently and effectively.
2. In the absence of a single index of rural development, we generally use change in output as its proxy measure and examine the role of various factors that appear to us, on an *a priori* basis, as important determinants of this measure. It is assumed that a change in output is a function of the changes in natural resources, employment, capital, technology, and institutions and organisations including governance.

3. Measuring changes in output over time is much more complex than often thought. For this, we need a system of accounts that provides the indicators of output change. The national income accounts provide the indicators of aggregate output. Some of these indicators are gross national product (GNP), net national product (NNP), national income, personal income and personal disposable income.
4. Physically unlike goods and services, such as wheat, milk, houses, clothes, steel, aeroplanes, banking, insurance, and so on, are aggregated into a single measure by converting the physical units of output into monetary values by multiplying the physical units by market prices. The monetary values of output are, thus, comparable and additive.
5. A gross measure of output, such as the real GNP is not the best indicator of economic growth, as part of the gross output is needed to maintain the stock of capital in a productive form. In view of this, an increase in the real NNP is the best indicator of economic growth. The Composite Rural Development Index (CRDI) and the Human Development Index (HDI) are more comprehensive measures of rural development than the real NNP. But unlike the real NNP, their estimation year after year is not yet institutionalised in India.
6. Natural resources including the environment have a significant effect on output, or economic growth. The environment—or Mother Nature—performs two important functions in the process of economic growth, namely, providing inputs to production processes and assimilating the wastes generated in the process of production. Since our planet Earth is finite, closed and non-growing, there is a natural limit to both these critical functions. This means that economic growth cannot be sustained forever.
7. Sustainable development requires that in the process of economic growth, we maintain our natural resources and environment intact and use/harvest only that much quantity which is regenerated naturally. However, it is now possible to augment the natural flows/harvest of products of nature through appropriate technological and managerial interventions.
8. Poverty of natural resources does not exclude a high level of economic development, as is shown by the examples of Denmark, Switzerland, Israel, Hong Kong and Japan. These countries have compensated for the lack of natural resources by appropriate technologies, institutions and organisations, and highly developed human resources. India is relatively well endowed with natural resources, but has not been able to develop and utilise them fully and judiciously for the benefit of its people. Hence the low level of agricultural and rural development in India.
9. Human resources play an important role in the process of development. Research undertaken in the developed and developing countries of the world reveals that for an increase in output, the quality of labour is more important than the quantity. This is evident from the fact no country with an educated, technically trained labour force is poor, and no country with a predominantly illiterate, untrained labour force is rich. Japan is a country which has almost no mineral or energy resources, but has high economic productivity because of a highly literate, trained and efficient working population.

10. The poor quality of the rural labour force in terms of education, training and skills, in conjunction with very low per capita availability of capital, explains to a large extent the low productivity and, hence, the low per capita incomes in India's rural sector.
11. Capital is considered by most development economists to be the key instrument of economic development. Capital formation is, therefore, an important prerequisite of economic development. Much of the new technology such as high yielding seeds, chemical fertilisers and pesticides, tractors, combine harvesters and food processing plants, is embodied in capital. Increases in the capital stock lead to increases in the marginal productivity of labour which, in turn, generally enhances the wage rates.
12. Capital resources can be acquired by domestic saving and/or by foreign aid. Governments can also acquire resources for purposes of capital formation through taxes and inflation. India's rural sector is starved of capital and this is perhaps one of the most serious constraints on rural development.
13. The rate of capital formation in the rural sector has been low vis-à-vis the rate required for achieving a higher level of rural development. Furthermore, much of the surplus generated in the sector is siphoned off to the urban sector for a variety of reasons, including a lack of institutional arrangements for mopping up small savings and providing incentives to small savers.
14. Technological advance is the most important factor that accounts for economic development. In many ways it is the *sine qua non* of development, that is, it is development. Studies in the advanced countries have shown that increases in natural resources, employment and capital have accounted for less than one-half of the increases in output over time. The bulk of growth must, therefore, be accounted for by technology. Many students of development, notably Schumpeter, Schultz and Rostow, have constructed theories of development which have technological advance at the very centre of concern.
15. The critical question is, of course, how to promote a high rate of technical change. This can be done by creating the general economic climate which is conducive to innovation and knowledge building. Educational and research institutions are crucial at all levels of development. In India, the extent of use of the available new technology in the rural sector is very low, which explains the low level of rural development to a large extent.
16. Institutions and organisations are important aids to development. They affect agricultural and rural development in many different ways, including the provision of production inputs and services, reduction of transaction costs, enhancement of bargaining power of rural producers, influencing investments and savings, and bringing the two together, and so on.
17. There are many forms of organisations, such as public (government), sole proprietorship, partnership, company, cooperative and charitable trust, that can—and in fact, do—cater to the needs of the rural people in India. The form of organisation suitable for promoting agricultural development should fully identify with the interests of the people, and should be fully oriented—both organisationally and

operationally—to meet their needs. In India, the Anand pattern dairy cooperatives have demonstrated what appropriate institutions and organisations can do to initiate and foster agricultural and rural development.

18. It is not easy to quantify the relationship between rural development and the various factors that affect it. This is mainly because there are no reliable time series data available on any acceptable measure of rural development or on its determinants. However, only a few attempts including the one made by Hayami and Ruttan have been made in the past to measure the impact of some of these determinants on rural development. There is need for conducting macro-level studies aimed at determining the relationship between some acceptable measure of rural development and various factors affecting it.

NOTE

1. The Club of Rome report, *The Limits to Growth* (Meadows et al. 1972), for example, predicted that if the current patterns of population growth and resource consumption continue, the world economic system would collapse by the mid-twenty-first century.

QUESTIONS FOR DISCUSSION

- 5.1. Discuss how human resources can have both favourable and adverse effects on development.
- 5.2. What are the limitations of real net national product (NNP) as a measure of rural development?
- 5.3. Most of India's natural resources and environment are degraded and polluted due to mismanagement. Suggest measures for their restoration and making them more productive so as to sustain, if not improve, the present rate of economic growth.
- 5.4. India's rural sector is starved of capital and whatever surplus is generated in the sector is siphoned off to urban areas for various reasons. Suggest measures for reversing this trend.
- 5.5. India now has access to the latest agricultural technologies but its crop yields are still very low relative to those in such countries as China, Mexico, Israel, Japan, the USA and Canada. Explain why.
- 5.6. Discuss the strengths and weaknesses of a cooperative as an organisation for promoting rural development.
- 5.7. What are the problem in quantifying the relation between rural development and its determinants?

6

Rural Development Policies

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define public policy and differentiate the concepts of 'policy', 'programme' and 'project';
- illustrate how a public policy, say, rural credit policy, curbs as well increases the freedom of a farmer borrower;
- identify the major reasons why we need a 'Rural Development Policy' in India;
- explain the major goals of 'Rural Development Policy' and their rationale;
- explain the concept of 'Hierarchy of Policy Goals', and illustrate how and when a goal becomes a means of achieving a superior goal;
- know the major Rural Development Policies of India and their salient features and
- critically examine the implications of globalisation and liberalisation for rural development.

INTRODUCTION

Webster's dictionary defines 'policy' as a definite course of action selected (as by the government, an institution, a group or an individual) from among alternatives, and in the light of given conditions to guide and usually to determine present and future decisions. The most common social and

political usage of the term 'policy' refers to a course of action or intended course of action conceived of as deliberately adopted after a review of possible alternatives, and pursued or oriented to be pursued. The policy process is the formulation, promulgation and application of these courses of action. Here, we will concern ourselves with public rural development policy, by which we mean actions taken by the government in the pursuit of certain objectives of rural development. Rural development, as usual, includes agricultural development as well.

It is important to distinguish at the outset between: (a) policy; (b) programme; and (c) project. Policy is a comprehensive term and connotes, as mentioned earlier, a set of intended actions. It subsumes programmes which are narrower in scope than policy, but more specific with regard to what is to be done, how, by whom and where. A policy has to be translated into a number of programmes before it can be implemented. A project is highly specific and detailed in terms of its objectives, location, duration, funds and executing agency, and lends itself to planning, financing and implementation as a unit. A programme may consist of several projects. A rural development project may be defined as an investment activity, where resources are expended to create a producing asset from which we can expect to realise benefits over an extended period of time.

This chapter first presents a few basic elements of public policy, including a conceptual framework and rationale of public policy. This is followed by an overview of India's major public policies related to the rural sector. Finally, we briefly discuss the important implications of globalisation for rural development. The main objective of the chapter is to familiarise the student with the basic elements of public theory and the salient features of India's rural development policies launched from time to time.

FREEDOM, CONTROL AND PUBLIC POLICY

Public policy is a form of social control. A farmer accepting a production loan from a nationalised bank and a subsidy from the government is restricted in the manner in which he can spend the borrowed money and subsidy, but his freedom to expand his output, improve his income and standard of living, and develop his individual talents is enhanced. The farmer is struggling with the dilemma of freedom and control. As an individual, he cherishes his dignity and independence; as a social being, he has to realise the necessity for discipline and control. However, like so many other dilemmas, this too is sophistry, based upon two alternatives that are made to appear exhaustive and mutually exclusive. Freedom and control are not mutually exclusive alternatives: they are two principles which can be compatible. In fact, the basic purpose of restraining certain actions through social controls is to safeguard the freedom for certain other actions.

A distinction between 'licence' and 'freedom' is useful here. If licence is defined as self-gratification harmful to others, and freedom is defined as self-expression not harmful to others, then social controls can promote freedom by restricting licence. Seen from this perspective, there is no necessary conflict between freedom and control. In fact, social control can serve to expand individual freedom. So the real problem is not how we can

avoid social control; it is rather, how we can make social controls so selective that they will restrain licence and promote freedom in the larger interest of society.

NEED FOR A RURAL DEVELOPMENT POLICY

The farther away we move from simple, small scale handicraft industry and self-contained and subsistence agriculture, a greater need develops for public policy in the economic field. The individual, as a producer and as a consumer, depends more and more upon the general conditions of the market, of employment, output and production efficiency of the nation as a whole, and upon the way income is distributed among the people; in short, upon the economic welfare of the country. Some specific reasons favouring government intervention in the rural sector are as follows.

India's Commitment to Set Up a 'Socialist Pattern Society'

India has chosen to establish a 'socialist pattern of society'. This means that the basic criterion for determining the lines of development must not be private profit, but social gain, and that the pattern of development and the structure of socio-economic relations should be so planned that they result not only in appreciable increases in national income and employment, but also in greater equality in incomes and wealth (Government of India [GoI] 1961: 30). But the experience in India so far has been that the benefits of development have not been equitably shared by all. This has aggravated the problem of poverty, which has manifested itself in various forms, including rising unemployment, malnutrition, growth of slums, fall in real wages, and impoverishment of marginal and small farmers. The problems of poverty and employment extant in India—even after 60 years of independence—undermine the principal objective of planned development, which is improvement in the standard of living of the masses. It has been acknowledged that a high rate of growth is not a substitute for deliberate policies that seek to ensure equitable distribution of the gains of development. Therefore, there is need for a public policy to ensure growth with social equity or social justice.

Violent Fluctuations in Agricultural Production, Prices and Incomes

Agricultural production, being biological in nature, is more vulnerable to the vagaries of nature than non-farm production and, hence, it fluctuates more violently than industrial production in response to erratic rainfall or other natural phenomena. Fluctuations in agricultural output lead to still higher fluctuations in agricultural prices and, hence, agricultural incomes. This is because the demand for most agricultural products is inelastic (less than 1.00), or because of the higher price flexibility of agricultural produce

with respect to changes in the supply. This means, in simple words, that a 1 per cent increase in the price of a farm produce, say, wheat or rice, is associated with less than 1 per cent decrease in its demand or, alternatively, a 1 per cent decline in the price of a farm produce is associated with less than 1 per cent increase in its demand. Most farmers, being small scale operators and poor, cannot bear the consequences of fluctuations in farm output prices and incomes. They need some protection from the adverse effects of the free market and niggardly nature. Such protection can be provided only by the government in the form of price support, insurance and credit policies.

High Incidence of Rural Poverty

The incidence of poverty in rural areas in India is higher than in urban areas. Similarly, the average per capita income in rural areas is not only lower than in urban areas, but is also more unevenly distributed. The average annual per worker income in the agricultural sector over the period 1998–99 to 2003–04 was Rs 11,496 at 1993–94 prices, as against Rs 59,961 in the non-agricultural sector (Radhakrishna 2008: 45). According to the Uniform Recall Period (URP)¹ consumption distribution data of the sixty-first round of the National Sample Survey (NSS) conducted by the National Sample Survey Organisation (NSSO), in 2004–05, the poverty ratio in the rural areas of India was 28.3 per cent, as against 25.7 per cent in the urban areas, and 27.5 per cent for the country as a whole. The material blessings of development in India have been more bountiful for urban people than for the rural masses. This is true for other countries as well. The injustice of the plight of the rural people is reason enough for government intervention to support rural income, and improve its distribution through anti-poverty programmes.

Small, Scattered and Unorganised Rural Enterprises

Most rural enterprises are small, scattered and unorganised. Due to these characteristics, their owners have very low or practically no bargaining power vis-à-vis those to whom they sell their produce, and from whom they buy their supplies. This results in exploitation on both fronts—selling as well as buying. This heightens the need for government policies aimed at equalising opportunities, strengthening the bargaining power of individuals and groups in rural areas, and restraining the powerful from exploiting the weak.

Inadequate and Poor Basic Infrastructure in Rural Areas

Rural areas are at a great disadvantage in relation to urban areas, as far as the provision of basic infrastructural facilities and services, such as roads, drinking water, electricity,

schools, hospitals, police protection, transport and communications is concerned. Not only are these public facilities and amenities in rural areas inadequate, but they are also very poorly organised and undependable. As a result, poor villagers are damned, generation after generation, to poor education, poor health, unemployment and poverty. Improvement of their plight requires intensive government intervention. In fact, the government has intervened by launching programmes like the Minimum Needs Programme (MNP), Twenty Point Programme (TPP) and Bharat Nirman (see Chapter 11 for details).

Predominant Place of Agriculture in India's Economy

Agriculture is the single largest sector of India's economy. In 2005–06, it contributed about 18 per cent of India's gross domestic product (GDP) at current prices and 19 per cent at the 1999–2000 prices.² It is also the main source of livelihood for about two-thirds of India's population. Agricultural and rural development is, in fact, the *sine qua non* of national development. Therefore, a meaningful strategy of national development must have agricultural and rural development as one of its major planks.

GOALS OF RURAL DEVELOPMENT POLICY

Rural development policies are designed to improve the conditions under which the rural people work and live. The goals of policies are governed by what people desire, and the measures of policies by what people think the government can and ought to do to bring about the desired change. This is the theory of public policy. Changes are desired only when people do not like the way things are going. Pressure for public action arises when people feel that they, individually, cannot bring about the desired adjustments. They have in mind some norm or some image of an ideal situation towards which they strive. These norms become the goals of policy towards which the objectives of specific programmes are directed.

From the 'Directive Principles of State Policy' enshrined in India's Constitution, it is possible to derive two dominant goals of economic policy: first, increasing the national income; and second, improving the distribution of national income among the members of the society. These goals are reflected in India's economic policies that are enunciated in its five year plans. The goals which seek to achieve 'growth with equity' need to be seen in the context of the following four important dimensions of state policy. These are as follows:

1. The quality of life of the citizens.
2. The generation of productive employment.
3. Regional balance.
4. Self-reliance.

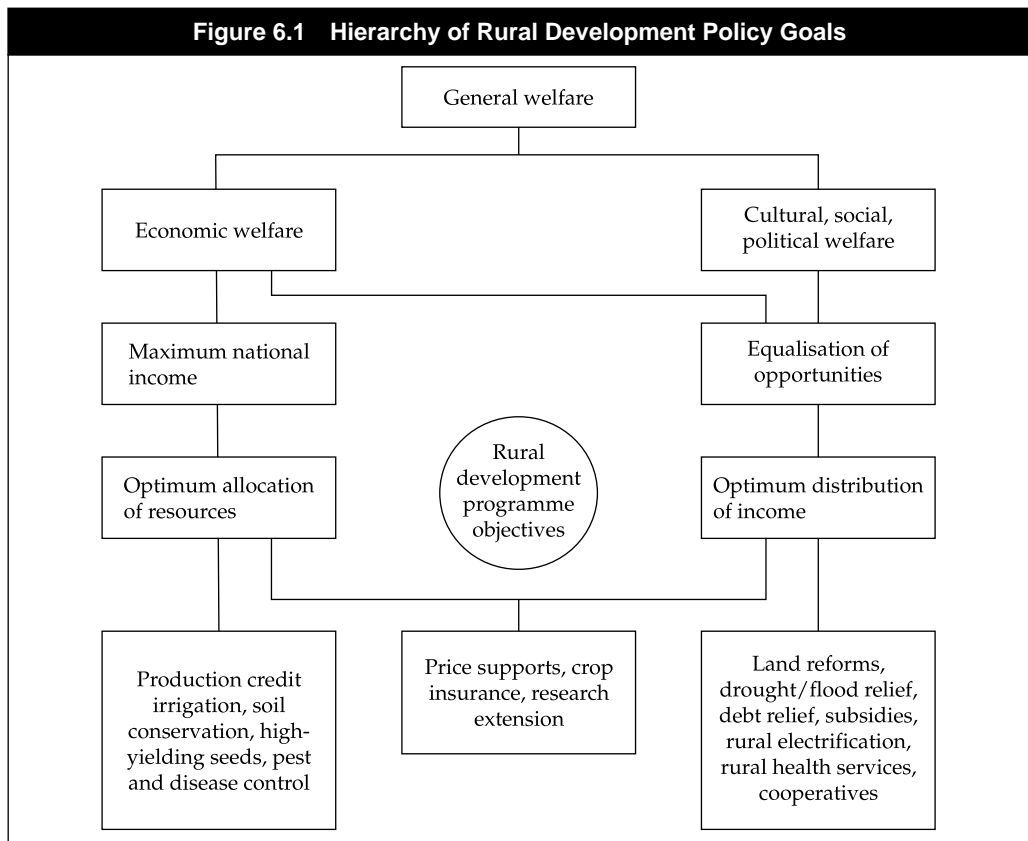
All these objectives seem to be worthwhile and, therefore, deserve serious pursuit by the policy makers. However, to be of any use to society, these objectives should be translated into specific programmes and projects that are manageable under the existing conditions. Many rural development policies are complex combinations of various goals, different sets of means or instruments, and are limited by various conditions. To understand such policies, we must break them down into several programmes or projects. For each programme, a clearly defined objective may be designated, which a particular government agency should pursue. The programme measures can then be identified and appraised as to whether they are appropriate and efficient in serving the objective, and adapted to the conditions outside the influence of that particular programme. These conditions are often the decisive factors determining whether or not a certain programme is 'administratively' feasible.

HIERARCHY OF POLICY GOALS

Given the multiplicity of policy goals, it is necessary to study the relationships among them and see that they converge towards public interest, or, at least, do not militate against it. This can be done if various policy goals and programme objectives are arranged in the form of a pyramid, as shown in Figure 6.1.

Descending the steps of the pyramid of policy goals from the lofty top of generality to the practical base of concrete issues would reveal the following hierarchy:

1. The master goal of economic policy is to promote general welfare, which comprises economic welfare, and cultural, social and political welfare. This master goal is served by two superior goals, namely, maximum national income, and equalisation of opportunities. The master goal and the superior goals together constitute the top level of the hierarchy.
2. Descending from the top level of the hierarchy, a series of goals is developed at a lower plane of generality. These goals deal with specific maladjustments in the various sectors of the economy, and may be called the central goals of the major national policies. Each of these central goals is still quite general in scope and complex in nature. For practical application, these goals have to be broken down further into more specific programme objectives directed at a great variety of situations, and concerning various groups of people, regions and commodities.
3. At the next level, we find the objectives of specific government programmes designed to correct maladjustments, or to remove the source of dissatisfaction suffered by certain groups of people. The central goal of agricultural policy, for instance, is broken down into various programme objectives assigned to irrigation, soil conservation and agricultural credit, marketing, research, education and extension.
4. We descend then to the lowest, most specific level of programme units, the objectives of which are relatively simple and clear-cut. These are supporting specific farm commodities at specific prices, making loans to farmers for specific purposes, inducing farmers to follow certain soil conservation practices, and developing dams and irrigation systems.



Source: Author.

The method of formulating programmes in which the objective and its means are clearly defined is indispensable for the study of policies. But the method is not simple to apply. Objectives become means and means become objectives, depending upon how one looks at them. Take, for example, the eradication of rural unemployment. From the viewpoint of the Union Ministry of Rural Development, it is an objective, and the means to accomplish it consist of budgetary allocation of funds, grants to NGOs, institutional credit and subsidies for the purchase of income-generating assets and rendering technical advice to the beneficiaries. From the viewpoint of the Planning Commission, eradication of rural poverty is a means of improving income distribution and equalising opportunities; those objectives again are means of improving social, cultural and economic welfare which, in turn, are means of attaining the master goal of general welfare. Thus, an objective in the context of a more specific programme appears as a means in a more general action system. In evaluating the appropriateness of means, we take the objective for granted; in order to evaluate the appropriateness of an objective, we must place it in the position of a means serving a superior end.

RURAL DEVELOPMENT POLICIES IN INDIA

Tinbergen (1952: 2) distinguishes between a qualitative policy and a quantitative policy. A qualitative policy seeks to change the economic structure through the creation of new institutions, modification of existing institutions and nationalisation of private firms. A quantitative policy seeks to change the magnitude of certain parameters; for example, change in the tax rate. An example which represents both qualitative and quantitative policy is the introduction of an education system free of charge, if previously tuition fees were charged. It is qualitative because it represents a change in the economic structure, and is quantitative because it represents a change in the fee, from something to zero.

Heady (1965: 15) classifies agricultural policies into development policies and compensation policies. A development policy seeks to increase the supply of commodities and resources, and to improve the quality of products and inputs. A compensation policy is aimed at compensating its target group in various manners—through subsidies, price support, and so on.

India has a long history of government intervention in the rural sector of its economy. In the pre-independence era, the British government intervention was aimed at promoting the export of food and raw materials to the Great Britain. There was no state policy for the development of resources of India for the welfare of its people. Introduction of a land tenure system, opening up of road and rail communications, and promotion of export trade in certain agricultural commodities were important measures taken by the British government. The other landmarks of that era were the creation of the Forest Department in 1864, and the Department of Agriculture in 1871, the appointment of the Royal Commission on Agriculture (RCA) in 1926, and the establishment of the Imperial (now Indian) Council of Agricultural Research in 1929. The report of the RCA was accepted as the basis for future development of agriculture in a conference convened by the Government of India in Shimla in October 1928. The report emphasised, *inter alia*, the importance of providing a minimum standard of life in villages and the modernisation of agriculture through research, extension and greater coordination of various departments dealing with agriculture, and development of cooperative institutions. However, due to the lack of financial resources and the Great Economic Depression (1929–30), many of the recommendations of the RCA could not be implemented.

In January 1946, the GoI issued a 'Statement of Agriculture and Food Policy in India', which spelt out the objectives to be achieved, the measures to be taken, and the respective roles of the centre and the provinces. According to the statement, the all-India policy was to promote the welfare of the people and to secure a progressive improvement of their standard of living (GoI 1976: 127–36).

Now we briefly discuss the salient features of major national level public policies in the field of agriculture and rural development.

National Forest Policy (NFP)

India is one of the few countries in the world that has had a forest policy since 1894. After independence, in recognition of the importance of forests in the national economy

and to ensure the best possible use of land, a new forest policy was enunciated in May 1952. The new policy provided, *inter alia*, that the area under forests should be at least one-third of the total geographical area, and that the forest areas should not be brought under cultivation of crops indiscriminately. The National Commission on Agriculture (NCA) (1976) recommended a further revision of the 1952 forest policy. The forest policy was revised in 1988. The main plank of the revised forest policy of 1988 is protection, conservation and development of forests. The salient features of the revised policy are as follows:

1. A minimum of one-third of the total land area of the country has to be brought under forest or tree cover.
2. Total protection of tropical rain/moist forests.
3. The extent of forest use for grazing and extraction will be determined on the basis of the carrying capacity of the forests.
4. Involvement of tribals/forest dwellers in protection, regeneration and development of forests to be encouraged.
5. Forest-based industries would have to raise their own plantations to meet their requirements, and the practice of supplying forest produce to industries at concessional rates would cease.

These principles are necessary to ensure that the forest area can increase from its present level of 75 million hectare (mha) to 110 mha (33 per cent of the total land area). The revised forest policy has several implications for various sectors of the economy like energy, industry and agriculture. Development projects now are carefully examined to ensure that the ecological balance is not destroyed. This is done through an assessment of their impact on the ecosystem.

However, in the past, India's forest policy has not been congenial to promoting a sustainable use and management of forest resources. The current policy also needs to be overhauled if the link between scarcity of forest resources and their prices is to be reestablished. Now that we are facing a growing scarcity of forest resources, forest product prices should be rising to slow down deforestation and accelerate reforestation. At present, not only are many of the forest products and services not priced at all, but even timber which is an internationally tradable commodity is priced below its true scarcity value due to implicit and explicit subsidies, and institutional failures. Forest concessions are typically inadequate to provide incentives for conservation and replanting. Failure to value non-timber goods and services results in excessive deforestation, conflicts with local communities, loss of economic value and environmental damage. Promotion of local processing of timber often leads to inefficient plywood mills, excess capacity, wastage of valuable tropical timber and loss of government revenues. Replanting subsidies often end up subsidising the conversion of a valuable natural forest to inferior monospecies plantations, with the associated loss of the value of both tropical hardwoods and biological diversity.

There is also need to adopt a better system of Forest Resource Accounting (FRA). The existing FRA system has several drawbacks. For example, there is no accounting of the free collection of fuel wood, grass and other non-wood forest products, benefits

from free grazing of animals in forest and a whole set of intangible benefits, such as soil and water conservation, maintenance of productivity of adjoining lands, biodiversity conservation, moderation of micro climate, carbon sequestration, release of oxygen, recreation, and so on. This leads to gross underestimation of the forestry sector to India's GDP. In view of this, there is need to adopt the new system of FRA.³

Further, in view of the rising demand for forest-based products, there is a need to pay far greater attention to increasing the productivity of forests and to their scientific management on modern lines. The NFP should rest on two pivotal points, namely, meeting the requirement of raw materials for the forest-based industries; small timber, fuel wood and fodder for the rural community; satisfying the present and future demands for protective and recreative functions of the forests and for environmental amenities. Social forestry and afforestation of wastelands should receive a very high priority.

In June 1990, the Union Ministry of Environment and Forests issued guidelines to the forest departments of all states and union territories, directing them to involve village communities and voluntary agencies for the regeneration of degraded forest lands on a usufruct sharing basis. Most of the state governments responded positively to the Ministry's directive, and launched what have come to be known as Joint Forest Management (JFM) programmes. The Ministry of Environment and Forests had issued fresh operational guidelines for the formulation of a new programme called the National Afforestation Programme (NAP) for the Tenth Five Year Plan (2002–07). These guidelines seek to encourage a participatory approach to the development of forests for the GoI-sponsored afforestation schemes. Afforestation schemes operational during the Ninth Five Year Plan have been merged in the new NAP so as to avoid multiplicity of schemes with similar objectives and to ensure uniformity in the funding pattern and implementation mechanism (see Chapter 11: 'Joint Forest Management [JFM] and National Afforestation Programme [NAP]' for details). The Tenth Five Year Plan provided for the universalisation of the JFM in the country.

Land Reforms Policy

To lay the foundation for a progressive rural society, it is necessary to reorder the agrarian structure. A sound land reforms policy can contribute significantly to agricultural and rural development, and therefore, deserves high priority. The land policy should be such that it ensures the scientific and intensive use of land, creates productive employment, reduces disparities in the distribution of land, provides incentives to increase the productivity of land, and induces changes in property relations and social structure, with a view to enabling the wider participation of landowners and tenants in the process of rural development. The agrarian structure should be based on peasant proprietorship, strengthened and supplemented by cooperative and joint farming systems, and backed by necessary supplies and services for optimum utilisation of land.

After independence, the GoI formulated a comprehensive national land reforms policy for the first time in the First Five Year Plan. The main objectives of the policy were to remove such impediments to the modernisation of agriculture as were innate in the

agrarian structure inherited from the past, and the reduction of gross inequalities in the agrarian economy and the rural society. It accorded a high priority to programmes that increased agricultural production, promoted diversification, reduced disparities in distribution of income and wealth, eliminated exploitation, and provided security to tenants and workers. This policy has been followed in all the subsequent five year plans with marginal reshuffling of the priorities of its components. Necessary land reform legislation has already been enacted by the state governments and is now in force. The policy and the programmes have been periodically reviewed and evaluated. One of the common findings of the reviews is that the implementation of the programmes has been lax. Many glaring gaps have occurred between the objectives of the policy and the legislation enacted to achieve them, and between the laws and their enforcement (Singh 1997: 152–55). The programmes, therefore, need to be implemented more rigorously than in the past. For optimum results, the programmes of land reforms, consolidation of fragmented landholdings, land development, irrigation and drainage, and acquisition of surplus land and its distribution should be integrated and executed properly. Special attention must be directed at the restoration of degraded common property land resources and their proper utilisation for the larger benefit of the rural masses. With the establishment of the National Wastelands Development Board (NWDB), it is hoped that some 100 mha of India's wastelands would be properly developed and utilised.

The National Agriculture Policy 2000 stipulated the following approach to land reforms:

1. Consolidation of holdings all over the country on the pattern of north western states.
2. Redistribution of ceiling surplus lands and waste lands among the landless farmers and unemployed youth with initial startup capital.
3. Tenancy reforms to recognise the rights of the tenants and sharecroppers.
4. Development of lease markets for increasing the size of the holdings by making legal provisions for giving private lands on lease for cultivation and agro-business.
5. Update and improvement of land records, computerisation and issue of land passbooks to the farmers.
6. Recognition of women's rights in land.

The rural poor will be increasingly involved in the implementation of land reforms with the help of panchayati raj institutions, voluntary groups, social activists and community leaders.

National Water Policy (NWP)

Water is the most critical natural resource affecting the level and pace of agricultural and rural development. Optimum development and efficient utilisation of water resources, therefore, assumes great significance. Nearly 36 per cent of the total gross cropped area in the country is irrigated, and the irrigated area contributes over 55 per cent of the total agricultural output. The Union Ministry of Water Resources is responsible for laying

down policies and programmes for the development and regulation of the country's water resources. India's first NWP was announced by the GoI in September 1987. It stressed that 'water is a prime natural resource, a basic human need and a precious national asset. Planning and development of water resources need to be governed by national perspectives' (GoI 1987). It recommended an integrated and multidisciplinary approach to planning, formulation and implementation of projects in such a way as to be able to meet the demands of water from various sectors and to free the country, as far as possible, from the scourge of recurring floods and droughts.

The NWP 1987 highlights the following points:

1. Need for efficient use of water.
2. Need for a well-designed information system.
3. Need for preservation of the quality of the environment and the ecological balance.
4. Periodic reassessment on a scientific basis of the groundwater potential, taking into account the quality of water available and the economic viability of its exploitation.
5. Integrated and coordinated development of surface water and groundwater, and their conjunctive use.
6. Equity and social justice considerations in water allocation.
7. Involvement of farmers in various aspects of water management, particularly water distribution and collection of water charges through water users' associations.

A new NWP was announced by the GoI in April 2002 (GoI 2002c). It also highlights the similar concerns as the first NWP. The Policy highlighted, *inter alia*, the need for the efficient use of water and for preservation of the quality of environment and ecological balance. This policy supersedes the 1987 Policy but it also echoes similar concerns.

The NWP 1987 and NWP 2002 do not clearly specify their goals, nor any operational guidelines as to how various provisions made in the Policy documents would be actualised. In view of this, we could say that the Policy framework is ineffective. In our opinion, its main goal should be to attain water security for all and for ever through restoring, developing, conserving, utilising and managing the surface water and groundwater resources of the country in the socially optimum and ecologically sound and sustainable way. Besides, the policy should have a legal backup and operational guidelines to achieve its objectives. Also, the government must accept the access to water for survival as a basic human right and include it in the set of development goals and use it as an entry point for development work. A minimum of 40 litres of water per capita per day is required for meeting personal consumption, hygiene and sanitation requirement (Water Supply and Sanitation Collaborative Council [WSSCC] 1999).

Agricultural Price Policy (APP)

Before independence, there was no semblance of an APP in India. After independence, the government introduced a price policy mainly to protect the interests of consumers,

by making available to them food at reasonable prices, that is, the policy was consumer oriented. A broad framework for a price policy was specified for the first time in the Terms of Reference of the Agricultural Prices Commission (later renamed as the Commission for Agricultural Costs and Prices [CACP]), which was set up in 1965 for evolving a balanced and integrated price structure. The Commission was required to keep in view the interests of both the producer and the consumer while formulating a price policy. The framework of the policy was reviewed and modified in 1980, and again, in 1986. The latest review was done in 1991, after India became a signatory to the new world trade arrangement, which, for the first time, included agriculture also. The new price policy for the agricultural sector aims at setting the prices right and withdrawing the subsidies on inputs, targeting the public distribution system (PDS) to only the poor, abolition of the food management system and liberalisation of trade in agricultural commodities.

The main objectives of the government's price policy for agricultural produce are:

1. to assure a remunerative and relatively stable price environment for farmers for inducing them to increase their production, and thereby augmenting the availability of food grains;
2. to improve the physical and economic access of the people to food; and
3. to evolve a production pattern which is in line with the overall needs of the economy.

Towards this end, minimum support prices (MSPs) for major agricultural products are announced each year, which are fixed after taking into account the recommendations of the CACP. The CACP, while recommending prices, takes into account all the important factors, such as

1. cost of production;
2. changes in input prices;
3. input/output price parity;
4. trends in market prices;
5. inter-crop price parity;
6. demand and supply situation;
7. effect on industrial cost structure;
8. effect on general price level;
9. effect on cost of living;
10. international market price situation; and
11. parity between prices paid and prices received by farmers (terms of trade).

Of all the factors, cost of production is the most tangible factor and it takes into account all operational and fixed costs. The government organises the Price Support Scheme (PSS) of the commodities through various public and cooperative agencies such as the Food Corporation of India (FCI), Cotton Corporation of India (CCI), Jute Corporation of India (JCI), National Cooperative Agricultural Marketing Federation of India (NAFED) and Tobacco Board, for which the MSPs are fixed. For commodities not covered under PSS, the government also arranges for market intervention on specific

request from the states for specific quantity at a mutually agreed price. The losses, if any, are borne by the centre and the state on 50:50 basis. The price policy has paid rich dividends. The government has raised substantially the MSPs in recent years. Food and input subsidies have been used as complementary instruments of the APP. Contrary to the general impression that the price support programme, and input and food subsidies have benefited only a few crops and farmers in only some regions, it is now well established that these instruments have played an important role in achieving the objectives of food security and accelerated growth of the economy, and have benefited all the sections of society (Acharya 1997: 26).

At present, 25 agricultural commodities are covered under the MSP programme. Besides, some other commodities like onions, potatoes and ginger are included under the Market Intervention Scheme (MIS). The FCI, which has been the nodal agency for implementing the price support policy for rice and wheat, was entrusted with the work of price support for coarse cereals also. As regards targeting the poorer sections, a revamped PDS was launched in 1992 with a view to extending the coverage of distribution of specially subsidised food grains to the population living in hilly and arid areas also.

It is important for rural development that the overall relationship between input and output prices within agriculture, and the terms of trade between agriculture and other sectors of the economy be such that growth is stimulated in the rural areas. The major aim of an APP should be to correct market distortions, which are generally socially harmful. Being parts of the same policy, the interests of the producer should be safeguarded through price support (above the market price) operations when there is a sharp fall in market prices, and the interests of the consumers, particularly the vulnerable sections of the population, should be protected through distribution of food grains and other basic necessities at a fair price (below the market price) when there is a sharp rise in market prices. Since the MSP is expected to take into account changes in input prices, widespread use of input subsidy as an incentive to increase the production should, by and large, be avoided except in the case of small and marginal farmers, and difficult areas. In the latter case, a transport subsidy will be more appropriate.

The National Agriculture Policy 2000 stipulates that the central government will continue to discharge its responsibility to ensure remunerative prices for agricultural produce through the announcement of MSPs policy for major agricultural commodities. The food, nutrition, and other domestic and exports requirements of the country will be kept in view while determining the support prices of different commodities. The price structure and trade mechanism are continuously reviewed to ensure a favourable economic environment for the agricultural sector and to bring about an equitable balance between the rural and the urban incomes. The methodology used by the CACP in arriving at estimates of costs of production is periodically reviewed. The price structure of both inputs and outputs are monitored to ensure higher returns to the farmers and bring about cost effectiveness throughout the economy. Domestic market prices are closely monitored to prevent distress sales by the farmers. The government intends to enlarge the coverage of futures markets to minimise the wide fluctuations in commodity prices as also for hedging their risks. The endeavour will be to cover all important agricultural products under futures trading in course of time.

Rural Credit Policy

India has a long history of government intervention in the rural credit market. Duly recognising the need for providing institutional credit to cultivators to protect them from the exploitation of private moneylenders and traders, the GoI started granting loans to the cultivators under: (a) the Improvements Loans Act of 1883; and (b) the Agriculturists' Loans Act of 1884. Such loans are called *taccavi* loans. The act of 1883 authorises the grant of long-term loans for effecting permanent improvements on land. Under the act of 1884, short- and medium-term loans are granted to meet the current agricultural needs, such as purchase of seeds, fertilisers, and small tools and implements. The record of *taccavi* loans has been rather poor. Some of the drawbacks are inadequate amount, inordinate delays in sanctioning the loans, lack of supervision, poor recovery and lack of coordination.

The Reserve Bank of India (RBI) and the National Bank for Agriculture and Rural Development (NABARD) have both played a very important role in shaping the rural credit policies of India, and in building its rural economy through institutional credit. The rural credit policy has been reviewed by a number of committees from time to time. The following are the major landmarks in the history of the evolution of India's rural credit policy:

1. The Cooperative Credit Societies Act of 1904.
2. All-India Rural Credit Survey Committee (1954): Introduction of three-tier cooperative credit structure and state participation in the equity of cooperatives.
3. All-India Credit Review Committee (1969): Multi-agency approach with the entry of commercial banks in the field of rural credit.
4. Nationalisation of 14 commercial banks in 1969.
5. Nariman Committee 1971: Priority sector lending and Lead Bank Scheme.
6. Introduction of Differential Rate of Interest (DRI) Scheme 1972.
7. Narasimham Committee 1975: Regional Rural Banks (RRBs) were set up.
8. Committee to Review Arrangements for Institutional Credit for Agricultural and Rural Development, 1981 (CRAFICARD): NABARD was set up in 1982.
9. Agriculture Credit Review Committee 1989: A new credit policy was formulated.
10. Agricultural and Rural Debt Relief Scheme 1990.
11. Narasimham Committee 1991: Financial Sector reforms were introduced.

Cooperative credit societies were the first of all types of cooperatives established in India, with the objective of liberating the poor cultivator from the clutches of the moneylender through providing adequate credit on easy terms. The credit cooperatives have played an important role in providing credit to the farmers and they occupy a significant place in India's rural credit system. In 2005–06, they accounted for about 24 per cent of the total institutional credit supply in the rural sector; their share has declined from about 40 per cent in 1999–2000 to about 24 per cent in 2005–06. Besides, their main objective also remains, by and large, unfulfilled even after more than 100 years of their existence in India. They suffer from many financial, organisational, managerial and legal constraints. Their limited ability to mobilise resources, low levels of recovery,

high transaction costs, frequent suspension of recovery, low administered interest rates, government controls, and political interference in their business and management affairs have all taken a heavy toll on their viability and sustainability. There is need to liberate them from these constraints, and revamp the cooperative credit structure to make it viable, vibrant and robust enough to face the challenges posed by the new economic policy of liberalisation and privatisation. Otherwise, most of the credit cooperatives will have to die sooner or later.

The present credit policy needs to be reoriented, so that a package of all essential financial services is provided to the needy rural people to enable them to adopt new technologies, and thereby enhance their income and socio-economic condition. Greater flexibility in timing the repayment of loans is also needed. In a nutshell, rural credit institutions should try to copy those practices of the private moneylenders that make them so popular even now, that is, after 60 years of independence.

The National Agriculture Policy 2000 asserts that progressive institutionalisation of rural and farm credit will be continued for providing timely and adequate credit to farmers. The rural credit institutions will be geared to promote savings, investments and risk management. Particular attention will be paid to the removal of distortions in the priority sector lending by commercial banks for agriculture and rural sectors. Special measures will be taken for the revamping of cooperatives to remove the institutional and financial weaknesses, and evolving simplified procedure for sanction and disbursement of agricultural credit. The endeavour will be to ensure distribution equity in the disbursement of credit. Microcredit will be promoted as an effective tool for alleviating poverty. Self-help groups and Bank linkage system, suited to the Indian rural sector, will be developed as a supplementary mechanism for bringing the rural poor into the formal banking system, thereby improving banks outreach and the credit flows to the poor in an effective and sustainable manner.

National Agriculture Policy

The Government of India had announced a National Policy on Agriculture in July 2000. This could be considered as a formal pronouncement of the GoI's latest national agricultural policy. The policy seeks to promote technically sound, economically viable, environmentally non-degrading and socially acceptable use of country's natural resources—land, water and genetic endowment—to promote sustainable development of agriculture. Measures are proposed to be taken to contain biotic pressures on land and to control indiscriminate diversion of agricultural lands for non-agricultural purposes. The unutilised wastelands are to be put to use for agriculture and afforestation.

Over the next two decades, the Policy aims at attaining:

1. growth rate in excess of 4 per cent per annum in the agricultural sector;
2. growth that is based on efficient use of resources and conserves our soil, water and biodiversity;
3. growth with equity, that is, growth which is widespread across regions and farmers;

4. growth that is demand driven and caters to domestic markets, and maximises benefits from exports of agricultural products in the face of the challenges arising from economic liberalisation and globalisation; and
5. growth that is sustainable technologically, environmentally and economically.

The highlights of National Agriculture Policy are presented in Box 6.1 and a brief description follows.

Box 6.1 Highlights of National Agricultural Policy 2000

1. Sustainable Agriculture
2. Food and Nutritional Security
3. Animal Husbandry and Fisheries Development
4. Generation and Transfer of Technology
5. Inputs Management
6. Incentives for Agriculture
7. Investments in Agriculture
8. Institutional Structure
9. Risk Management
10. Management Reforms

Source: GoI 2002.

Sustainable Agriculture

The policy will seek to promote technically sound, economically viable, environmentally non-degrading and socially acceptable use of the country's natural resources—land, water and genetic endowment—to promote sustainable development of agriculture. Measures will be taken to control indiscriminate diversion of agricultural lands for non-agricultural purposes.

Food and Nutritional Security

Special efforts will be made to raise the productivity and production of crops to meet the increasing demand for food generated by unabated demographic pressures and raw materials for expanding agro-based industries. A regionally differentiated strategy will be pursued, taking into account the agronomic, climatic and environmental conditions to realise the full growth potential of every region.

Animal Husbandry and Fisheries Development

Development of animal husbandry, poultry, dairying and aqua-culture will receive a high priority in the efforts for diversifying agriculture, increasing animal protein availability in the food basket and for generating exportable surpluses. A national livestock breeding strategy will be evolved to meet the requirements of milk, meat, egg and livestock

products, and to enhance the role of draught animals as a source of energy for farming operations and transport.

Generation and Transfer of Technology

A very high priority will be accorded to evolving new location specific and economically viable improved varieties of agricultural and horticultural crops, livestock species and aquaculture, as also conservation and judicious use of germplasm and other biodiversity resources. The regionalisation of agricultural research, based on identified agro-climatic zones, will be accorded high priority. Application of frontier sciences like biotechnology, remote sensing technologies, pre- and post-harvest technologies, energy saving technologies, technology for environmental protection through national research system as well as proprietary research will be encouraged. The endeavour will be to build a well-organised, efficient and result-oriented agricultural research and education system to introduce technological changes in Indian agricultural. Upgradation of agricultural education and its orientation towards uniformity in education standards, women empowerment, user-orientation, vocationalisation and promotion of excellence will be the hallmark of the new policy.

Inputs Management

Adequate and timely supply of quality inputs such as seeds, fertilisers, plant protection chemicals, bio-pesticides, agricultural machinery and credit at reasonable rates to farmers will be the endeavour of the government. Soil testing and quality testing of fertilisers and seeds will be ensured and supply of spurious inputs will be checked. Balanced and optimum use of fertilisers will be promoted together with use of organic manures and bio-fertilisers to optimise the efficiency of nutrient use.

Incentives for Agriculture

The government will endeavour to create a favourable economic environment for increasing capital formation and a farmer's own investments by removal of distortions in the incentive regime for agriculture, improving the terms of trade with manufacturing sectors and bringing about external and domestic market reforms, backed by the rationalisation of domestic tax structure. It will seek to bestow on the agricultural sector, in as many respects as possible, benefits similar to those obtaining in the manufacturing sector, such as easy availability of credit and other inputs, and infrastructure facilities for development of agri-business industries, development of effective delivery systems and freeing movement of the agro-produce.

Investments in Agriculture

The agricultural sector has been starved of capital. There has been a decline in the public sector investment in the agricultural sector. Public investment for narrowing regional

imbalances, accelerating development of supportive infrastructure for agriculture and rural development, particularly rural connectivity, will be stepped up. Input subsidy reforms will be pursued as a combination of price and institutional reforms to cut down the costs of these inputs for agriculture. Resource allocation regime will be reviewed with a view to rechannelising the available resources from support measures towards asset formation in rural sector. Private sector investments in agriculture will also be encouraged more particularly in areas like agricultural research, human resource development, post-harvest management and marketing.

Institutional Structure

Indian agriculture is characterised by the predominance of small and marginal farmers. Institutional reforms will be so pursued as to channelise their energies for achieving greater productivity and production. The reforms will include, *inter alia*, consolidation of holdings all over the country on the pattern of north-western states; private sector participation through contract farming and land leasing arrangements; progressive institutionalisation of rural and farm credit for providing timely and adequate credit to farmers; active support for the promotion of cooperative form of enterprise and ensure greater autonomy and operational freedom to them to improve their functioning; and amendment and strengthening of the legislative and regulatory framework appropriately to achieve these objectives.

Risk Management

Despite technological and economic advancements, the condition of farmers continues to be unstable due to natural calamities and price fluctuations. National Agriculture Insurance Scheme (NAIS) covering all farmers and all crops throughout the country with built-in provisions for insulating farmers from financial distress caused by natural disasters and making agriculture financially viable, will be made more farmer specific and effective. An endeavour will be made to provide a package insurance policy for the farmers, right from the sowing of the crops to post-harvest operations, including market fluctuations in the prices of agricultural produce.

Management Reforms

Effective implementation of policy initiatives will call for comprehensive reforms in the management of agriculture by the Central and state governments. The Central Government will supplement/complement the state governments' efforts through regionally differentiated work plans, comprising crop/area/target-group specific interventions, formulated in an interactive mode and implemented in a spirit of partnership with the states. The central government will move away from a schematic approach to a macro-management

mode and assume a role of advocacy, articulation and facilitation to help the states in their efforts towards achieving accelerated agricultural development.

National Policy on Cooperatives

The cooperative movement in India traces its origin to the agriculture and allied sectors, and was originally evolved as a mechanism for pooling people's meagre resources with a view to providing them the advantages of the economies of scales. The first attempt to institutionalise the cooperatives began with the enactment of the Cooperative Credit Societies Act, 1904, the scope of which was subsequently enlarged by the more comprehensive Cooperative Societies Act of 1912. Under the Government of India Act, 1919, the subject of cooperation was transferred to the then provinces, which were authorised to enact their own cooperative laws. Under the Government of India Act, 1935, cooperatives remained a provincial subject. Presently, the item 'Cooperative Societies' is a state subject under entry 32 of the State List of the Constitution of India. The Cooperative Societies Acts enacted by state governments are now in place in the states.

In order to administer the operations of cooperative societies where membership was from more than one province, the GoI enacted the Multi-Unit Cooperative Societies Act, 1942, which was subsequently replaced by the Multi-State Cooperative Societies Act, 1984, under entry 44 of the Union List of the Constitution of India.

In the pre-independence era, the government did not play an active role in the promotion and development of cooperatives. After independence, the advent of planned economic development ushered in a new era for the cooperatives. Cooperation came to be regarded as a preferred instrument of planned economic development and emerged as a distinct sector of the national economy. It was specifically stated in the First Five Year Plan document that the success of the plan should be judged, among other things, by the extent to which it was implemented through cooperative organisations. In the 1960s, special importance was attached to achieving an increased agricultural production as well as rural development through cooperatives. A significant development on the agricultural front, during 1966–71, was the implementation of a new agricultural strategy, the Green Revolution, which was aimed at achieving self-sufficiency in food. The introduction of high-yielding and hybrid varieties of seeds and the allocation of large outlays for the provision of irrigation facilities and adequate application of farm inputs led to a manifold increase in the role of cooperatives. Thus, Green Revolution gave a big boost to the activities of the cooperative societies, increased agricultural production and enhanced productivity, necessitated an emphasis on value-addition in the agricultural produce, and marketing and storage, and the development of allied sectors. As a result, specialised cooperative societies in the fields of milk, oil seeds, sugarcane, cotton, agro-processing, and so on, were set up. Many large cooperatives emerged in the fields of fertiliser manufacture and marketing of agricultural produce. The role of cooperatives, thus, no longer remained confined to their traditional activities and expanded to new economic ventures as in the case of other such enterprises in the public or the private sector.

The role of cooperatives has acquired a new dimension in the changing scenario of globalisation and liberalisation of the nation's economy. Internal and structural weaknesses of these institutions combined with the lack of proper policy support have neutralised their positive impact. There are wide regional imbalances in the development of the cooperatives in the country. Notwithstanding their achievements and their phenomenal growth, cooperatives are beset with several financial, organisational and management constraints and problems. In view of this, there is an urgent need for restructuring them. They are also in search of a new direction and a new strategy for their survival and growth in the changing national and international economic environment.

This has necessitated the need for a clear-cut national policy on cooperatives to enable sustained development and growth of healthy and self-reliant cooperatives for meeting the sectoral/regional aspirations of the people in consonance with the principles of cooperation. In this connection, it is also imperative to address the issues which require to be attended to by evolving a suitable legislative and policy support to these institutions.

In view of the state of cooperatives described above, the GoI announced a National Policy on Cooperatives in April 2002. The Policy is an integral part of the concerted efforts of GoI to create a congenial environment for cooperatives through appropriate policy measures and legislative support with a view to revitalising them. Some salient features of the Policy are briefly described in this section (GoI 2002d). This augurs well for the millions of rural poor producers and consumers in the country. However, to impart credibility to them, the commitments of the GoI need to be institutionalised through the passage of an appropriate (model) central cooperative law. It is hoped that the government will implement the new Policy faithfully and honour its commitment to action. Then only will the good intentions of the government will fructify.

The main objective of the National Policy is to facilitate the all round development of the cooperatives in the country. Under this Policy, cooperatives would be provided necessary support, encouragement and assistance, so as to ensure that they work as autonomous, self-reliant and democratically managed institutions accountable to their members and make a significant contribution to the national economy, particularly in the areas which require people's participation and community efforts. This is all the more important in view of the fact that still a sizeable segment of the population in the country is below the poverty line and the cooperatives are the only appropriate mechanism to lend support to this section of the people.

The Policy seeks to achieve its objectives mainly through several measures, including the following:

1. Ensuring the functioning of the cooperatives based on the basic cooperative values and principles as enshrined in the declaration of the International Cooperative Alliance Congress, 1995.
2. Revitalisation of the cooperative structure, particularly in the agricultural credit subsector.
3. Reduction of regional imbalances through provision of support measures by the central/state governments, particularly in the underdeveloped states/regions, where cooperatives are weak.

4. Strengthening of the cooperative education and training.
5. Professionalisation of management of cooperatives through human resource development.
6. Greater participation of members in the management of the cooperatives and promoting the concept of user members.
7. Amendment/removal of the provisions in cooperative laws, which seek to unnecessarily restrict and regulate the functioning of cooperatives as autonomous organisations.

The GoI proposes to formulate a timebound plan of action for implementation of the policy and back it up with adequate budgetary support in cooperation with the state governments and other concerned agencies including federal/national level cooperative organisations.

The policy commitments of the GoI to do certain things and not to do certain other things are also laudable. But as the saying goes, the taste of pudding is in eating it. So it is the implementation of the Policy and its impact on cooperatives and their stakeholders that will determine how good or bad the Policy is. We would suggest the following steps to improve the chances of the Policy being effective and successful in achieving its objectives: First, a time limit should be set for formulating 'a timebound plan of action for implementation.' Second, a few reputed national-level organisations would have to be identified and designated as 'Policy Implementing Agencies' (PIA). For example, the National Dairy Development Board (NDDB) could be designated as the PIA for dairy cooperatives, NABARD for credit cooperatives, and the National Cooperative Development Corporation (NCDC) for marketing and processing cooperatives.

Policies for Fishery Development

Until the first national policy for managing (marine) fisheries was announced in 2004, there was no national fisheries policy in India. However, the GoI had sought to increase fish production in the country through several research and development programmes. More specifically, the GoI had established several fisheries research institutes under the aegis of the Indian Council of Agricultural Research (ICAR) to undertake research for development of composite fish culture and induced breeding technologies, and to promote their adoption. Besides, it also launched a national level programme, Fish Farmer Development Agency (FFDA) in 1976 with initial assistance from the World Bank to promote aqua-culture in the country. The FFDA provided technical, financial and extension support to fish farmers for taking up culture fishery in common pool village ponds and tanks.

The Union Ministry of Agriculture has also paid due attention in the past decade to the development of deep-sea fisheries in the country. The declaration of an Exclusive Economic Zone (EEZ) in 1976 facilitated the exploration, exploitation and utilisation of marine living resources in the sea around India extending to 200 nautical miles, thereby

giving the nation immense opportunities and challenges to harvest the resources and manage them on a sound scientific basis. The past three decades have witnessed rapid initiatives by the government and private agencies in the marine fisheries sector of the country. Upon realising that most of the deep-sea fishery resources beyond the conventional fishing limit and fishing capability of the indigenous craft can be gainfully exploited only if the upgraded and sophisticated vessels of adequate size and capabilities were inducted into the fishery, the GoI facilitated the mobilisation of capital and expertise indigenously to address this issue in the 1981 Charter Policy.

After the expiry of five years of operation of this Policy, the government revised the Policy to rectify the deficiencies noticed during its operation and to make it more beneficial to the country. Accordingly, a revised 1986 Charter Policy was pronounced. This Charter Policy envisaged acquisition of vessels by the Indian companies either through import/construction in India or through joint ventures. As a result of the Charter Policy, 97 companies were permitted to operate 311 foreign fishing vessels. Besides augmenting the marine fish production in the country, the Policy also facilitated greater inflow of foreign exchange through export of fish caught by these vessels. All these vessels were operating on 100 per cent Export Oriented Units (EOU) basis. The conditions for the acquisition of vessels of adequate type and number by the Indian companies who chartered vessels helped the growth of Indian deep-sea fishing fleet within a short span of time.

Having laid the foundation for the Indian deep-sea fishing industry, the government went ahead to broad base the initiatives through the Deep Sea Fishing Policy (DSFP) 1991. This policy envisaged to promote joint ventures, test fishing and leasing, besides allowing the vessels chartered under 1986 policy to operate till the validity of their permits lasted. From the beginning of 1994, the DSFP was criticised by various fishermen groups, Members of Parliament (MPs) and Members of Legislative Assemblies (MLAs), mechanised fishing vessel owners, fish processors and other stakeholders. The fishermen groups also resorted to agitation stating that their operational area is being encroached upon by the larger vessels operating under charter, joint ventures and lease arrangements. In response to those criticisms and agitations, the GoI appointed a committee to review the deep-sea fishing policy. The committee submitted its report in 1996. The government accepted all the 21 recommendations of this committee with minor modifications. Consequently, the government rescinded all the earlier policies on deep-sea fishing. It was also decided that the fishing policies of the government should be revised from time to time. Subsequently, the GoI constituted a few other committees in order to gather inputs on the availability of the fishing craft, status of marine fishing resources, issues relating to the various stakeholder groups, and so on, and announced its first Marine Fishing Policy (MFP) in 2004 (GoI 2004c).

The 2004 Policy seeks to address the concerns of the traditional and coastal fishermen together with those of the other stakeholders in the deep-sea sector so as to achieve harmonised development of marine fishery both in the territorial and extra-territorial waters of the country. The rationale of the Policy is enshrined in the National Agriculture Policy promulgated by the GoI in 2000.

The Policy objectives are:

1. to augment marine fish production of the country up to the sustainable level in a responsible manner so as to boost the export of sea food from the country and also to increase per capita fish protein intake of the masses;
2. to ensure socio-economic security of the artisanal fishermen whose livelihood solely depends on this vocation; and
3. to ensure sustainable development of marine fisheries with due concern for ecological integrity and biodiversity.

Some of the salient features of the 2004 Policy relevant to fishery resources management and environmental conservations are as follows:

Resource Management

In view of the over-exploitation of living resources within 50-metre-deep zone, the Policy stipulates the adoption of a stringent fishery management system. In particular, it provides for the following measures:

1. There would be a review of the Marine Fishing Regulation Acts (MFRAs) of coastal states and the Union Territories of India to ensure that they have adequate provisions for management of resources and fishing operations; if necessary, a fresh model bill on coastal fisheries development and management could also be proposed.
2. All existing boat-building yards shall be registered and construction of any new fishing units will be permitted only after obtaining a licence. Standards for fishing vessel construction and registration, and for training, certifications and keeping watch over fishing vessel personnel would be fixed and enforced through a new legislation.
3. There will be a 'closed season' mandate promulgated in both the coasts, the duration of which would be decided by a designated authority. Such closed seasons shall be uniform for neighbouring states unless the geographic or climatic conditions warrant deviations. This would be supplemented by a strict ban on all types of destructive methods of fishing and regulation of mesh sizes in different parts of the fishing gear. The designated authority would be competent to declare any method as destructive after it is convinced so based on facts and data pertaining thereto. Penalties would be fixed for violations of mesh regulations;
4. The designated authority would, if necessary, decide the quota for different classes of fishing vessels in any region.
5. Catching of juveniles and non-targeted species and discarding less preferred species once they are caught would be strictly prohibited through legislation.
6. Posting of observers on commercial fishing vessels and enforcing monitoring control and surveillance (MCS) system would be ensured.
7. A resource enhancement programme will be taken up on priority. This would include setting up of multispecies hatcheries for producing seed as required for sea ranching. Designating certain areas as marine sanctuaries and regulating the

capture of brood stock from these locations would be implemented. Besides, open sea cage culture would be promoted to rear or fatten commercially important species of fishes.

Environmental Concerns

Since they are the final destination for most of the wastes—solid, liquid, radioactive or otherwise—seas are getting more and more polluted over time. This adversely affects the health and productivity of living resources. Such adverse environmental effects of human activities on oceans need to be minimised. Besides, health hazards due to consumption of fish harvested from contaminated water is also becoming a matter of great concern in many parts of the world. The agencies responsible for legislation relating to environmental pollution will be urged to implement them more stringently, so that the impact of pollution on fisheries can be minimised.

The fishermen as the main stakeholder of the marine environment have to be sensitised about the growing land-based pollution. They also need to be educated about eco-friendly fishing practices, which would cause the least disturbance to the marine ecosystem including mangroves. Consumers also need to be protected from the deleterious effects of consuming fish contaminated with heavy metals and other hazardous chemicals discharged from industrial establishments. The 2004 Policy, therefore, lays stress on the following aspects:

1. In order to minimise the impact on coastal waters of industrial effluents, the central and state pollution control boards will need to work in harmony and consider enacting suitable legislation for all industrial establishments discharging effluents into the sea. Such regulations should provide for mandatory inclusion of the Hazard Analysis and Critical Control Points (HACCP) in effluent discharge systems.
2. Coastal area protection by planting mangroves with a view to producing nurseries for shrimp and fish would be introduced as a participatory programme with the active involvement of coastal people, particularly in the fishing community.
3. The Coastal Regulation Zone (CRZ) notification would review the present zonation of areas keeping in view the topography of each region and ensure that any human activity in the high tide limit (HTL), which may cause degradation of the coastal environment is not permitted.
4. The Policy provides, among other things, for India's participation in the Regional Fisheries Management Bodies (RFMB) to ensure greater cooperation amongst the neighbouring countries in the region.

Infrastructure Development

Development of infrastructure for marine fisheries is of vital importance and requires an integrated approach. The Policy provides for creation of such facilities as jetties, landing

centres, provision for fuel, water, and ice, and repair of vessels and gear. For this purpose, a master plan for development of infrastructure for the next 10 years would be drawn up. Besides, alternatives to the present system of financing of the infrastructure projects by the centre and the state with cost sharing through 'Build-Operate-Own' and 'Build-Operate-Transfer' systems would be explored.

Areas such as use of information technology, strengthening of database in marine fisheries, human resource development and ecolabeling of marine products would also be paid needed attention.

The 2004 Policy has, however, a few drawbacks. For example, it does not clearly state any long-term vision for the fisheries sector. Similarly, it does not specify any particular organisational structure or management system for implementing the Policy and monitoring its progress, nor has it a coherent vision of genuine decentralised governance and grassroots empowerment. Also, no specific instruments have been identified for achieving the objectives of the policy. Last but not the least, there is no mention of gender in the entire policy document. This is despite the fact that fisherwomen play an active and important role in grading, processing and marketing of fish locally.

But notwithstanding these drawbacks, we could say that MFP 2004 is a good step in the direction of regulating over-fishing and marine fishery resources management. But the policy needs to be implemented faithfully using appropriate instruments and involving all major stakeholders, particularly fishermen and fisherwomen through their representatives and organisations.

National Policy for Farmers (NPF)

The NPF as recommended by the National Commission on Farmers (NCF) has 10 major goals (Box 6.2) (GoI 2006d).

Box 6.2 Objectives of National Policy for Farmers

1. Improve the economic viability of farming by ensuring that farmers earn a 'minimum net income' and ensure that agricultural progress is measured by the advance made in improving that income.
2. Mainstream the human and gender dimension in all farm policies and programmes, and give explicit attention to sustainable rural livelihoods.
3. Complete the unfinished agenda in land reforms and to initiate comprehensive asset and aquarian reforms.
4. Develop and introduce a social security system and support services for farmers.
5. Protect and improve the land, water, biodiversity and climate resources essential for sustained advances in the productivity, profitability and stability of major farming systems by creating an economic stake in conservation.
6. Foster community-centred food, water and energy security systems in rural India and to ensure nutrition security at the level of every child, woman and man.

(Box 6.2 continued)

(Box 6.2 continued)

7. Introduce measures which can help to attract and retain youth in farming by making it both intellectually stimulating and economically rewarding, by conferring the power and economy of scale to small and marginal farmers both in the production and post-harvest phases of farming.
8. Strengthen the biosecurity of crops, farm animals, fish and forest trees for safeguarding both the work and income security of farmer families, and the health and trade security of the nation.
9. Restructure agricultural curriculum and pedagogic methodologies for enabling every farm and home-science graduate to become an entrepreneur and to make agricultural education gender sensitive.
10. Make India a global outsourcing hub in the production and supply of the inputs needed for sustainable agriculture, and products and processes developed through biotechnology, and information and communication technology.

Many of the recommendation made by the NCF are similar to those incorporated in National Agriculture Policy 2004. What is needed most now is the faithful implementation of the recommendations made by the NCF and contained in the National Agriculture Policy. But in the absence of requisite administrative and management reforms in the existing system, there is little hope of any better implementations of these recommendations also.

GLOBALISATION AND RURAL DEVELOPMENT

After the launching of the New Economic Policy (NEP) in India in August 1991, a process of privatisation, deregulation and globalisation has been set in motion. The statist model of rural development characterised by the predominant role of the state in initiating, fostering and directing rural development is likely to be abandoned, giving way to a market-driven and guided model. It has become fashionable once again these days to believe that a greater reliance on market forces and the integration of national economies within a global economy—that is, globalisation—would reduce the problems of poverty and unemployment through speeding up the pace and level of economic growth. Furthermore, this new faith in market forces has also led to a reorientation of international development policies more in favour of liberal trade than aid as an instrument of development. But despite all this, there is a nagging doubt among the majority of development scholars and practitioners about the relevance of the new model for developing countries like India, where a very large section of population is below the poverty line, and hence, outside the influence zone of market forces.

Indian agriculture has been protected from the influence of international market forces, mainly through a system of quantitative restrictions on the import of some 800 agricultural commodities. Now that India is a member of the World Trade Organisation (WTO) and a signatory to the Uruguay Round of General Agreement on Trade and Tariffs (GATT), we

are under an obligation to replace non-tariff measures (quantitative restrictions/quotas) by reasonable levels of tariffs. Consequently, all quantitative controls on the import of merchandise have been done away with and import tariffs on non-agricultural goods have been reduced from 300 per cent in 1991–92 to 125 per cent in 2006–07. There are apprehensions that the liberalisation of agricultural imports would hit our farmers and impair the growth prospects of the agricultural sector. According to a study conducted by Chand (1997: 1–6), liberalisation of international trade in agricultural commodities may have the following major impacts on producers and consumers:

1. Removal of quantitative restrictions on international trade is expected to promote both imports and exports of agricultural commodities and production inputs. This would speed up the pace of commercialisation and specialisation on the basis of higher comparative advantage in the agricultural sector. Export orientation of agricultural production could necessitate the use of increased quantities of chemical fertilisers, pesticides and irrigation water, which would adversely affect the quality of the environment, unless adequate safeguards, such as the use of biofertilisers and biopesticides, provision of recharging of groundwater aquifers in water scarce areas, and of drainage in water-surplus waterlogged areas are taken.
2. Liberalisation of international trade in agricultural commodities would pave the way for the entry of private companies and corporations in the import business, which at present is monopolised by government organisations, which are the sole canalising agencies for imports of many commodities. Agricultural producers and consumers would be affected through changes in prices—producers from higher prices, and consumers from lower and/or better quality—due to increased competition and consequent increased efficiency.
3. Importers would have an advantage over domestic producers if the agricultural sector is not liberated from internal restrictions. Furthermore, government controls and intervention in the sector need to be reduced, to encourage greater participation of the private sector in processing, marketing and distribution.

Like any other economic phenomenon, globalisation is based on a set of values, such as competitiveness, efficiency, wealth accumulation and the free play of market forces. Globalisation of business and trade without a global view of the society as a global family would lead to social tensions and economic strife, and this is what is happening today in many developing countries which have adopted the structural adjustment programmes. In the paradigm of globalisation, there is no place for such values as sympathy, kindness, compassion, world-brotherhood, cooperation, and so on. Because of the relatively easy flow of capital internationally as compared to labour, capitalists/portfolio investors would benefit the most from globalisation. This would aggravate the problem of disparities in income and wealth between the rich and the poor. Further, globalisation would also engender corruption, black money and other social evils, as portfolio investors would like to keep the bureaucrats and politicians on their side by bribing them. Besides, the powerful and rich countries define and redefine the rules of the game of globalisation to suit their own national interests or the vested interest of their capitalist investors.

This leads to clashes of interest and financial instability, as has been recently experienced in several East Asian countries.

It is clear that globalisation is good for only a fraction of Indian society—may be the top 10 per cent of the people. The number of people who are likely to lose—or are already losing—from globalisation, has been increasing, particularly in those poor countries which are outside North America, Europe and the Pacific Rim. But the issue is not whether globalisation is good or bad, or whether it is inevitable. We should understand that globalisation is here and that we are unavoidably part of the process of globalisation, which demands a new focus and a restructuring and re-engineering of our polity and economy. The questions to be asked are: What can we do about it? How could we benefit from it?

The current opposition of farmers, workers, women and environmentalists to globalisation in both developed and developing countries is increasing, as more and more people are questioning the drive for globalisation and profit-seeking competition. In a nutshell, the current state of affairs suggests that we are in the process of redefining/remapping global economic and political relations to reflect a diversity of positions, as well as shared concerns and tensions. If the process is pursued to its logical conclusion, it could expose the hypocrisy of the old order and create a new political environment where the powerful hegemony of the transnational, commercial and financial institutions can be challenged through cooperative action by the losers. Acting individually, developing countries are unable to protect their people and natural resources from the havocs of globalisation and transnational companies, which are taking over life-supporting industries. But acting collectively/cooperatively, they could face the challenges posed by globalisation and benefit from the opportunities that it opens up. Similarly, within a country, rural producers' cooperatives could protect the small and marginal farmers from the adverse effects of globalisation, and also enable them to benefit from it. What is needed most in the rural sector now is to liberate the rural producers and their organisations from the shackles of unnecessary government controls and archaic laws.

Consequent upon dismantling of Quantitative Restrictions (QRs) on imports as per the WTO Agreement on Agriculture (AoA), commodity-wise strategies and arrangements for protecting the grower from the adverse impact of undue price fluctuations in world markets and for promoting exports will need to be formulated. Apart from price competition, other aspects of marketing, such as quality, choice, health and bio-safety will be promoted. Exports of horticultural produce and marine products will receive particular emphasis. A two-fold long-term strategy of diversification of agricultural produce and value addition, enabling the production system to respond to external environment, and creating export demand for the commodities produced in the country, will be evolved with a view to providing the farmers incremental income from export earnings. A favourable economic environment and supportive public management system will be created for promotion of agricultural exports. Quarantine, both of exports and imports, will be given particular attention so that Indian agriculture is protected from the ingress of exotic pests and diseases.

In order to protect the interest of farmers in context of removal of QRs, continuous monitoring of international prices will be undertaken and appropriate tariffs protection

will be provided. Import duties on manufactured commodities used in agriculture will be rationalised. The domestic agricultural market will be liberalized, and all controls and regulations hindering an increase in farmers' income will be reviewed and abolished to ensure that agriculturists receive prices commensurate with their efforts and investment. Restrictions on the movement of agricultural commodities throughout the country will be progressively dismantled.

MAIN POINTS

1. The term 'Policy' may be defined as a definite course of action selected (as by government, an institution, a group or an individual) from among alternatives and in light of given conditions to guide and usually to determine present and future decisions. The most common social and political usage of the term refers to a course of action or intended course of action conceived of as deliberately adopted after a review of possible alternatives and pursued or oriented to be pursued. Rural development policy implies the actions taken by the government in pursuit of certain objectives of rural development.
2. Public policy is a form of social control. A farmer accepting a production loan from a nationalised bank and a subsidy from the government is restricted in the manner in which he can spend the borrowed money and subsidy, but his freedom to expand his output, improve his income and standard of living and develop his individual talents is enhanced.
3. The farther we move away from simple, small-scale handicraft industry and self-contained and subsistence agriculture, a greater need develops for public policy in the economic field. The individual, as a producer and as a consumer, depends more and more upon the general conditions of the market, of employment, output and production efficiency of the nation as a whole, and upon the way income is distributed among the people; in short, upon the economic welfare of the country.
4. Some specific reasons favouring government intervention in the rural sector are: India's commitment to set up a 'socialist pattern of society'; violent fluctuations in agricultural production, prices and incomes; rural poverty and income inequality; small, scattered and unorganised rural enterprises; and inadequate and poor basic infrastructure in rural areas.
5. Rural development policies are designed to improve the conditions under which rural people work and live. The goals of policies are governed by what people desire, and the measures of policies by what people think the government can and ought to do to bring about the desired change. This is the theory of public policy. Changes are desired only when people do not like the way things are going. Pressure for public action arises when people feel that they, individually, cannot bring about the desired adjustments. From the 'Directive Principles of State Policy' enshrined in India's Constitution, one could derive two dominant goals

of economic policy: first, increasing the national income; and second, improving the distribution of national income among the members of the society. These and other goals are reflected in India's economic policies that are enunciated in its five year plans.

6. Given the multiplicity of policy goals, it is necessary to study the relationships among them and see that they converge towards public interest, or at least do not militate against it. This can be done if various policy goals and programme objectives are arranged in the form of a pyramid. At the top of the pyramid is the master goal of economic policy. At the next level, we have the objectives of specific government programmes; and at the lowest level, relatively simple and clear-cut objectives of most specific level of programme units are listed.
7. India has a long history of government intervention in the rural sector of its economy. In the pre-independence era, the British government intervention was aimed at promoting the export of food and raw materials to the Great Britain. There was no state policy for the development of resources of India for the welfare of its people. Introduction of land tenure system, opening up of road and rail communications, and promotion of export trade in certain agricultural commodities were the important measures taken by the British government.
8. In January 1946, the then Government of India (GoI) issued a 'Statement of Agriculture and Food Policy in India', which spelt out the objectives to be achieved, the measures to be taken, and the respective roles of the centre and the provinces. According to the Statement, the all-India policy was to promote the welfare of the people and to secure a progressive improvement of their standard of living.
9. India did not have a unified national policy for rural development until the year 2000, when the first National Agricultural Policy was announced. What existed until then was a National Forest Policy (NFP), an Agricultural Price Policy (APP), a Rural Credit Policy, a National Water Policy (NWP), some semblance of a land reforms policy and an assortment of agricultural and rural development programmes not integrated with one another and coordinated properly. The main objectives of the National Agriculture Policy include, *inter alia*, the promotion of technically sound, economically viable, environmentally non-degrading, and socially acceptable use of country's natural resources—land, water and genetic endowment—to promote sustainable development of agriculture.
10. Besides the National Agriculture Policy, India now has a National Policy on Cooperatives (2002), a National Policy for Farmers (2006) and a Marine Fishing Policy (2004). All these policies are designed to ultimately improve the well-being of rural people. But the intensions of the public policies in India are hardly realised, thanks to their lax and lackadaisical implementation.
11. In August 1991, the GoI launched a New Economic Policy (NEP), which is characterised by privatisation, deregulation and globalisation. The statist model of rural development characterised by the predominant role of the state in initiating, fostering and directing rural development is likely to be abandoned giving way to a market-driven and guided model. It has become fashionable once again these days to believe that a greater reliance on market forces and the integration of national

economies within a global economy—that is, globalisation—would reduce the problems of poverty and unemployment through speeding up the pace and level of economic growth.

NOTES

1. URP consumption = Uniform Recall Period consumption in which the consumer expenditure data for all the items are collected from a 30-day recall period.
2. <http://dacnet.nic.in/agStat06-07.htm>
3. See Singh and Shishodia (2007: Ch.10) for the details of a new system of FRA.

QUESTIONS FOR DISCUSSION

- 6.1. Does India need to have a separate national policy for rural development? Yes/No. If yes, why; if no, why not?
- 6.2. Illustrate with an example, the concept of hierarchy of policy goals.
- 6.3. In a democratic country like India, who should determine the goals and measures of public policies and how?
- 6.4. Write a critique of the National Agriculture Policy 2000, with special reference to its objectives and the measures stipulated to achieve them.
- 6.5. Write an essay on why India's rural sector continues to be relatively backward and underdeveloped despite the fact the so many policies and programmes for its development have been launched by the government from time to time over the last 60 years or so.
- 6.6. In what ways will the present economic policy of the Government of India (GoI) characterised by privatisation, deregulation and globalisation affect the rural people, especially marginal and small farmers and rural artisans?

7

Strategies for Sustainable Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define and illustrate the term 'strategy' in the context of development;
- define the concept of sustainability and differentiate between 'strong sustainability' and 'weak sustainability';
- define the term 'sustainable development', and explain why it should be the supreme goal of public policy;
- identify the major indicators of non-sustainable development;
- describe India's major strategies of rural development followed in the past and their merits and demerits and
- illustrate the basic elements of an ideal strategy of sustainable development.

INTRODUCTION

According to Wikipedia, the free encyclopaedia, a strategy is a long-term plan of action designed to achieve a particular 'goal', most often 'winning'. Strategy is differentiated from 'tactics' or immediate actions with resources

at hand by its nature of being extensively premeditated, and often practically rehearsed. The word derives from the Greek word *stratēgos*, which derives from two words: *stratos* (army) and *ago* (ancient Greek for 'leading'). *Stratēgos* referred to a 'military commander' during the age of Athenian democracy. This chapter deals with strategies for sustainable development.

Sustainable development has recently risen to the top of international economic and political agenda. The report of the World Commission on Environment and Development (WCED 1987), 'Our Common Future', was the first major international initiative that enhanced the awareness of policy makers about sustainable development and the complexity of relationship between environmental problems, economic growth and needs of people, rich and poor. One of the follow-up actions initiated by the United Nations to implement the recommendations of WCED culminated into the United Nations Conference on Environment and Development (UNCED) held in Rio in June 1992. The UNCED has further heightened the global concern over deteriorating environment and the interest in the search for practicable strategies for sustainable development.

This chapter first presents the basic concepts and connotations of sustainability and sustainable development, and then a few indicators of non-sustainable development. This is followed by a critical review of India's strategies of rural development, and finally, the presentation of basic elements of a new strategy of sustainable development.

THE CONCEPTS OF SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT

The concept of sustainability basically implies a characteristic of a system, a programme or a resource to last intact forever. The concept first came into prominence in 1980 in the context of the World Conservation Strategy (WCS) of the International Union for the Conservation of Nature and Natural Resources (IUCN). Thereafter, the WCWD, or the Brundtland Commission, in its 1987 report, 'Our Common Future', emphasised the key role of agricultural sustainability as the basis of sustainable development (WCED 1987). Currently, there are two distinct concepts of sustainability in vogue. One, the economist's worldview of sustainability is concerned about the long-term constancy of economic output, income or consumption. Two, the ecologist's and biologist's concept of sustainability relates to long-term preservation of biosphere, that is, the sustenance of human populations and biodiversity conservation in a given geographical area/region, endowed with limited natural resources Food and Agriculture Organisation (FAO 1989: 65; Bartelmus 1997: 326–27). The former, that is, the economic sustainability is production- and consumption- oriented, and the latter, that is, the ecological sustainability has sustenance of people and biodiversity conservation as its focal points.

Economic sustainability implies the maintenance/constancy of produced capital and natural capital (natural resources and environment) used in the production of goods and services. Ecological sustainability can be defined in terms of compliance with the carrying capacity limit of natural systems. Carrying capacity is usually measured by

the number of people a natural system/area/watershed can sustain indefinitely, or for a specified time period, at a particular standard of living. Obviously, carrying capacity depends on the level of desirable standard of living, type of production technologies in use, time horizon of analysis and external trade with other regions/countries. Variations in all these parameters/factors render the concept inapplicable except at the global level, which is a utopia.

As we stated earlier in Chapter 1 the WCED (1987: 43) defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' This definition emphasises the need for the present generation to ensure inter-generational equity by safeguarding the interests of future generations through maintaining the natural resources capital of this planet intact. In these respects, it is very similar to the concept of sustainable livelihood by which we mean secure access of both present and future generations to basic necessities of life such as food, clothes, shelter, security, freedom, basic literacy and health care on a long term basis. This concept of sustainable livelihood is almost synonymous with that of human survival with freedom and dignity, or human development, which should, in our opinion, be the supreme goal of mankind. Few would dispute that sustainable livelihood (survival) as a goal is more environment friendly and more globally acceptable than the goal of economic growth.

Sustainable development requires that in the process of economic growth, we maintain our natural resources and environment intact and use/harvest only that much quantity which is regenerated naturally, that is, we live on the 'flows' and keep the 'stock' of natural resources and environment intact. However, we would like to add that it is now possible to augment through appropriate technological and management interventions the natural flows/harvest of products of nature.

In the context of sustainability, two questions are important:

1. How long will our natural resources last, given current consumption patterns?
2. How should we manage our natural resources and environment so that the future generations have access to the same quality of life as the present generation?

The first question of resource longevity is really one of prediction and accounting: how do technology, taste, population and natural regeneration influence the stock of environmental goods that will be available from one year to the next? Thus, the ethical motives behind sustainability are derived from a concern for the future, and the fear that the current trends in production and consumption are threatening the well-being of future generations.

Questions about how long resources will last have long concerned planners and economists who have worried that the world is running out of agricultural land, fish and other important environmental goods. A variety of indices have been developed to measure the degree to which resources are being consumed sustainably. In their most basic form, these indices simply divide stocks by consumption rates. More elaborate indices take into account the fact that changes in taste or technology may reduce future demand while natural regeneration, especially for biological resources, may increase stocks

to keep pace with the increasing demand. Generally, most predictions about resource sustainability lack in accuracy. Clearly, a better understanding of the trends in demand and technology are necessary before we can say with confidence how environmental quality and goods will fare in a consumption-oriented world.

The second question of sustainability 'how should we manage our resources' requires that we have some management target for the way in which resources are distributed across generations. The concept of Pareto optimality, useful in the analysis of welfare within a generation, is not applicable when we do not know the tastes, preferences or technologies of the future generations. Consumers, particularly the poor, tend to attach higher preference to consumption today than tomorrow. Should we ignore this tendency when thinking of sustainability, or should we include the society's time preference by discounting the value of future consumption when we decide how to manage for sustainability? What about expected improvements in technology? Could saving too much of our natural and environmental resources make the future generations better off at the expense of the present generations?

The 'we' in the second question of sustainability 'how should *we* manage...' implies that there is some sort of shared vision about the goals of sustainability. However, there is no universal consensus about a single indicator of sustainability. But the most commonly used indicator of sustainability of any proposed resource use over time is the maximisation of net present value, as proposed by the neoclassical economists (Grafton et al. 2001: xxvi–ix).

However, the question whether sustainability and sustainable development ought to refer to the maintenance of the *status quo*, economic growth, redistribution of wealth, the protection of capital stocks or the preservation of natural capital, is still debatable. The answer would vary from society to society and with the stage of economic development within a society. Related to this question are the notions of 'weak sustainability' and 'strong sustainability'. The former is defined as the maintenance of the value of the aggregate stock of capital. It implies that we can substitute human-made capital for natural capital in production and consumption, such that economic growth can be associated with improvements in environmental quality. More rigorously, 'weak sustainability' can be defined as follows:

$$K + H + SC + N \geq X^*$$

where K is man-made capital, H is human capital, SC is social capital, N is natural capital, and X^* is some predetermined threshold level of all the forms of capital expressed in monetary terms. This implies that under a policy of weak sustainable development, depletion of the stock of natural capital could be made good by investment in man-made capital. But it is important to note that the substitution of one form of capital for another form is possible only to a certain extent. This means that a certain minimum quantum of each form of capital is essential for development.

By contrast, 'strong sustainability' posits that natural and human-made capital are complements and cannot be substituted for each other in either production or consumption. Consequently, economic growth that uses natural resources and generates wastes must increase environmental degradation. A rigorous definition of 'strong sustainability' is as follows:

$$K \geq K^*; H \geq H^*; SC \geq SC^*; \text{ and } N \geq N^*$$

This definition implies that each type of capital stock be maintained in its own right above some minimum level. Daly (1990) has specified the following three principles for attaining and maintaining strong sustainable development:

1. Renewable resources must be harvested at or below the growth rate for some predetermined stock of the resource.
2. As non-renewable resources are depleted, renewable substitutes must be developed so as to maintain the flow of goods and services over time.
3. Pollution emissions should be limited to the assimilative capacity of the environment.

The scale of sustainability is also an important factor affecting the success of a policy of sustainability. The scale ranges from local to global and, accordingly, we could think of local sustainability and global sustainability. The scale determines the type of problems that can be addressed locally, nationally or globally. For example, the problem of global warming or depletion of ozone layer can be addressed effectively only at the global level and not at the local level. The distinction between local sustainability and global sustainability can be related to 'weak sustainability' and 'strong sustainability'. In most discussions of sustainability, 'weak sustainability' and 'strong sustainability' are thought of as competing paradigms. However, it is more useful to recognise that both these measures could be valid in different contexts concurrently. For global sustainability, it is essential to maintain stocks of some critical resource, say biodiversity, above a 'safe minimum standard' level for sustainable development, a condition for strong sustainability. But the local economy, while dependent on strong global sustainability, may seek weak local sustainability by depleting its renewable resources, say fisheries or forest, to maintain its material well-being, without adversely affecting global sustainability.

SOME INDICATORS OF NON-SUSTAINABLE DEVELOPMENT

The following indicators and data support the non-sustainability of current patterns of production, consumption and economic growth (World Resources Institute [WRI] 1992: xi; Bartelmus 1997: 325).

Land Degradation

Over the past 50 years or so, 1.2 billion hectare (bha) of land—an area larger than that of China and India taken together—has been degraded and its productivity reduced (WRI 1992: xi). It is also estimated that 500 billion tonnes of topsoil has been lost since 1972 (Brown et al. 1993) and 5 million hectares (mha) are lost annually due to desertification. If such

human-caused losses continue, feeding the world population, which is projected to nearly double by the middle of the twenty-first century, will be a very difficult task. It is estimated that in India in 1994, about 188 mha of land, which is 57 per cent of the country's total geographical area of about 329 mha, was degraded. Of the 188 mha of degraded land, about 149 mha was affected by water erosion, 13.5 mha by wind erosion, about 14 mha by chemical deterioration and 11.6 mha by waterlogging (Sehgal and Ahol 1994). A recent survey by the National Bureau of Soil Survey and Land Use Planning revealed that 66 per cent of India's total geographical area (around 192 mha) was at varying stages of degradation (quoted in Haque 1997: 155–59).

Land degradation can result from both intrinsic attributes, such as location, environment, and chemical and physical properties of the soil, as well as from manmade circumstances. Whatever its underlying causes, land degradation has significant adverse impacts on crop productivity and the environment. Joshi and Jha (1991), in a study of four villages in Uttar Pradesh, found that a 50 per cent decline in crop yields over a period of eight years was due to salinisation and waterlogging caused by the irrigation system.

A characteristic feature of land resources in India is the preponderance of common pool lands, that is, the lands which are used in common by identifiable groups of people. These lands, irrespective of their legal ownership, are accessible to local people without any restrictions and are used without any rules and regulations. In this sense, they may be called open access resources (OAR). All OAR suffer from what Hardin (1968) called, albeit erroneously, 'the tragedy of the commons'. Most OAR are degraded, eroded, denuded of vegetation, encroached and polluted. Thus, with more than half of its land being degraded, India has very bleak prospects of sustaining even the existing (low) rate of food production in the coming decades.

Degradation and Depletion of Water Resources

Water is essential for the survival of all forms of life on this planet. Adequate and timely availability of water for irrigation is an important factor affecting agricultural production and, thereby, food security. The global renewable water resources are estimated at 41,022 cubic kilometre (ckm) and, in 1998, the per capita availability of water was 6,918 cubic meter (cm) with wide variations from nation to nation ranging from merely 11 cm in Kuwait to 6,06,498 cm in Iceland (WRI 1998: 305). Due to the increasing area being brought under irrigation, growing industrialisation and urbanisation, and increasing human and animal populations, pressure on water resources has increased tremendously and, consequently, both surface water and groundwater resources are being depleted and degraded at a fast rate in most of the countries of the world. Some people believe that in the twenty-first century, there will be more water wars—both internationally and intra-nationally—than any other kind of war. This trend poses a real threat not only to sustainable development but human survival also. India, as a whole, is reasonably well endowed with water with the average per capita availability of 1,896 cm of renewable

water annually, as compared to the average quantity available in many other countries in the world (WRI 1998: 304–05). But there are wide variations in the availability of water across space and over time, due to highly uneven distribution of rainfall.

Both surface water and groundwater resources in India are in a serious state of degradation and pollution. The extent of degradation of water resources has reached a stage when immediate intervention by governmental and non-governmental agencies through appropriate measures has become absolutely essential. Surface water is hardly fit for drinking. The river Ganga, which is worshiped by devout Hindus as 'Mother Ganga' is no exception. It is highly polluted at several places.¹ Similarly, groundwater in many arid and semi-arid areas has been depleted due to over-extraction, and degraded due to leaching of fertilisers and pesticides residues from cultivated fields. Consequently, the incidence of waterborne diseases has increased significantly in recent years.

Furthermore, mismanagement of both surface water and groundwater resources in conjunction with the growing demand of water for agricultural, industrial and domestic uses, has engendered many problems, such as depletion and degradation of groundwater aquifers, pollution of surface water bodies, and acute shortage of freshwater in arid, semi-arid and hard rock areas in the country. Groundwater table has gone down drastically in many areas of the country, such as Mehsana district in north Gujarat and Coimbatore district in west Tamil Nadu. It is estimated that in Mehsana district, water table has been falling at the rate of five to eight meters annually and that some 2,000 wells dry up every year (Moench and Kumar 1997: 305). In the coastal areas of Gujarat, excessive extraction has depleted the groundwater aquifers and the vacuum so created has been filled in by intrusion of seawater, a phenomenon called salinity ingress. It is estimated that salinity ingress is increasing at an alarming rate of half-a-kilometre to one kilometre a year along 60 per cent of the 1,100 km long Saurashtra coast in Gujarat (*The Times of India* 1998). The salinity ingress has rendered groundwater in those areas unfit for both domestic and agricultural uses, and has adversely affected crop yields. Most of the problems in the use and management of water resources could be traced to the lack of well-defined property rights and absence of appropriate institutions for regulating the use of water. Restoring the loss of sustainability of renewable water resources requires governmental intervention in such forms as creation and enforcement of appropriate property rights, regulation of water use, taxes and cooperative management by users' groups or associations (Singh 1998).

Degradation and Depletion of Forest Resources

Forests are a valuable renewable resource providing the vital life support system, and are essential for sustainable development. With the fast growing population, the demand for forest resources has progressively increased. Consequently, forest resources are being depleted at a rate that is higher than the natural regeneration rate. It is estimated that the world's average annual rate of deforestation in tropical countries is at 16.9 mha.

This is 50 per cent higher than the rate estimated in the previous 1980 Tropical Forest Resources Assessment (WRI 1992: 285). Although, there is no consensus about the extent of deforestation of tropical forests in the world, environmentalists point with alarm to the eroding hillsides, barren dry lands studded with trunks of once-thriving trees and burned out tropical forests. Of the three tropical regions, namely, Asia, Africa and Latin America, Asia's deforestation rate is the highest at 1.2 per cent per annum for the period, 1981–90.

In India, millions of rural people depend on forests for their livelihood. In view of this, the sustainability of the flow of forest products is essential for sustaining their livelihoods. But, over the last three decades or so, forest resources have been under great biotic and abiotic pressures. They have been subject to over-exploitation, degradation and encroachment (Singh 1994: 226). It is estimated that about 36 mha of the total forestland is deforested and degraded (Society for Promotion of Wastelands Development [SPWD] 1984). Besides, substantial chunks of forest land are being diverted to non-forestry uses. Consequently, the forests' area, productivity and production have declined, and their sustainability is threatened. The low productivity of forests in India in terms of the volume of growing stock is evident from the fact that the volume of growing stock in India in the year 2000 was 43 cm per ha as compared to 119 cm in Malasiya and 100 cm in Nepal (FAO 2001). All this poses a threat to the survival of millions of poor people, especially tribals, who mainly depend on forests for their livelihood.

Depletion of Conventional Sources of Energy

The world's consumption of commercial energy from conventional sources is increasing at a rapid rate, depleting the world's reserve of fossil fuels. As per the projections made by the International Energy Agency, by 2010, global energy consumption is expected to rise by about 50 per cent from the 1993 level (WRI 1998: 170). It is also estimated that we are now left with only 90 years of proved recoverable mineral reserves, 243 years of proved reserves in place and 800 years of total reserves left (United Nations 1992). Besides, there are wide disparities in energy consumption between regions and countries. It is estimated that in 1989, the per capita energy consumption in industrialised countries was 10 times the average per capita consumption in developing countries (WRI 1992: 313).

In India, the per capita consumption of commercial energy is very low when compared with that in developed countries. For example, in 1989, it was merely nine Giga joules per annum as compared to 295 Giga joules in the USA (WRI 1992: 316–17). Agricultural uses accounted for about 31 per cent of the total energy consumption in the country in 1994–95 (GoI 1997c: 113). In 2001–02, the per capita consumption of electricity in India was 313 kilowatt hour (kwh) and agriculture accounted for 25.33 per cent of the total electricity consumption in the country (GoI 2004a). But given the very large size of its population, even this level of energy consumption is not sustainable unless non-conventional sources of energy are fully developed and harnessed.

Loss of Biodiversity

The diversity of species is necessary for the normal functioning of ecosystems and the biosphere as a whole. The genetic material in the wild species contributes billions of rupees to the world economy in the form of improved crop species, new drugs and medicines, and raw materials for industry. But utility aside, there are also moral, ethical, cultural, aesthetic and purely scientific reasons for conserving wild beings.

There are no reliable estimates of the extent of biodiversity available worldwide. Estimates vary from 2 million to 100 million species with the best estimate being somewhere near 10 million, of which only 1.4 million have actually been named so far. The biological heritage of the planet Earth is increasingly at risk. It is estimated that one-quarter of all species are in danger of extinction, and 5,000 to 1,50,000 species are lost annually due to the destruction of biomass and habitat by destructive agriculture, deforestation, pollution, and destructive fishing and grazing practices (Bartelmus 1997: 325). Much of the world's biodiversity is found in developing countries and it is estimated to be disappearing at 50 to 100 times the natural regeneration rates (World Bank 1988: 26).

India is endowed with an immensely rich biodiversity. It is rated as one of the 12 mega diversity countries in the world, accounting for 60 per cent to 70 per cent of the world's biodiversity. India has 6 per cent of the world's flowering plant species, 14 per cent of the world's birds, one-third of the world's identified plant species numbering over 45,000 and about 81,000 identified species of animals (World Bank 1996: 1). India's natural resources and biodiversity are economically important, both nationally and globally. As one of the world's oldest and largest agricultural countries, India has an impressive diversity of crop species and varieties. At least 166 species of crop plants and 320 species of wild relatives of cultivated crops originate in the subcontinent. About 90 per cent of all medicines in India come from plant species, many of which are harvested in the wild. Medicinal plants and other non-timber forest products are particularly important as a source of income and sustenance for the tribal population. Natural ecosystems strongly influence natural resources development and management, which is important not only for agriculture but also for industrial and municipal development.

In India, there has been a tremendous loss of biodiversity due to deforestation. Many plant and animal species are on the brink of extinction. Although the extinction of 23 species has been confirmed, it is suspected that many more have died unnoticed. Although, loss of habitat, over-harvesting and pollution are immediate causes of loss of biodiversity in most of the cases, the underlying causes of these actions are several socio-economic factors, such as population pressure, poverty, unemployment, ignorance and lack of incentives for using natural resources and biodiversity on sustainable basis in the best interest of society. So long as the human and animal population was within the carrying capacity of locally available natural resources and the local environment, there was no environmental degradation and no loss of biodiversity due to human actions. But as the population increased and local economies got integrated with external economies through trade, the process of degradation of natural resources and loss of biodiversity started. Further, many communities depend directly on natural resources for their livelihood. They are very poor and ignorant, and have no alternative employment

opportunities. This compels them to over-exploit and degrade the natural resources accessible to them, which, in turn, poses a great threat not only to their own survival but also to ecological security and integrity. It is high time that India adopted a responsible national policy of natural resources and biodiversity conservation, which is in tandem with its economic and social development policies.

Climate Change

There have been perceptible changes in climate all over the world, particularly in the last two decades or so. The major changes include acid rains, global warming, depletion of ozone layer, and increased incidence of droughts, floods, cyclones and hailstorms. According to the Intergovernmental Panel on Climate Change (IPCC) (1995), atmospheric accumulations of greenhouse gas emissions have led to global warming to the extent of 1° C. to 3.5° C. (Bartelmus 1997: 325). This is further substantiated by the Fourth Assessment Report (2007) of the IPCC. Of particular concern is the emission of carbon dioxide (CO₂) from the combustion of fossil fuels, which now supply around 95 per cent of the world's commercial energy. Current concentrations of CO₂, methane, nitrous oxide and other greenhouse gases have reached levels well above those of the pre-industrial era. If the growth in global emissions continues unabated, the atmospheric concentration of CO₂ is likely to double, relative to its pre-industrial level, mid-way through the next century. The accumulation of the greenhouse gases poses significant risks to the world's climate and to human well-being. Potential impacts include a rise in sea levels, greater frequency of floods and droughts, shifts in agricultural production, threats to human health from increased range and incidences of diseases, changes in availability of freshwater supplies, and damage to ecosystems and biodiversity. Another disturbing aspect of this problem is the disproportionately high share of the industrialised and oil-producing countries in the world's total emissions. To stabilise atmospheric concentrations of CO₂, the emissions must be cut by 60 per cent from the present levels. The Kyoto Agreement signed in December 1997 by the USA and 159 other countries, provides for placing binding limits on industrial countries' emissions of greenhouse gases. The agreement also provides opportunities for the industrial nations to trade rights to emit greenhouse gases with each other.

Ozone Layer Depletion

Increasing industrialisation and deforestation are changing the chemical composition of the earth's composition in ways that threaten agriculture, ecological balance and human health. The atmospheric changes pose two major threats: first, ozone depletion by the production and use of chlorofluorocarbons (CFCs) and other related compounds, and second, greenhouse effect resulting from the concentration of CO₂ and other greenhouse gases. Ozone is a powerful oxidant, and it absorbs much of the sun's damaging ultraviolet

rays. An increase in the ultraviolet radiation can cause skins cancer and cataract, may disrupt the marine food chain and damage crops. Recent measurements indicate that peak ozone destruction has reached 60 per cent over Antarctica and there are indications of an Arctic ozone hole over the North Pole. Only equatorial regions so far show no significant ozone losses (WRI 1992: 9). The ozone layer in 1993 was at an all-time low of 90 Dobson units, with the ozone hole 15 per cent larger than in previous years (Brown et al. 1993). The 2005 ozone hole was one of the biggest ever, spanning 24 million sq km in area, nearly the size of North America. While the ozone hole over Antarctica continues to open wide, the ozone layer around the rest of the planet seems to be on the mend.² This is caused by the use of CFCs and halons in refrigeration, insulation and packing. For countries like India, no reliable information is available about the extent of the loss of ozone.

All these indicators of the loss of sustainability necessitate radical changes in the conventional economic planning and policy making. Generally speaking, in response to such threats to sustainability, two new paradigms are emerging: 'eco-nomics' (coined by Postel 1990) and 'sustainable development'. The former focusses on the internalisation of environmental costs into conventional micro- and macro-economics, and the latter advocates compliance with the social and environmental norms in the processes and activities necessary for economic growth. Eco-nomics can be seen as an attempt to accommodate externalities in the conventional economic analysis, while at the same time, incorporating in it the criteria of inter-generational equity defined as long-term maintenance of per capita consumption. This implies a shift from Gross Domestic Product (GDP) maximisation towards more sustainable growth, which can be defined as Environmentally adjusted Net Domestic Product (ENDP). Several UN conferences held recently have adopted a number of goals for the twenty-first century. One of the goals is: 'implementing national strategies for sustainable development by 2005 to ensure that the current loss of environmental resources is reversed globally and nationally by 2015' (World Bank 1998: 10).

Now, we shall first present an overview of the major strategies of development followed in India in the past, and then some salient elements of a new strategy for sustainable development.

A CRITICAL REVIEW OF INDIA'S STRATEGIES OF RURAL DEVELOPMENT

A review of various rural development programmes and policies followed in India after independence, reveal the following four strategies of development.³

Holistic and Equity-oriented Strategy

Agricultural and rural development have been accorded a high priority in India's five year plans. The First Five Year Plan was dominated by the Community Development

Programme (CDP), which reflected India's overriding concern with nation building and equity. The major strategy underlying the CDP was holistically designed to simultaneously achieve the goals of growth, welfare, equity and community participation. This paradigm takes a very comprehensive but integrated view of the basic problems of poverty, unemployment and inequality, and seeks to address the physical, economic, technological, social, motivational, organisational and political bases of these problems. The multiple goals of this strategy are sought to be achieved by building the capacity of the community to involve itself in development in partnership with the government. The critical assumption underlying this approach is that the government can restructure the societal power relationships, and centralised bureaucracies can learn to share power with community groups. Successful implementation of this strategy requires complex decentralised matrix structures, with permanent mechanisms for vertical and lateral integration, a combination of specialist and generalist skills, institutional leadership, social intervention capability and systems management (Ickis 1983: Chapter 1). Some other programmes launched after the CDP, such as the Integrated Rural Development Programme (IRDP), National Rural Employment Programme (NREP), and Training of Rural Youth for Self-Employment (TRYSE), were intended to follow this paradigm. But given the existing organisational structure and governance system in India, which does not have many of the prerequisites discussed earlier for the successful implementation of this strategy, this strategy did not yield the desired results.

Growth-oriented Strategy

By the middle of the Second Five Year Plan, it became increasingly evident that whatever the success of the CDP, a new approach would be required if agricultural production was to stay ahead of the demands of India's mounting population. In 1957–58, India faced its first post-independence food crisis. In response to this crisis, and on the basis of the recommendations of the Ford Foundation-sponsored Team of American Agricultural Production Specialists, a new programme called the Intensive Agriculture District Programme (IADP), or Package Programme, was formulated and launched in seven selected districts in the country in 1960–61, and was later extended to eight more districts.

The IADP represented a significant departure from the CDP, in that it employed the concentration principle in deploying resources, as opposed to the equity criterion of the CDP. Its main objective was to achieve rapid increases in agricultural production through the use of complementary inputs and services (package approach) at the farm level. Farm planning formed the core of IADP. By 1966, the basic concept of concentration, and the effective use and better management of resources had gained national acceptance, and a number of new agricultural development programmes, such as the Intensive Agricultural Area Programme (IAAP), the High Yielding Varieties Programme (HYVP) and the Intensive Cattle Development Programme (ICDP) had been patterned like the IADP. All these programmes were growth oriented; they did not address themselves to

equity issues. They demonstrated, on one hand, the effectiveness of the concentration principle in achieving rapid increases in food production, and on the other hand, the failure of the growth-oriented strategy to solve the basic problems of rural poverty and income inequality. The most important lesson learned from the experience with these programmes was that a rising economic growth rate was no guarantee against worsening poverty, and that a direct frontal attack on the basic problems of poverty and unemployment was called for.

Welfare-oriented Strategy

This seeks to promote the well-being of the rural population in general, and the rural poor in particular, through large-scale social programmes like the Minimum Needs Programme (MNP), Applied Nutrition Programme (ANP), Mid-day Meals Programme (MMP), National Old Age Pension Programme (NOAPP), and so on. The primary means used in this strategy are free provision/distribution of goods, services and civic amenities in rural areas. The critical assumptions of this strategy are that people are not competent to identify and resolve their problems, and that government specialists can identify their needs and meet them with the financial and administrative resources available with the government. The role of villagers is that of passive receptors of services. This strategy has a paternalistic orientation. The performance of the programmes is judged by the quantity of goods, services and civic amenities delivered. The welfare-oriented programmes present a mixed picture; the rural poor have benefited significantly through some programmes in a few areas but not in others. There are three major criticisms of this strategy:

1. It has created dependence.
2. It requires resources that are beyond the means of governments.
3. It has opened the doors for large-scale corruption among those responsible for delivering welfare benefits.

Facilitating and Participatory Strategy

This is aimed at helping rural people help themselves through their own organisations, active participation and other support systems. Its concern is with responding to the felt needs of the rural people as defined by *them*. The role of the government is to facilitate the self-help efforts of the villagers by providing technologies and resources that are not locally available. The critical assumption of this strategy is that the rural poor will identify and resolve their problems if provided with minimal support, and otherwise left to their own devices and initiatives. Community participation in—and control of—project activities is the primary performance indicator of this strategy. India's Operation Flood (OF), which was launched in 1970 in 18 milksheds in 10 states, is a good example of this

strategy. OF aimed at modernising and developing India's dairy industry through a three-tier structure of Anand pattern dairy cooperatives. Many voluntary agencies are also following this paradigm of development.

To conclude we could say that what is needed now is an integrated or holistic strategy which combines all the positive features of the earlier four strategies, and which is implemented faithfully through the creation of an appropriate organisational and institutional framework.

SOME ELEMENTS OF A NEW STRATEGY FOR SUSTAINABLE DEVELOPMENT

Given the failure of the rural development strategies followed so far in India to solve the problems of rural poverty and unemployment, there is need for us to design strategies that will allow us to move from the present, often unsustainable processes of growth and development, on to sustainable development paths. This will require policy changes in all countries, with respect to their own development and to their impacts on other nations' development possibilities. Generally speaking, the following are some of the important elements of a pragmatic strategy for sustainable development (Singh 1999).

Sustainable Agriculture, Food Security and Ecological Security

Food security, which depends on sustainable agriculture, is a prerequisite for sustainable livelihoods, which, in turn, constitutes an integral element of sustainable development. Food security at the national level may be defined as the secured access of all individuals and households in a country to adequate quantity of food for an active and healthy life on a long-term basis. Now the concept of food security has been broadened and is used to connote livelihood security, that is, secured physical and economic access to balanced diet, safe drinking water, environmental sanitation, primary education and basic health care (Swaminathan 1996: 66). The three components of food security, namely, physical availability, economic access and sustainability, are essential for maintaining peace and social harmony, both nationally and internationally. Therefore, it would be logically correct to say that food security is a *sine qua non* of peaceful sustainable development.

To attain food security, top priority must be given to promoting sustainable agricultural production systems. Increasing agricultural production at the cost of degraded soil, and depleted and polluted water bodies is an antithesis of sustainable agriculture. Land use in agriculture should be based on a scientific assessment of the land capability. Furthermore, annual depletion of top soil, fish stock or forest resource must not exceed the rate of natural regeneration. Future increase in productivity, in both developed and developing countries, should be based on a better controlled application of water and agro chemicals, as well as on more extensive use of organic manures and non-chemical means of pest control.

Judicious Management of Natural Resources and Natural Disasters

The natural resources of land, water, plants, animals, forests, fisheries and environment, constitute the basic support systems of life on Earth. Sustainable development depends on how wisely such natural resources are used. In India, most of the natural resources, especially those held and/or used in common, that is, common pool resources (CPRs) and OAR are highly degraded and their productivity is very low. Most of the CPRs and all OAR suffer from what Hardin (1968) calls 'the tragedy of the commons'. It is estimated that nearly 100 mha of land in India is common pool land, and about 30 mha of forests, and the bulk of water and fisheries resources also belong to the category of CPRs and OAR (Singh 1994: vii). The restoration and wise management of CPRs and OAR is crucial to the well-being and livelihoods of millions of the rural poor who depend on them. If the process of degradation of natural resources including environment is not reversed, it will not be possible to attain the goal of sustainable development. Fortunately, being biological systems, the CPRs of land, water, forests and fisheries are dynamic and subjects to management interventions that can provide sustainable benefit flows in the form of food, fodder, fuel wood, fibre, timber and various environmental amenities.

The management of CPRs on a sustained yield basis depends upon a careful orchestration of policies and management practices. Agricultural economists, especially those specialising in natural resource economics, have special advantage over other technical and social scientists in developing socially optimum strategies for using and managing CPRs. There are several alternative property regimes or management systems under which natural resources are—and could be—managed. They include private, cooperative/collective, corporate and public property regimes (Singh 1994: 49–70). Creating and enforcing appropriate property rights in OAR could be an instrument of averting their 'tragedy' and improve their productivity (Singh 1997: 136–50). In many cases, cooperative management has been found to be a promising alternative for sustaining CPRs (Singh and Ballabh 1996: 16–18). India's experience with various watershed development projects shows that the watershed approach could ensure the sustainable use of renewable CPRs (Singh 1995). There is a need for us to determine which resource is likely to be judiciously used and managed under what property regime and under what conditions, and how the watershed approach could be more widely adopted in India, especially in the rain-fed areas.

Natural disasters have been a bane of India's economy since time immemorial. In ancient Indian literature, there are references to natural disasters, such as prolonged droughts, flash floods, hail storms, land slides, cyclones and forest fires. About 60 per cent of the landmass in India is vulnerable to earthquakes, over 40 mha is prone to floods,⁴ about 8 per cent of the total area is prone to cyclones and about 68 per cent of the total area is susceptible to droughts. An 8,000 km long coastline is prone to severe cyclonic formations. About 55 per cent of the total area lies in seismic zones III and V, and is vulnerable to earthquakes. Sub-Himalayan regions and Western Ghats are vulnerable to land slides (Kanwar 2001: 7; GoI 2004a: 32).

Economic development is unsustainable if it increases the vulnerability of people to natural and manmade crises. A drought may force the farmers to sell their animals or

other productive assets needed for sustaining production in future years. A pestilence may damage a crop wholly and leave the crop-growers bankrupt. Similarly, a drop in prices of farm produce may reduce farm incomes and, thereby, cause the farmers to over-exploit the natural resources. According to Pursell and Gulati (1993), liberalisation of domestic and external trade in agricultural commodities may aggravate the food insecurity problem of the India's poor through higher cereal prices. To guard against the adverse effects, the public distribution system (PDS) will need to be better targeted and made more effective as a safety net for the poor.

To conclude, we could say that a development path that combines growth with reduced vulnerability is more sustainable than one that does not.

Optimal Development and Utilisation of Human Resources

Human development is both a means and an end of overall societal development. The focus of the development policies and programmes should be people and their well-being. People should be provided freedom and opportunities to develop their capabilities and should be educated, empowered and motivated to contribute to achieving sustainable and equitable development. Human resource development is a crucial requirement not only to build up technical knowledge and capabilities, but also to create new values to help individuals and nations cope with the rapidly changing social, environmental and developmental realities. Knowledge, shared globally, would assure greater mutual understanding and greater willingness to share global resources equitably. Providing more and better education, health care and other related social services is an essential element of any strategy of sustainable development. Current priorities need to be changed to commit more public funds for providing basic services and amenities to all, particularly the poor. According to a recent study, developing countries could usefully redirect much of their current spending—over 2 per cent of their GDP—towards human development. Efforts to reduce military expenditure, halt capital flight, combat corruption and to privatise loss-making public enterprises could make large amounts of money available to support human development (UNDP 1991: 5).

The sustainability of development is also intimately linked to the dynamics of population growth. Projections of India's population to the year 2150 have been made based on several alternative scenarios. Of all the scenarios, the medium fertility scenario seems most probable. Under this scenario, fertility is assumed to stabilise at replacement levels of slightly above two children per woman. Under this scenario, India's population is projected to grow from 929 million in 1995 to 1,533 million in 2050, 1,617 million in 2100 and 1,669 million in 2150 (UN 1998: 187).

Urgent steps are needed to limit the present (high) rate of India's population growth. Choices made now will influence the level at which the population stabilises, around 1.25 billion people. But this is not just a demographic issue; providing people with education, incentives and facilities that allow them to choose the size of their families is a way of assuring, especially for women, the basic human right of self-determination.

Inculcating values and habits—that are congenial to sustainable development among the people—from the very childhood days is the key requirement for sustaining livelihoods in perpetuity. India's Vedic system of livelihood was sustainable in the sense that it emphasised, among other things, frugality and harmony with—and conservation of—natural resources and environment. There are hymns in *The Rig Veda*, in praise of *Prithavi devata* (the Earth), *Indra devata* (the rain god), *Surya devata* (the sun: the source of inexhaustible solar energy), *Vayu devata* (the air), and so on. Gandhiji also commended those values and lifestyle. There are also Vedic prayers seeking bounties from the devatas in the form of food, livestock, health and wealth. This means that the attitude of people in Vedic era was to respect nature and accept with gratitude whatever it gives to them. But, sadly, the attitude today of most of the people is to exploit nature for self-aggrandisement, degrading its productivity. Most of the Indians, particularly the urban elite, now ape Western values and lifestyles and indulge in ostentatious consumption, which is not sustainable. Perhaps, they would accept the Vedic way of living if someone from the west commends it to them.

Alleviation of Poverty and Inequality through Higher Economic Growth

Even after more than 55 years of development planning, the incidence of poverty in India is still high. It was 27.5 per cent in 2004–05 (see Chapter 10 for details). Development, that is sustainable, has to address the problems of a large number of people, who live in absolute poverty, that is, who are unable to satisfy even the most basic needs. Food, clothes and shelter are the basic needs of people everywhere. Meeting these basic needs is the primary function of all economic systems. The pace and pattern of economic development has to generate sustainable work opportunities at a level of productivity that would enable the poor to meet their minimum consumption standards. Increased food production should not be based on ecologically unsound production policies and compromise long-term prospects for food security.

Poverty reduces the people's capacity to use resources in a sustainable manner; it intensifies the pressure on the environment. A necessary but not a sufficient condition for elimination of absolute poverty is a relatively rapid rise in per capita incomes. Given the current population growth rate, this would require overall national income growth of around 10 per cent per year in India; in 2005–06, the growth rate of national income (Net National Product [NNP]) was 8.6 per cent at 1999–2000 prices.

Income distribution is an important element of sustainable development. In India, there is a wide gap in the mean per capita incomes of the richest 20 per cent of its population and the poorest 20 per cent, and this gap has not narrowed down over the years; in fact it may have increased. A rapid growth combined with deteriorating income distribution may be worse than slower growth combined with redistribution in favour of the poor. If India focusses its efforts upon elimination of poverty and satisfying essential human needs, then domestic demands will increase for both agricultural products and manufactured goods and services. Hence, the very logic of sustainable development implies an internal stimulus to economic growth.

Reorienting Technology and Reducing Risk

The promotion of sustainable development will require an organised effort to develop and diffuse new technologies, such as for agricultural production, renewable energy systems and pollution controls. Much of this effort will be based on the international exchange of technology through trade in improved equipment, technology transfer agreements, provision of experts, research collaboration, and so on. Hence, the procedure and policies that influence these exchanges must stimulate innovation, and ensure ready and widespread access to environmentally sound technologies.

The fulfilment of all these tasks will require a reorientation of technology, which is the key link between human beings and nature. First, the capacity for technological innovations needs to be greatly enhanced, so that we, as a nation, can respond more effectively to the challenges of sustainable development. Second, the orientation of technology development must be changed to pay greater attention to environmental factors.

The technologies of industrial countries are not always suited or easily adaptable to the socio economic and environmental conditions of developing countries. To compound the problem, the bulk of world research and development addresses few of the pressing issues facing these countries, such as arid land agriculture or the control of tropical pests and diseases. Not enough is being done to adapt recent innovations in material technology, energy conservation, information technology and biotechnology to the needs of India and other developing countries. These gaps must be covered by enhancing public investment in research, design, development and extension capabilities.

The processes of generating alternative technologies, upgrading traditional ones and selecting and adapting imported technologies should be informed by environmental resource concerns. Most technological research by commercial organisations is devoted to product and process innovations that have market value. Technologies are needed that produce 'social goods', such as improved air quality or increased product life, or that resolve problems normally outside the cost calculus of individual enterprises, such as external cost of pollution or waste disposal.

Optimal Use and Management of Energy Resources

Energy plays an important role in promoting and sustaining agricultural development. Research studies conducted in India and other countries have shown that energy use per hectare is positively correlated with crop yields per hectare. The same conclusion holds in the case of livestock production as well. The present level of energy use in agriculture in India is very low and this explains, to a large extent, the low total factor productivity in Indian agriculture.

A safe and sustainable energy pathway is crucial to sustainable agricultural development; we have not yet found it. Bringing the present level of energy use in Indian agriculture up to the levels in industrialised countries by the year 2025 would require increasing present energy use by many times. The planetary ecosystem cannot stand this, especially if the increased use is to be based on non-renewable fossil fuels. Threats

of global warming and acidification of the environment most probably rule out even a doubling of energy use, based on present mixes of primary sources.

Pattern and changes of energy use today are already dictating the patterns well into the next decade. We approach this question from the stand point of sustainability. The key elements of sustainability that have to be reconciled are

1. sufficient growth of energy supplies to meet the growing needs of Indian agriculture;
2. energy efficiency and conservation measures such that waste of primary resources is minimised; and
3. protection of the biosphere and prevention of more localised forms of pollution.

The energy specialists and agricultural economists will need to address these and other similar issues and help resolve them.

Removing Market Imperfections and Getting the Prices Right

In a well-functioning market, the price of a good or service reflects both its marginal value to the consumer and its marginal cost to the producer. So long as there is no divergence between the private and the social values and costs of these goods and services, the market system is likely to bring about the most efficient allocation of economic resources. However, it is true that in many situations, prices may be distorted and that a market economy may fail to allocate resource efficiently. Potential sources of market failure are (a) externalities; (b) incomplete or asymmetric information; (c) public or collective goods; and (d) imperfect competition. When market failures occur, appropriate government interventions are needed to improve upon the market performance and enhance the overall economic well-being. Economists can provide important insights into the circumstances in which government can intervene to improve upon the market performance, how it can do so in a cost-effective manner, and how the costs and benefits of such interventions are likely to be distributed.

Given the wide year-to-year and place-to-place fluctuations in agricultural production and given the inelastic demand for staple food grains, free market forces cannot be depended upon to safeguard the interests of farmers, and to attain and sustain food security in India. Therefore, government intervention in agricultural markets and marketing has been accepted as fully legitimate all over the world.

To enable Indian farmers to derive full benefits from the new liberalised world trade regime, it is necessary to remove various constraints and deficiencies in the existing domestic markets and marketing practices. The policy instruments that were developed and used to regulate markets and marketing in a food scarcity era need to be carefully reviewed and then scrapped if they are no longer necessary, or if they create unnecessary obstacles in the way of efficient marketing. Such instruments include administered prices, procurement of rice and sugar from millers/processors as levy, maintenance of buffer stocks, restrictions on inter-state trade/movement of food grains, purchase/sales taxes, rural development cess, monopoly procurement by the government, and so on.

Farmers' organisations, especially the Anand pattern producers' cooperatives, could play an important role in protecting the farmers from adverse effects of the new world trade regime and in enabling them to derive full benefits from it. With appropriate farmers' (cooperative) organisations at the secondary level for processing and marketing of agricultural produce, including high value export-oriented commodities, preponderance of small size of land holdings in India would not be a handicap (Vyas 1998: 14). The role of the State Agricultural Marketing Boards, Commodity Boards, Food Corporation of India (FCI) and State and National Agricultural Cooperative Marketing Federations also need to be re-examined in the light of new policy of privatisation, deregulation and globalisation.

In developing countries like India, most of the natural resources and their products are highly undervalued, and that has led to the over-exploitation of those resources and ecological degradation. Realistic pricing of natural resources and their products, and the recognition of the value of environmental amenities would promote more sustainable development.

Mainstreaming Gender in Development Strategy

Despite the fact that development cannot be sustained unless it is a joint responsibility shared by women and men, there has been a glaring lack of gender perspective in development strategies in both developed and developing countries of the world, including India. A gender perspective emphasises the relations between men and women, and the relationships that both men and women have with their social and natural environment. It recognises that the success of projects to foster sustainable development largely depends on the extent to which both women and men participate in project design, planning, implementation and monitoring. There are many ways of institutionalising a gender sensitive approach to sustainable development. The first and foremost requirement is the policy of equal development of both men and women in development projects. Next, women should be assigned specific roles, responsibilities and rights in making various decisions, rather than simply attending project meetings. Besides, the development project team, as a whole, has to be sensitised to gender issues if gender awareness is to be encouraged. The team also has to be trained and made responsible for the implementation of the gender sensitive approach. Finally, it is also important to clearly define the objectives to be achieved, measures to be employed to achieve each of the objectives and develop quality and process-oriented indicators in order to monitor the progress of the projects in achieving the intended objectives.

Creating a Congenial International Economic and Political Environment

Economic, political and ecological links between nations have grown rapidly. This has increased the vulnerability of the developing countries to the adverse consequences of

widening international inequalities in economic growth. The asymmetry in international economic relations compounds the inequalities, as developing nations are generally influenced by but are unable to influence international conditions.

International economic relationships pose a particular problem for developing countries like India trying to manage their environments, since the export of natural resources remains a large factor in their economies. The processing of certain raw materials, for example, pulp and paper, oil and alumina, can have a substantial environmental side-effects. Industrial countries have generally been more successful than developing ones in seeing to it that export product prices reflect the cost of environmental damage and of controlling that damage. Thus, in the case of exports from industrial countries, these costs are paid by the consumers in importing nations, including those in the developing countries. But in the case of exports from developing countries, such costs continue to be borne entirely domestically, largely in the form of damage costs to human health, property and ecosystems.

The inability and adverse price trends faced by most of these countries make it impossible for them to manage their natural resource bases for sustained production. The rising burden of debt serving and the decline in new capital flows intensify the forces that lead to environmental deterioration and resource depletion, occurring at the expense of long-term development.

International trade in fish, for example, is a major factor underlying the depletion of marine fisheries in India. Foreign exchange earnings from exports encourage many entrepreneurs and private companies to use large mechanised trawlers to harvest fish at a rate faster than that at which fish can be regenerated. This over-fishing not only accelerates the loss of species and genetic resources, but also causes the loss of livelihoods of those poor people who exclusively depend on fishing, and pollutes the sea (Singh 1997: 61).

The increase in protectionism in industrial countries stifles export growth and prevents diversification from traditional exports. A recent study of the International Monetary Fund (IMF) and the World Bank indicated that protectionism in the industrialised countries costs developing countries twice as much in lost export earnings as they receive in development assistance (Stoltenberg 1989: 22). According to Ekins (1991: 66–68), global trade, aid and debt are all inimical to the interests of the poor in the developing countries. It is only the rich in developed and developing countries who benefit from all these three power instruments of the North.

Growth in many developing countries also requires external capital inflows. Without reasonable flows, the prospect for any improvements in living standards is bleak. But as goods and capital flow freely within an integrated global economic system seeking highest short-term profits, national governments lose their ability to regulate and manage their own economies in the public interest and become puppets in the hands of the World Bank, IMF and other financiers, and subserve their interests. To attract investment funds, they offer cheap labour, weak environmental health and safety standards, low taxes, well-developed infrastructure and least restricted access to natural resources. All this results in the depletion of their natural resources and degradation of their environment at a faster rate.

A larger portion of total development assistance should go to investments needed to enhance the environment and the productivity of the resource sectors. Such efforts include reforestation and fuel wood development, watershed protection, soil conservation, agro forestry, rehabilitation of irrigation projects, small-scale agriculture, low cost sanitation measures and the conversion of certain crops into fuel. Experience has shown that most effective efforts of this type are small projects with maximum grassroots participation. The programmes most directly related to the objective of sustainable development may, therefore, involve higher local costs, a higher ratio of recurrent to capital costs and a greater use of local technology and expertise.

In the short run, for most developing countries including India, the new era of economic growth hinges on effective and coordinated economic management among major industrial countries designed to facilitate expansion, to reduce real interest rates and to halt the slide to protectionism. In the longer term, major changes are also required to make consumption and production patterns sustainable in a context of higher global growth.

MAIN POINTS

1. Sustainable development has recently risen to the top of international economic and political agenda. The report of the World Commission on Environment and Development (WCED) 'Our Common Future', was the first major international initiative that enhanced the awareness of policy makers about sustainable development. The United Nations Conference on Environment and Development (UNCED) held in Rio in June 1992 had heightened the global concern over deteriorating environment and the interest in the search for practicable strategies for sustainable development.
2. The concept of sustainability basically implies a characteristic of a system, a programme or a resource to last intact forever. Currently, there are two distinct concepts of sustainability in vogue. One, the economist's worldview of sustainability is concerned about the long-term constancy of economic output, income or consumption. Two, the ecologist's and biologist's concept of sustainability relates to long-term preservation of biosphere.
3. The WCED defined sustainable development as 'development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.' This definition emphasises the need for the present generation to ensure inter-generational equity by safeguarding the interest of future generations (inter-generational equity) through maintaining the natural resources capital of this planet intact.
4. Related to the term, sustainability, there are two notions of 'weak sustainability' and 'strong sustainability'. The former is defined as the maintenance of the value of the aggregate stock of capital. It implies that we can substitute human-made capital for natural capital in production and consumption, such that economic growth can be associated with improvements in environmental quality. By contrast, 'strong

sustainability' posits that natural and human-made capital are complements and cannot be substituted for each other in either production or consumption. Consequently, economic growth that uses natural resources and generates wastes must increase environmental degradation.

5. There are several indicators of non-sustainability of current patterns of production, consumption and economic growth. They include land degradation, degradation and depletion of water resources, degradation and depletion of forest resources, depletion of conventional sources of energy, loss of biodiversity, climate change and ozone layer depletion.
6. A review of various rural development programmes and policies followed in India after independence reveal four strategies of development, namely, holistic and equity-oriented strategy, growth-oriented strategy, welfare-oriented strategy, and facilitating and participatory strategy. The major strategy underlying the Community Development Programme (CDP) was holistic, designed to simultaneously achieve the goals of growth, welfare, equity and community participation. The growth-oriented strategy was adopted in the Intensive Agriculture District Programme (IADP), High Yielding Varieties Programme (HYVP), the welfare-oriented strategy in social programmes like the Minimum Needs Programme (MNP), Applied Nutrition Programme (ANP), Mid-day Meals Programme (MMP) and Old Age Pension Programme (OAPP), and the facilitating and participatory strategy in the OF programme.
7. Generally speaking, the following are some of the important elements of a pragmatic strategy for sustainable development: sustainable agriculture, food security and ecological security; judicious management of natural resources and natural disasters; optimal development and utilisation of human resources; alleviation of poverty and inequality through higher economic growth; reorienting technology and reducing risk; optimal use and management energy resources; removing market imperfections and getting the prices right; mainstreaming gender in development strategy; and creating a congenial international economic and political environment.

NOTES

1. According to a Green Media report dated 25 January 2006, over three lakh *sadhus*, who had assembled in Allahabad for Magh Mela which started on 14 January 2006, had launched an agitation complaining against the high level of pollution in the river Ganga in Allahabad, and demanding government intervention to prevent the pollution and keep the Ganga waters clean.
2. <http://www.sciencedaily.com/releases/2006/05/060527093645.htm>. Accessed in March 2008.
3. On the basis of a general survey of recent strategies of rural development followed in five Central American governments, John C. Ickis has identified three basic approaches, namely, growth, welfare and responsive strategies. For details, see John C. Ickis (1983).
4. India is one of the most flood prone countries in the world and accounts for one-fifth of the global death count due to floods. Over 30 million people are displaced annually due to the floods.

QUESTIONS FOR DISCUSSION

- 7.1. Are the current patterns of production consumption and economic growth in India sustainable? Yes/No. If yes, why; if no, why not?
- 7.2. What is the most important prerequisite of sustainable development?
- 7.3. Which of the two notions of 'weak sustainability' and 'strong sustainability' is more realistic under Indian conditions and why?
- 7.4. Write a critique of the growth-oriented strategy of development.
- 7.5. Compare and contrast the holistic strategy and facilitating strategy of development.
- 7.6. In this chapter, we have identified several indicators of non-sustainable development. List a few indicators of sustainable development.
- 7.7. Write a critique of the new strategy of sustainable development proposed in this chapter.

8

Policy Instruments of Rural Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define and illustrate the concepts of 'policy instrument' and 'policy measure';
- know the meaning and components of the conceptual framework for public policy as propounded by Nobel Laureate Jan Tinbergen;
- identify the relationship between various components of the conceptual framework, that is, social welfare function, policy goals and policy instruments;
- define the term 'Action System' in the context of development management and identify its components and utility and
- describe various types of policy instruments, that is, 'public finance', 'money and credit', 'direct controls', 'exchange rate' and 'changes in institutional framework', and the purposes for which they are used, when, how and by whom.

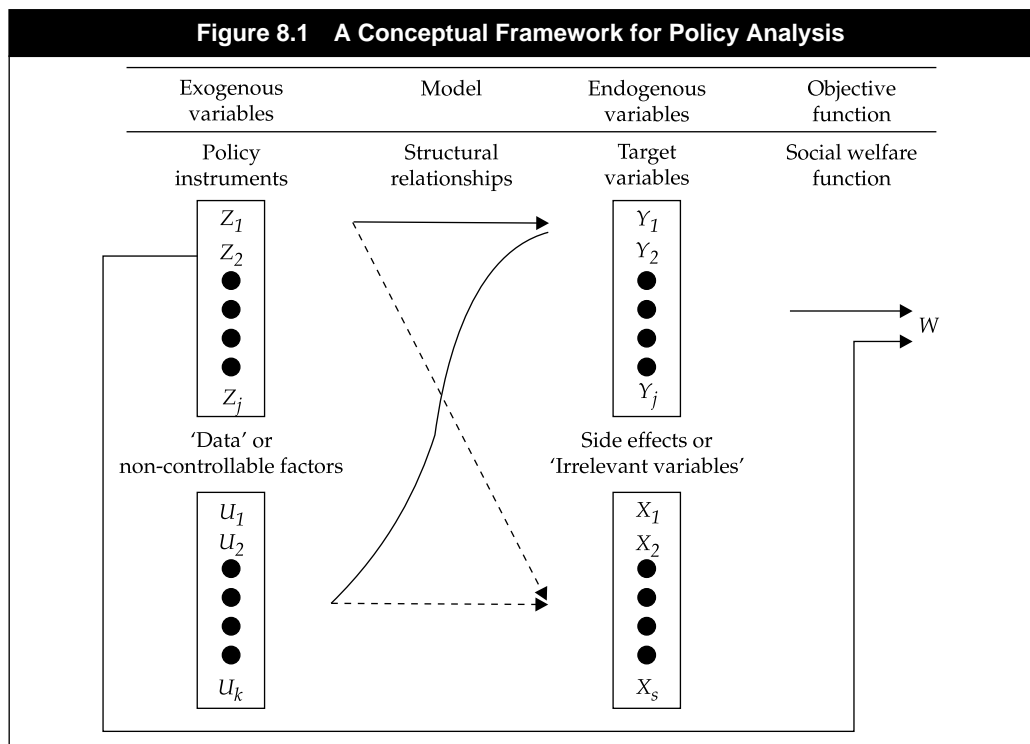
INTRODUCTION

An instrument is defined as something which a manager or an actor can change or manipulate in order to produce a desired effect. It may be an economic quantity such as interest rate, or it may be part of the institutional framework, such as

nationalisation of banks. An instrument, therefore, is the means by which an objective is pursued. A measure is the use of a particular instrument at a particular time in order to promote one or more objectives. For instance, the decision to raise the bank rate on a certain day, or to reduce income tax in a particular budget year, is an instrument. The removal of a measure, for instance, the removal of price control, is also a measure. Knowledge about what instruments can be used to achieve the objectives of various rural development programmes is essential for rural development policy makers and managers in order for these programmes to be effective and successful. This chapter is devoted to a discussion of some instruments which can be used by rural development policy makers, administrators and managers to achieve their objectives.

A CONCEPTUAL FRAMEWORK

Perhaps the most useful framework to illustrate the relationship among policy instruments, target variables and social welfare, and for policy analysis, has been provided by Nobel Laureate Jan Tinbergen (1952: Chapter 2). This is illustrated in Figure 8.1.



Source: Tinbergen (1952: Chapter 2).

The important elements of the framework for policy analysis are W , the Y_i , the Z_i and the structural relationships that link the Z_i to the Y_i . Each of these elements needs elaboration.

Social Welfare Function (W)

Economists call W the social welfare function. It reflects the level of well-being achieved by a society. As such, it represents the aggregate of the satisfaction reached by the individuals comprising the society. 'Utility' is 'consumed' ultimately only by individuals, and no social or community welfare function exists independent of the well-being achieved by individuals. Because no method has been found to measure utility or well-being, W is entirely psychological and subjective. It is nevertheless a useful concept, since it suggests that the end of all policy and planning is the well-being of people. It is well to emphasise that W consists of much more than purely economic factors. In fact, even the size and distribution of incomes extant in the society are really only the means to superior human ends. W is composed of such final ends as freedom, equality, justice, opportunity and security. Thus, social, political and cultural factors as well as economic ones must be included in any conceptualisation of welfare, and must be evaluated in any policy analysis. In a democratic society, W is best regarded as given to the policy makers, that is, W is the welfare function of the society, and not that of the policy maker. He must look outside himself for the society's ultimate values: to statutes enacted by the representatives of the people, to the constitution under which the people are governed, to rulings of the judicial system, and so on. Of course, the determination of precisely what the society's values are is often a difficult problem, the solution of which the policy maker may participate in, or give articulation to. But he should not assume the responsibility of deciding what social values should be.

Policy Goals (Y_i)

The Y_i are the articulated goals of policy. They are deduced from the values of W . An example will illustrate this. An element of W may be an improvement in the range of opportunities for the members of the society—the target goal may be a rise in per capita incomes by 5 per cent per annum, a rise in the literacy level to 70 per cent, or the complete eradication of poliomyelitis. It should be obvious that W and the Y_i are related, and the precise nature of the relationship between the two should be as clear as possible.

The policy maker may well decide the Y_i . In a democratic system, the people at the ballot box will judge the reasonableness of the Y_i chosen by the policy maker, as well as whether or not the targets are achieved. A great deal of thought and care should be given to the matter of selecting appropriate target variables.

It is especially important that the Y_i be framed in such a way that they are capable of being evaluated. Vaguely stated goals often cannot be. Contrast the following goals: (a) incomes should be increased; and (b) average annual per capita real incomes should be increased by 5 per cent. The first statement is general and vague and cannot be easily appraised. The second is specific and quantitative, and can be readily evaluated.

Policy Instruments (Z_j)

The policy instruments available to achieve the target goals are the Z_j . For example, to reduce unemployment to 5 per cent of the workforce (a target to be sought), various policies (Z_j) may be utilised. The government may increase the quantity of money in the economic system, believing that more demand for goods will ultimately reduce unemployment; or, a tax reduction may be given to businesses which invest in new capital equipment, under the theory that capital growth will produce more jobs. A great number of policies may be alleged to contribute to the accomplishment of the target. Policy analysis is largely composed of looking for—and evaluating—alternative ways to achieve the target goals. The great bulk of science, and most of economics, is concerned with these tasks.

Like any other scientific study, policy analysis should utilise scientific methods. Hypotheses that postulate how a given policy is expected to theoretically influence a given target, should be formulated. Experimentation is the process of determining whether or not in fact the policy works in the way expected. Scientists call the set of theoretical hypotheses a model, and this is the analytical bridge between policy instruments and target variables. Models must be tested, however, both for logical consistency and for empirical validity. A set of statistical relationships must be established that reveal the processes of getting from the Z_j to the Y_j , and how efficient the processes are.

It should be remembered that just as the Y_i are prescribed by the ultimate values of society, so are the Z_j , that is, the Z_j must be evaluated in terms of political and moral acceptability, as well as efficiency in reaching the target. Certain kinds of policies, accepted and even encouraged in one class of society, are anathema to another class. Most democratic or non-totalitarian societies would never permit policies which seriously compromise the rights of individuals.

Non-controllable Factors and Irrelevant Variables (U_k and X_s)

There are some factors that affect the targets, and which cannot be manipulated or affected by policy. In the framework above, these are the U_k . An example might be the weather. Any target of agricultural production would be affected by rainfall or by frost, but till now, man has been largely ineffective in controlling these factors. They must be treated simply as 'non-controllable' in any policy analysis, but nonetheless must always be recognised and accounted for.

Finally, some effects of policy do not apply to the targets, or do not directly enter the community's welfare function, but should nevertheless be monitored because they are potentially significant. These are the X_s in the above framework, and are called the 'side effects' of policy. A policy to shift the production of energy from steam engines to internal combustion engines will have side effects that will not be significant for most situations. Internal combustion engines produce a variety of invisible pollutants in the air that are not a problem, until they reach certain dangerous threshold levels. These types of side effects must be watched, but may not affect the evaluation of policy until they reach problem proportions, in which case they may be shifted into the category of Y_i .

So much for the policy framework. It is primarily a taxonomic device and should be of value in elucidating what is being sought, the available means of reaching what is being sought, and at what cost. It helps the policy maker to keep things straight. In most of the policy documents, this simple framework is not made operational or is not properly elaborated.

The model can also be expressed in the form of an econometric model, or mathematical programming model.

AN ACTION SYSTEM

In the context of development management, an action system may be conceived of as consisting of four elements: the manager/actor, the objectives, the conditions (physical, technological, economic, social and political), and the means or instruments. Their relationships can be indicated by a simple diagram, as shown in Figure 8.2 (Schickele 1954: 60).

The manager or actor may be an employee of a public, private, cooperative, corporate or any other entity. The manager in any given system makes the decisions as to what means should be employed towards a given objective or set of objectives.

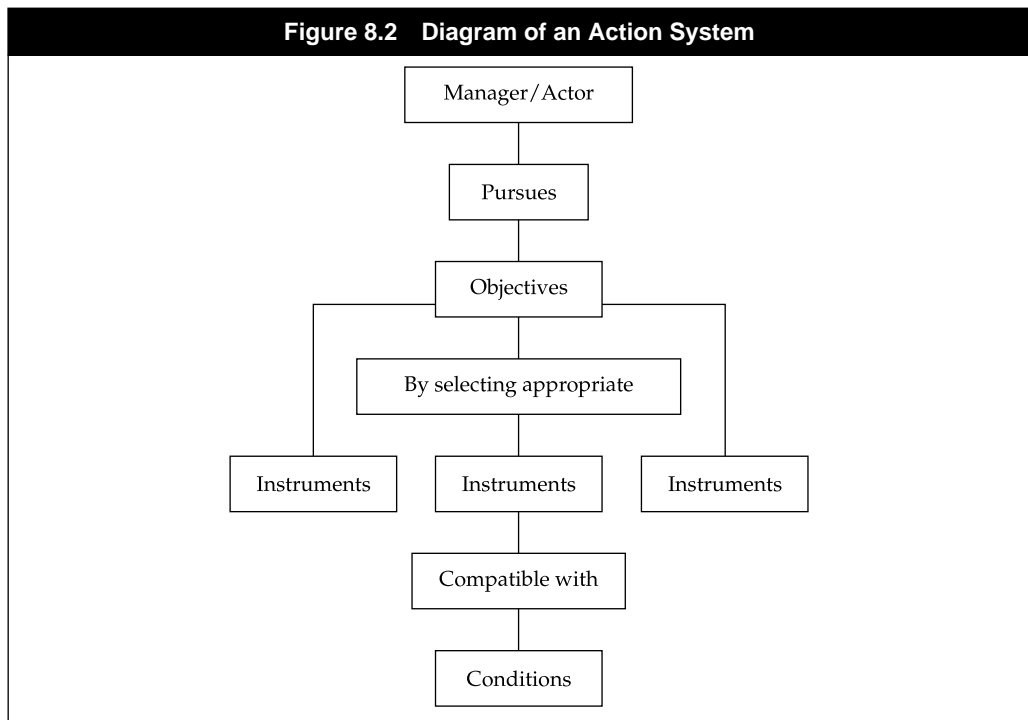
The objectives are what the manager wants to accomplish. They need to be clearly defined in operational terms.

The conditions of an action system are all those technical and institutional circumstances beyond the control of the manager, at least with respect to the particular programme under consideration. The instruments must be adapted to—or compatible with—the conditions under which the programme must operate.

The instruments are the policy measures or programme provisions employed to achieve the objectives. There are often many different instruments that could possibly serve a certain objective. Knowledge of economics is especially useful in making a wise choice in the selection of instruments.

POLICY INSTRUMENTS

The policy instruments can be grouped in the following five categories (Kirschen et al. 1964: Chapter 13):



Source: Schickele (1954: 60).

1. Public finance.
2. Money and credit.
3. Exchange rate.
4. Direct controls.
5. Changes in the institutional framework.

A brief description of some of the major instruments follows.

Public Finance

This set of instruments covers most income and expenditure of the central, state and local governments. Government expenditure is largely devoted to the objective of the satisfaction of collective needs.

The main occasion for the use of the instruments of public finance is the annual budget. Consequently, many (but not all) of these instruments can be employed at annual intervals only. Because these instruments involve sums of money paid in or out of government accounts, the statistical documentation is accurate. Not all items of government expenditure and income can be regarded as instruments of economic policy. There are some flows

which enter the public accounts, but which the government cannot, or does not, seek to change in order to achieve economic objectives. This is true, for instance, of the interest paid on public debt, the imputed rent of government buildings, sales of government goods and services, its income from property, and its depreciation allowance.

The financial transactions of public enterprises are excluded from public finance because, in general, public enterprises behave in the same way as private ones.

Classification

There are 17 instruments in this category, and they can be further classified as follows.

Two balances

1. The current balance, or government net saving.
2. The overall balance, or the change in the government's net claims on other sectors.

Governments use both the current and overall balances as instruments of economic policy. They frequently decide to first increase or reduce the size of the current or overall deficit or surplus, and subsequently decide which items of income or expenditure to adjust. In this sense, the use of the current and overall balances is a separate instrument from the use of items of income and expenditure.

The extent to which governments can use the current and overall balances is limited by the fact that it is not easy to cut back government expenditure. People have opposed the idea both of a budget current surplus and a budget current deficit.

Seven expenditure instruments

1. *Government (Public) Investment*: This is the most powerful of the expenditure instruments. But, in the short run, it is not always easy to change government investment. In the short run, the main form of government intervention is to advance or postpone the starting dates for public investment. Government investment is good for serving long-term objectives, and it is a major instrument of rural development in India.

Investment in agriculture in the form of capital formation is essential for sustaining the growth of agriculture. It is an important determinant of the pace and level of agricultural development. Investment is needed for creating basic infrastructural facilities, such as roads, markets, transport, communication, power generation, cold storage, irrigation, and so on. During the late-1980s and early 1990s, concern over the falling share of public sector capital formation in agriculture was articulated. With the presumption that there exists high complementarity between public and private capital formation, it is contended by various studies that a declining trend in the former is likely to have an adverse impact on overall capital formation

in the sector (Rath 1989; Shetty 1990). This might impede the overall growth of the sector and its contribution to the gross domestic product (GDP) may fall further. However, the complementary relationship between public and private sector capital formation in agriculture has also been questioned by some scholars. For example, in their study, Mishra and Chand (1995) conclude, *inter alia*, that in reality the exact nature of the relationship could be either of complementarity, substitution type or of mere independence. This could be established by the means of looking at the technical nature of the investment in public and private sectors, and their relationship. The study seeks to explain the behaviour of capital formation both in public and private sectors, and observes that growth in the private sector capital formation since 1987–88 has more than compensated for the decline in the public sector capital formation.

The state governments' policies relating to expenditure on agricultural sector do not seem to have an important role in influencing the public sector capital formation in agriculture. Purohit and Reddy (1999) observed in their study that there has been a declining trend in the budgetary outlay for agriculture. The latter has declined, both as a proportion of total revenue and capital budgets. Similarly, the public expenditure as a proportion of the total GDP has also declined. The falling share of state government expenditures on agriculture and allied activities seems to be a dominant factor in determining the currently declining share of the public sector in capital formation.

The falling public investment in agriculture has been a cause for concern because it is crucial for the development of infrastructure like irrigation, electricity, agriculture research, roads, markets and communications. The estimates of public and private investment in agriculture and allied sectors are presented in Table 8.1. As shown in the table, the share of total public and private investment has marginally declined from 2.5 per cent of the GDP in 2002–03 to 2.3 per cent in 2005–06.

The decline in public investment in agriculture calls for a review of our policies which have led to the diversion of scarce resources in the form of subsidies for

Table 8.1 Public and Private Investment in Agriculture and Allied Sectors in India at 1999–2000 Prices (Rs Crore)

Year	Investment			GDP at market price	Share (%) in GDP		
	Public	Private	Total		Public	Private	Total
2002–03	8,733	46,935	55,668	22,16,260	0.4	2.1	2.5
2003–04	10,805	43,035	53,840	24,02,248	0.4	1.8	2.2
2004–05	11,038	46,215	57,253	26,02,235	0.4	1.8	2.2
2005–06	14,144	49,987	64,131	28,42,478	0.5	1.8	2.3
Tenth Plan (2002–03 to 2005–06)	44,720	1,86,172	2,30,892	1,00,63,221	0.4	1.9	2.3

Source: Central Statistical Organisation, New Delhi, quoted in GoI (2006a).¹

fertilisers, rural electricity, irrigation, credit and other agricultural inputs, away from the creation of productive assets.

The establishment by the Government of India (GoI) of a Rural Infrastructure Development Fund (RIDF) under the National Bank for Agriculture and Rural Development (NABARD) in 1995–96 was a welcome step in the right direction. The Fund is being utilised for creating necessary infrastructure under the technical guidance and supervision of NABARD. With the initial corpus of Rs 2,000 crore under RIDF I in 1995–96, the cumulative accretion to the Fund had reached the level of Rs 60,000 crore under RIDF XII in 2006–07. The Funds lends to the state governments every year in tranches at the interest rate which is 0.50 per cent higher than the prevailing bank rate. Rural roads and irrigation projects have claimed the highest share in the Fund, accounting for about 40 per cent and 39 per cent of the corpus, respectively.

The United Progressive Alliance (UPA) government has adopted the National Common Minimum Programme (NCMP), an important component of which is creating and strengthening the basic infrastructure. For this purpose, it has launched a four-year (2005–09) programme called 'Bharat Nirman'. The programme seeks to achieve identified goals in six selected areas of rural infrastructure, which are irrigation, drinking water, housing, roads, telephony and electrification. In four of these areas, the aim is to have universal coverage, where every village will have telephony and electricity, and every habitation will have access to safe drinking water, and for a population of at least 1,000, or 500 in hilly/tribal areas, access to all-weather road.

2. *Subsidies and Capital Transfers to Enterprises*: Subsidies also are used as an instrument of rural development. They seek to change the behaviour of the users of production inputs and services by motivating them to use them in socially desirable quantities and ways. They could be used in two situations. First, when the private marginal benefit to the user at the socially optimum level of resource use is less than the social benefit, that is, when a positive externality exists. Second, when the marginal social cost of using an input at the level of private optimum is higher than the marginal private cost, that is, when a negative externality exists. In both the cases, subsidies abate the externalities involved—in the former, by equalising the marginal private benefits and marginal social benefits, and in the latter, by equalising the marginal private costs and marginal social costs. As in the case of taxes, aggregate welfare effects of subsidies also could be counter-intentional (Singh 1994: 80–81).

Subsidies are, in principle, fairly flexible, and they can be used selectively and given to any particular inputs, or type of activity, or a particular region. The main objective which this instrument can serve is protection and priorities, either to particular regions or to particular inputs or activities. The instrument can take several forms, such as the promotion of use of new inputs by subsidising their prices, promotion of investment (by subsidising interest rates) or exports, keeping down the prices of the products of rural industries, and thus helping to keep up

their sales. When subsidies on investments or exports are given for long periods of time, they serve the objective of expansion.

In India, subsidies are provided on food, canal irrigation water, electricity for agricultural uses, fertilisers, institutional credit to certain categories of borrowers, and purchase of certain income-generating assets by the poor under poverty alleviation and employment programmes, such as the Integrated Rural Development Programme (IRDP), Million Wells Scheme (MWS) and the Ganga Kalyan Yojana (GKY). Table 8.2 presents the quantum of subsidies on three major inputs—fertilisers, electricity and canal water—used in Indian agriculture. As shown in the table, there has been a substantial increase in the quantum of subsidies granted to all the agricultural inputs over the period of time considered.

Table 8.2 Amount of Subsidies Granted to Indian Agriculture

Year	Fertilisers	Electricity*	Irrigation [@]	Other subsidies [#]	(Rs crore)
					Total
1980–81	505	334	581	NA	1,420
1990–91	4,389	4,605	2,468	NA	11,462
2000–01	13,800	6,056	13,465	2,686	36,007
2003–04	11,847	**	11,142	4,018	27,007
2004–05	16,127	**	12,990	NA	29,117

Sources: For the years 1980–81 and 1990–91, Acharya and Jogi (2007: 98); and for the other years, GoI (2006a)².

Notes: * Includes all subsidies provided to Electricity Boards and Corporations. Separate estimates of electricity subsidy for agriculture are not available.

** Separate estimates of subsidy for electricity exclusively provided to agriculture are not available.

@ The excess of operating costs over the gross revenue is treated as imputed irrigation subsidy.

This includes the subsidies provided to marginal farmers and Farmers' Cooperative Societies in the form of seeds and development of oilseeds, pulses, and so on.

In the wake of the new economic policy, there is a strong pressure on the government from the World Bank and the International Monetary Fund (IMF), as also from certain sections of the Indian society, to phase out all kinds of subsidies. However, the government has so far withstood all the pressures, as it is a politically hazardous decision for any government to withdraw subsidies given to the rural sector, which constitutes the biggest vote bank and, hence, determines the fate of political parties. Besides, there is also a strong economic rationale for subsidies to the rural sector. First, the rural sector produces and supplies the basic necessities of life to people and, thus, provides food security, for which no amount of cost (subsidies) is high enough. Second, it has been established through empirical studies that Indian agriculture is net-taxed, that is, considering the producer prices of agricultural produce and the input prices paid by the farmer vis-à-vis the corresponding world prices, the agricultural sector gives more to our society than it receives from it in terms of subsidies and grants (Gulati 1989: A57–A65; Gulati and Sharma 1992: A106–A116). Third, the extent of the subsidies in Indian agriculture is much less than in many developed countries, such as the USA, Canada, Denmark, Japan, and so on.

A simple rule of thumb in determining whether to provide a subsidy or not is to compare the estimated loss of revenue due to the subsidy and estimated gains to the beneficiaries of the subsidy (consider both gains in the producer surplus and the consumer surplus). If the gains exceed the loss, then the subsidy is economically justified. A serious weakness of this instrument is that it is very difficult to withdraw a subsidy once it is granted. Politically, it is highly undesirable for popular governments to withdraw subsidies even when they are no longer justified on economic grounds.

3. *Transfers to Households*: Governments in many developed countries pay pensions to old people, sickness allowances to invalids, unemployment benefits, and so on. Such expenditure is financed partly by contributions paid to the social security agencies and partly by transfers from the central government. Although this expenditure is large, it is not of great value as an instrument of economic policy, certainly not for a short-term policy. Its influence is mainly limited to its effects on income distribution—transfer from taxpayers to lower income groups. In India, this instrument so far has been of relatively minor importance. However, a significant step in this direction was taken by the central government by launching, on 15 August 1995, a National Social Welfare Programme (NSWP). The programme comprises three components, namely, the National Old Age Pension Scheme (NOAPS), the National Family Benefit Scheme (NFBS) and the National Maternity Benefit Scheme (NMBS) (GoI 1997a: 53–54).
4. *Government Stock Changes*: Governments sometimes build up stocks themselves by direct controls or subsidies for the satisfaction of collective needs and security of supply; for example, stockpiling of food grains, minerals, metals, coal, and so on. Stockpiling of wheat, rice and sugar represents the use of this measure in India. Stocks of food grains consist of buffer stocks and of operational stocks. Buffer stocks include the base level stocks which cannot be pulled out of the system, and operational stocks are those which are used to reduce fluctuations in availability and prices of food grains, and to reach the food grains to the poor at reasonable prices through fair price shops under the revamped public distribution system (PDS).
5. *Current Purchases of Goods and Services*: This instrument can be selective; for example, purchases in a particular region or from a particular subsector. Purchases can be delayed or advanced, with the objective of price stability or full employment. Some governments try to concentrate their orders, particularly their military orders, in periods of slackening economic activity. There are many examples of current purchases of goods by the central and state governments in India.
6. *Wages and Salaries*: Governments do not often attempt to manipulate their wage and salary bill for purposes of economic policy. Some expenditure on in-service education or training can serve to increase the mobility of labour or to improve income distribution. In India, wages and salaries in the public and organised sectors are linked to the cost of living index and, hence, are revised from time to time to neutralise the effect of inflation on incomes.
7. *Transfers to the Rest of the World*: This is not a very important instrument in India. Transfers are usually made to poor countries and international institutions like the United Nations Development Programme (UNDP) and the International Labour Organisation (ILO).

Eight revenue instruments

1. *Direct Taxes on Incomes of Households:* There are fairly strict limits on the extent to which governments, in times of peace, can increase their revenue from personal income tax. First, this tax is very unpopular with the middle and upper income groups. Second, it is a tax which is often avoided or evaded, and the higher it is, the greater is the temptation to evade it. However, direct taxes are very important in an economic policy because they are progressive, they redistribute income and they act as built-in stabilizers; their yield varies more than incomes and, therefore, stimulates demand in periods of depression and reduces it in boom periods, thus serving the objectives of full employment and price stability. With a 'pay as you earn' system, there is not much time-lag before the stabilising action comes into play. In India, income from agriculture is exempt from tax mainly because (a) most of the 91 per cent of farms having landholdings of four hectares or less are not financially viable, and their income is well below the level of income exempted from income tax under the Income Tax Act 1961; (b) it is very difficult and costly to assess farm incomes correctly; and (c) the cost of collection of the tax is very high vis-à-vis the revenue collected.
2. *Direct Taxes on Enterprises' Incomes:* Company profits are taxed as a whole, that is, with no distinction between distributed and undistributed profits. They also have an automatic anticyclical effect, as in economic fluctuations, profits tend to vary more than national income as a whole. Investment can be encouraged by special depreciation allowances.
3. *Indirect Taxes on Internal Transactions:* They are the largest of the income instruments and have two great advantages. First, they are politically convenient because their incidence is less obviously painful than those of income taxes. Second, they can be made highly selective. One minor disadvantage of these taxes is that there may be awkward economic effects if people expect a change; there may be a rush of anticipatory buying if they think the tax will go up, or demand may fall sharply, if they think the tax will fall.
4. *Customs Duties:* Export duties are rarely used, but import duties are used universally. They can be both flexible and selective, but their use is limited by international agreements and the fear of reprisals by foreign governments. The main purpose of the imposition of these duties is protection, usually of particular industries and particular commodities. In India, until the end of the 1980s, both imports and exports of agricultural commodities, excepting tea, coffee, tobacco and spices, were restricted through tariff (customs duties) and non-tariff barriers. But now, under the new trade policy, import duties on most of the agricultural commodities have been drastically reduced or completely waived.
5. *Social Security Contributions:* They have been rarely used as instruments of economic policy. They have a regressive effect on income distribution.
6. *Taxes on Property:* They include both taxes on wealth, and separate taxes on land and buildings, and serve as instruments for the distribution of incomes.

7. *Succession Duties and Inheritance Tax*: They have some effect on income distribution.
8. *Transfers from the Rest of the World*: Donations from the rich to the poor countries are important aids to development.

Constraints on the use of the instruments of public finance

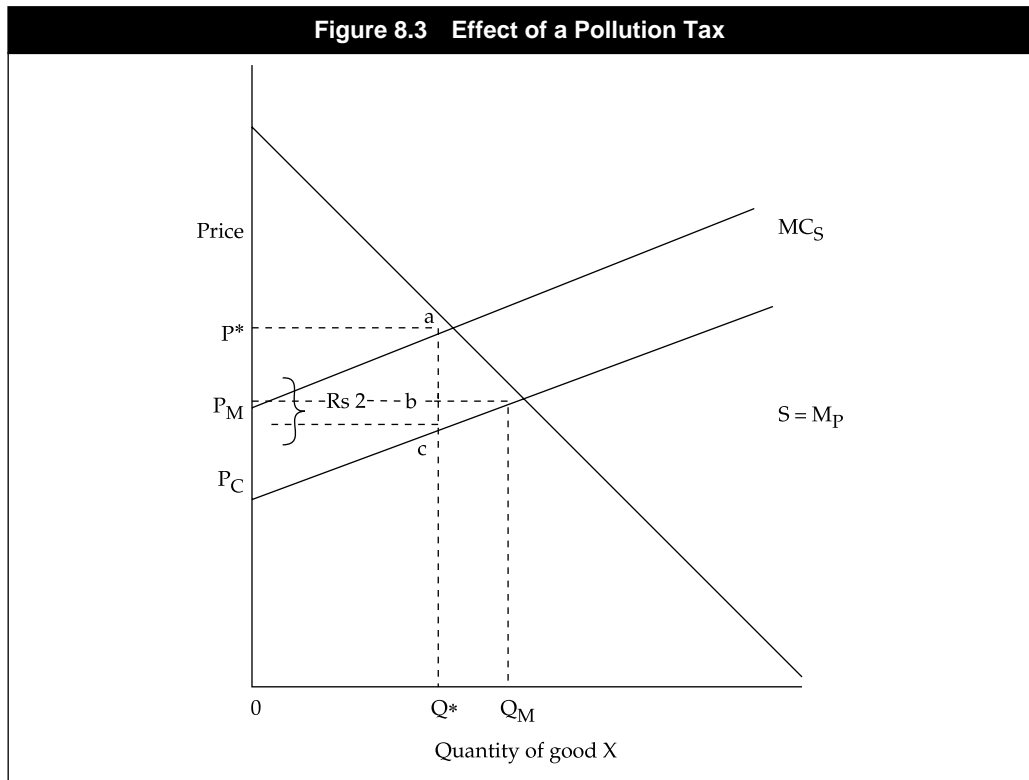
The main purpose of public expenditure is to satisfy collective needs, and this limits the extent to which it can be manipulated for other objectives. Political pressures and pressure groups can have a very strong influence on policies in the field of public finance.

Taxation is the most widely used policy instrument. It was Pigou (1962) who had argued that taxes and subsidies could be used to encourage economic agents to internalise externalities, that is, the unintended side effects of economic activities. The logic of taxation schemes is to raise the private costs of entry and/or use (or equivalently to lower the benefits) to the point where individual action will result in the socially optimum level of production of a good, whose production involves a negative externality (pollution).

Figure 8.3 depicts the typical supply and demand curves for a good X. However, in this case, we have labeled the supply curve $S = MC_p$ because it represents the marginal private costs associated with producing the good. The free market equilibrium output and price are Q_M and P_M , respectively. Now suppose that there is a negative externality (pollution) associated with the production of each unit of the good X, then the MC_p curve would not represent the real costs to society of the good. If each unit of the good produced imposes an externality costing Rs 2 on a third party, then the true marginal social cost will be MC_s . The pollution tax shifts the private marginal cost curve, MC_p , upward by Rs 2 at every point to MC_s in the figure. Q^* is the socially optimum level of production of good X and P^* is the socially optimum price at the new intersection between the demand curve and MC_s . Thus, by internalising the social costs of pollution, the actual output of the polluting good X is reduced from Q_M to Q^* while the price charged to the consumer rises from P_M to P^* , and the price received by the producer is reduced from P_M to P_C . Depending upon the relative elasticities of the demand and supply curves, the burden of the pollution tax is shared by both consumers and producers. In our example, the consumer pays ab and the producer bc of the total tax ac . Thus, the pollution tax affects both producers' and consumers' behaviour.

It is important in this context to realise that the aggregate effect of a tax could be counter-intentional, if there were no restrictions on the number and the size of firms in an industry causing a negative externality, say, water pollution. This is so because, although the contribution of each individual firm to pollution after taxation would be smaller than before taxation, all the firms together are likely to generate more pollution than what can be assimilated by the water body into which the effluents are discharged (Bromley 1991: 62–63).

There are two important issues in using taxation as an instrument of equalising social and private costs, and social and private benefits. First, how should the tax be administered: on yield or produce or inputs? Second, how should the tax revenues be used? A method commonly suggested in the literature for levying tax has been first to



Source: Author.

consider alternative specifications of technology and resource growths, and then to study the adjustment of prices and yield rates until (if ever) a steady rate emerges. While the details vary slightly, the principal conclusions on this issue are that optimal taxes exist and can be levied on either inputs or outputs, and that when harvesting requires more than one input and when at least one input is fixed, the optimal tax policy needs to differentiate between the inputs or must tax outputs. Price uncertainty is shown by Anderson (1982) to favour a tax on revenue (an income tax). Another important determinant of tax policy is whether the stock of the resource and of harvesting capital is above or below the optimal level.

Ciriacy-Wantrup (1968: Chapter 13) discusses in detail the various aspects of taxation as a tool of conservation policy. His major conclusions are:

1. progression in taxation tends towards conservation and regression towards depletion;
2. a high tax on income (from a resource) in conjunction with a lower capital-gains tax may result in conservation;

3. yield taxes are superior to most other taxes in terms of economy and accuracy of assessment and administration, but are inferior to net revenue taxes from the standpoint of ability to pay and social justice; and
4. lumpsum taxes are inflexible and generally regressive, and may, therefore, lead to depletion.

A simple rule of thumb in determining whether to levy a tax or not is to compare the estimated loss of revenue/utility to the taxpayer and others who use the resource/resource commodity (consider both the loss of the producer surplus and the loss of the consumer surplus) and the estimated gain of revenue to the tax authority. If the gains exceed the loss, then the tax is economically justified. A serious weakness of this instrument is that it is politically very inconvenient to levy a new tax, particularly a direct tax (Singh 1994: 77–80).

Instruments of Money and Credit

This set of instruments includes those which serve to make it either more difficult or easier for persons, companies or governments to borrow money. In contrast to budgetary measures, which can be described as open decisions openly arrived at, a great deal of mystery and mystique surrounds monetary and credit policy. It is not always possible to find out exactly what is being done.

The government and the Reserve Bank of India (RBI) are responsible for promulgating these instruments. The list of instruments may be classified as follows:

Government's New Borrowing and Lending

1. Lending abroad.
2. Lending to households and enterprises.
3. Borrowing from abroad.
4. Borrowing from households and enterprises.

Government Operation in Existing Debt

1. Open-market operations in short-term securities.
2. Other open-market operations.

Interest Rate Instruments

1. Bank rate.
2. Legal imposition of maximum rates.
3. Government guarantees of loans.

Instruments Acting on Credit Creation by Banks

1. Reserve ratios (Statutory Liquidity Ratio and Cash Reserve Ratio).
2. Quantitative stops on advances.
3. Approval of individual loans.
4. Other directives, recommendations and persuasion.

Instruments Acting on Lending or Borrowing by other Agents

1. Control of borrowings of local authorities and nationalised enterprises.
2. Control of borrowings of private companies by new issues.
3. Control of hire purchase transactions.
4. Control of other financial institutions.

Instrument of Exchange Rate

This instrument has the following three main features:

1. It is extremely powerful, can have considerable effects on the economy of the country concerned, and also on the countries from which it imports and exports.
2. It has a strong emotional content. The exchange rate of a country's currency gives its price in terms of gold and foreign currencies. Any reduction in this price is considered a kind of national defeat.
3. Further, any reduction brings with it the risk that it will lead to a loss of confidence in the national currency. Moreover, it leads to price rises and changes in the distribution of incomes, which seem particularly perilous.

The exchange rate is a single instrument and not a family of instruments. But there are different types of exchange rates and, consequently, different types of changes in them. The exchange rate can be single or multiple, fixed or floating.

Decisions to alter the exchange rate are, of course, national decisions. But foreign and international influences can often be very important. In most countries, it is the decision of the cabinet, and it is the Prime Minister and Minister of Finance who together take the responsibility of changing the exchange rate. Parliament is virtually never concerned with the decision to devalue or revalue. The rules of the IMF require that all member countries should consult the Fund and obtain its prior approval to all changes of 10 per cent or more.

Changes in exchange rate must either be revaluations or devaluations. The objectives of revaluation are price stability, and to a lesser extent, the international division of labour. Devaluations are always meant to improve the balance of payments, sometimes to expand production and also for the international division of labour.

If there is some unutilised capacity in the country which devalues (whereas the countries which buy its exports are fully employed), then its elasticity of supply will be

high enough for it to be able to meet the increased demand for its exports. If the country which devalues is fully employed, devaluation might worsen the balance of payments. Devaluation can be used as a method of increasing employment in an underemployed country, since it stimulates exports and holds back imports.

As most of the resource-based commodities produced in India are internationally traded or tradable (for example, tea, coffee, spices, jute, cotton, fish, rice and rubber), or are substitutes for tradable commodities (for example, natural gas, lignite and hydropower), an overvalued exchange rate would reduce their depletion by reducing their price relative to non-tradable goods (for example, transport, services and construction). An overvalued exchange rate and export taxes have similar effects in that they discourage exports (and encourage imports) of resource-based commodities, thereby reducing the pressure on the domestic resource base. Increased exports of primary commodities may have an adverse effect on the environment, unless the prices of inputs and outputs involved fully reflect the true scarcity of the resources being used and the environmental costs incurred.

Reduction of export duties on certain crops, such as horticultural and plantation crops, helps diversify the economy away from soil-eroding crops, such as rice and sugarcane, and towards high value perennial export crops, such as fruits, tea, coffee and rubber with positive environmental side effects. Increased incentives for perennial crops vis-à-vis annual field crops, such as cotton and rice, can help protect the soil on gentle slopes but are not a substitute for natural forest cover on steep or fragile slopes. India could use tariff reform as an opportunity to favour import or manufacture of environmentally benign technologies and machinery, and discriminate against highly polluting technologies.

There is a tendency for exchange rate to be used as an instrument of last resort, when all other weapons which serve the same objectives have failed. There is a strong hostility to the use of this instrument among politicians, certain pressure groups and the public in general.

The Instruments of Direct Controls

Direct controls are powerful instruments of economic policy. They can take effect very quickly and they can be selective. Because of their quick effect, these instruments are particularly used in crises, emergency and periods of war, and to deal with short-term economic problems. The results are graduated and fairly precisely calculable. In general, direct controls are less effective in dealing with long-term problems than with short-term ones.

Three main categories of this set of instruments can be identified.

Control of Foreign Trade, Foreign Exchange and Immigration

1. Control of private imports.
2. State import trading.

3. Control of private exports.
4. Exchange control.
5. Control of immigration.

Control of Prices

1. Price control of goods and services.
2. Rent control.
3. Dividend control.
4. Control of wages.

Other Controls on the Internal Economy

1. Control of investment.
2. Raw material allocations.
3. Control of operations.
4. Regulation of conditions of work.
5. Control of exploitation of natural resources.
6. Rationing of consumer goods.
7. Quality controls and standards.

Direct controls are normally administered by the ordinary civil service departments. Sometimes special institutions are set up for this purpose. In the field of international trade, decisions are taken in the framework of international institutions and agreements.

Direct controls are very effective in the short-term in holding back economic activity, but they are much less effective in stimulating it. Businessmen and consumers can be prevented by controls from doing certain things, but it is often virtually impossible to compel them to take positive action.

Direct controls have also been used much more to deal with short-term than with long-term or structural problems. Controls do not, as a general rule, modify the underlying market forces which brought about the situation which needed control. Consequently, two things may happen in the long run. First, the market forces which are held back by controls in one sector may break out in another. Second, if it is in the interests of both consumers and producers to evade the controls, then as time goes on, evasion is likely to become more widespread; black markets will spring up and administration will become more expensive. Finally, there is a cultural dimension. In societies like India, where there is a little respect for the law and where the reflex is to violate the law rather than to obey it, this form of intervention is likely to be less effective and more expensive than in societies where there is respect for the law. For all these reasons, the use of regulatory instruments in isolation from other measures is unlikely to be the least cost method of achieving rural

development objectives in many cases. Control and regulation compares unfavourably with the use of market-based approaches, such as taxes and emission charges.

With this instrument, as with others, there are psychological complications to be taken into account. Any prior warning that controls may be imposed will cause consumers to stock up.

Changes in the Institutional Framework

The instruments described so far have all been instruments which are used within the existing institutional framework, and the changes made in these instruments can be quantified. Changes in the institutional framework do not lend themselves easily to quantification, and usually require a change in the laws. Since it takes time to change the institutional framework, these changes are usually made with long-term rather than short-term objectives in mind. But there are occasions on which the institutional framework are changed in order to facilitate the use of the instruments for short-term policy. The nationalisation of 14 major commercial banks in India in 1969 is a good example of the use of this instrument.

There are the following three categories in this set of instruments:

Institutional Changes Involving Other Instruments

1. Changes in the system of transfers to households (Public Finance).
2. Changes in the system of subsidies to enterprises (Public Finance).
3. Changes in the tax system (Public Finance).
4. Changes in the credit system (Money and Credit).
5. Changes in the system of direct controls (Direct Control).

Institutional Changes Directly Affecting Production

1. Agricultural land reforms.
2. Changing the conditions of competition (restriction on monopolies).
3. Changes aimed at increasing labour's influence in management.
4. Changes in the extent of public ownership in industry.
5. Creation of national institutions.

Institutional Changes in the International Framework

This includes the creation of international institutions, such as the IMF, the UNDP, the World Trade Organisation (WTO), and so on.

There are the following constraints on the use of changes in the institutional framework:

1. The establishment of a new institution or a major change in the institutional framework is usually a fairly major policy step which often meets with more opposition than does the use of an existing instrument.
2. Since changes of this kind usually involve new laws, they have to go through a lengthy procedure of parliamentary approval.

In a developing country like India, institutional changes constitute the most important instrument of promoting rural development. Institutional changes, particularly land reforms, contributed significantly to agricultural development in China and Taiwan. In India, although the process of institutional reforms was initiated in the early 1950s, it is not yet complete, and rural development still continues to be stifled by the lack of appropriate institutions and organisations.

Creation of new markets, creation of property rights and Public Interest Litigations (PIL) are some of the of policy instruments that can help in internalising environmental damages on the production side because the government creates a market to use the environment as a waste sink or issues pollution permits. These rights can be traded, that is, bought and sold like any other commodities. Tradable pollution permits are good examples for market creation, as they allow a company to buy or sell the rights to pollute the environment with an allowable level of pollution. This ensures that a specific level of pollution or emission will be attained at the lowest cost to society.

The creation and assignment of property rights can be used to internalise an externality and it does not matter, in terms of economic efficiency, as to which party (the party causing the externality or the party suffering from the externality) is assigned the right. Economic efficiency will be achieved as long as property rights are fully allocated and that completely free trade of all property rights is possible. The importance of this instrument is in demonstrating that it does not matter who owns what initially but only that everything should be owned by someone. Trade will place resources in their highest value occupation eventually. In India, this instrument has been used for averting the degradation of common pool³ wastelands by creating private property rights and conferring them on the poor landless households.⁴

Thanks to the growing judicial activism in India, the instrument of PIL is now being used quite frequently for resolving environmental problems. We have numerous examples of cases in which High Courts and the Supreme Court (SC) in India, *suo moto*, or in response to PILs have pronounced orders for relocating polluting industries out of cities, using compressed natural gas (CNG) in place of diesel for operating buses and auto-rickshaws in several cities, including Delhi, and keeping the cities clean by institutionalised collection and disposal of garbage by the municipalities/municipal corporations concerned. For illustration, we would like to present a gist of a few of the significant environmental decisions taken by the SC in 1996 (Box 8.1).

Box 8.1 A Few Examples of Court Orders for Prevention of Pollution

8 July 1996: The SC orders closure of 168 Delhi-based industries by 30 November 1996, and directs the Chief Secretary, Delhi government, to fix responsibility on government officials who had been negligent in their duty.

6 August 1996: The SC orders closure of 69 foundries in Howrah, West Bengal, following their failure to install pollution control devices.

28 August 1996: On the basis of a petition from the Vellore Citizens Welfare Forum, the SC imposes fines of Rs 10,000 on each of the 700-odd tanneries in Tamil Nadu, and asks them to pay compensation for polluting the environment; the tanneries are also asked to install pollution treatment plants before December.

9 October 1996: The SC orders closure of 39,000 illegal industrial units operating in residential areas in Delhi.

11 December 1996: The SC orders closure of aqua-culture farms within 500 metres of the coast along India's 6,000 km coastline by 31 March 1997; it also passes the directive that employees of the farms be paid six years' compensation in lieu of loss of employment.

19 December 1996: The SC directs shifting of 550 tanneries located in east Calcutta by 30 September 1997, and the setting up of an environment pollution fund, with each unit depositing Rs 10,000 as fine. This money is to be used for restoring the pollutant-ridden Hooghly river.

Source: CSE (2001: 161).

MAIN POINTS

1. An instrument is defined as something which a manager or an actor can change, or manipulate in order to produce a desired effect. It may be an economic quantity, such as interest rate, or it may be a part of the institutional framework, such as nationalisation of banks. An instrument, therefore, is the means by which an objective is pursued. A measure is the use of a particular instrument at a particular time in order to promote one or more objectives; for instance, the decision to raise the bank rate on a certain day, or to reduce income tax in a particular budget year.
2. The most useful framework to illustrate the relationship among policy instruments, target variables and social welfare, and for policy analysis has been provided by Nobel Laureate Jan Tinbergen. The model relates the main goal of a policy to various targets, and instrument variables and helps the policy makers in making rational choice of instruments for achieving the specified targets/objectives of the policy. In most of the policy documents this simple framework is not made operational, or is not properly elaborated.

3. In the context of development management, an action system may be conceived of as consisting of four elements: the manager/actor, the objectives, the conditions (physical, technological, economic, social and political) and the means or instruments.
4. To achieve the objectives of a rural development policy efficiently, it is necessary that a set of appropriate instruments be identified for each of the objectives of the policy, and that the chosen instruments are set at their optimal levels. Identification of appropriate instruments and determination of their optimal levels are both better done by public policy analysts than anyone else.
5. Choice of appropriate instruments needs to be made carefully, keeping in view the prevailing socio-economic and political environment. In many cases, instruments are not properly selected, and their levels are not consistent with the objectives they seek to achieve. This results in the wastage of valuable public resources and unnecessary delays in achieving the objectives.
6. The policy instruments can be grouped in the following five categories: (a) public finance; (b) money and credit; (c) exchange rate; (d) direct controls; and (e) changes in the institutional framework.
7. Of all these types of instruments, subsidies, public investment and taxes which belong to the 'public finance' category are most commonly used in India for achieving the objectives of agricultural and rural development programmes.
8. Direct controls are powerful instruments of economic policy. They can take effect very quickly and they can be selective. Because of their quick effect, these instruments are particularly used in crises, emergency and periods of war, and to deal with short-term economic problems. Controls do not, as a general rule, modify the underlying market forces which brought about the situation which needed control and, in most cases, they lead to emergence of black markets and corruption.
9. In a developing country like India, institutional changes constitute the most important instrument of promoting rural development. Institutional changes, particularly land reforms, contributed significantly to agricultural development in China and Taiwan. In India, although the process of institutional reforms was initiated in the early 1950s, it is not yet complete, and rural development still continues to be stifled by the lack of appropriate institutions and organisations.
10. The instrument of Public Interest Litigation (PIL) is now being used quite frequently for resolving environmental problems. We have numerous examples of cases in which High Courts and the Supreme Court of India, either *suo moto* or in response to PILs, have pronounced orders for relocating polluting industries out of cities, using Compressed Natural Gas (CNG) in place of diesel for operating buses and auto-rickshaws in several, cities including Delhi, and keeping the cities clean by institutionalised collection and disposal of garbage by the municipalities/municipal corporations concerned.

NOTES

1. <http://dacnet.nic.in/eands/agStat06-07htm>. Accessed in March 2008.
2. <http://dacnet.nic.in/eands/agStat06-07htm>. Accessed in March 2008.
3. In common pool resources (CPRs), property rights are not clearly defined and, hence, they are vulnerable to degradation, encroachment and misuse.
4. See for details, Singh and Shishodia (2007: Chapter 8, Section 8.4.3).

QUESTIONS FOR DISCUSSION

- 8.1. Citing an example, differentiate between an instrument and a measure.
- 8.2. Write a critique of Tinbergen's policy framework. Can it be expressed in the form of an econometric model, or mathematical programming model? Yes/No and how?
- 8.3. In the context of development management, what is relevance of an action system.
- 8.4. In what circumstances, the use of 'changes in the institutional framework' as a policy measure is desirable and why? What are its limitations?
- 8.5. Examine the pros and cons of using 'direct controls' as a policy measure in India.
- 8.6. Cite a few examples when the instrument of 'public finance' has been used in India to achieve certain objectives of a rural development programme.
- 8.7. For what purposes can we use the instrument of 'exchange rate'. What are the limitations of this instrument?

9

Equity-oriented and Growth-oriented Programmes

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- describe the contexts of various equity- and growth-oriented rural development programmes and their main objectives;
- describe the salient features of various equity-oriented rural development programmes, such as the Community Development Programme (CDP), Training of Rural Youth for Self-Employment (TRYSEM) scheme and Small Farmers, Marginal Farmers and Agricultural Labourers Project, and major lessons of experience with them and
- illustrate the salient features of various growth-oriented programmes such as the Intensive Agriculture District Programme (IADP), Intensive Cattle Development Project (ICDP), High Yielding Variety Programme (HYVP) and Operation Flood (OF) programme, and lessons of experience with them.

INTRODUCTION

India has a very long history of experimenting with various approaches to rural development. Even in the pre-independence era, a number of rural reconstruction experiments were initiated by nationalist thinkers, social reformers and

missionaries. Well known among them were the Gurgaon Experiment of F. L. Brayne (1920), the Marthandam Experiment of Spencer Hatch (1921), the Sriniketan Experiment of poet Rabindra Nath Tagore (1920s), the Sewagram Experiment of Mahatma Gandhi (1933), the Firka Development Scheme (1946) and the Etawah Pilot Project of Albert Mayer (1948). Besides these experiments in rural development, various departments of the government, such as Agriculture, Cooperation, Irrigation, Health and Education had also tried in their own way to address rural problems falling within their respective jurisdictions.

Since the launch of the First Five Year Plan in 1951–52, the government has initiated numerous agricultural and rural development programmes from time to time. For orderly presentation, we have classified these programmes into the following three broad categories:

1. Equity- and Growth-oriented Programmes.
2. Poverty and Unemployment Alleviation Programmes.
3. Natural Resources and Infrastructure Development Programmes.

Given the limited space available here, it is not possible to present a detailed account of each of the rural development programmes launched in India so far, nor is it of great relevance and interest to the contemporary rural development student to get bogged down with the details of those programmes. In our opinion, it would suffice to present briefly some of the salient features of the major programmes and the lessons learnt from their experience. Accordingly, we have chosen to devote a chapter to each of the three categories of the programmes. In this chapter, we present an abridged account of a few major rural development programmes that were aimed at promoting equity in terms of distribution of benefits of development, and growth in terms of increased production using new technologies. The main objective of the chapter is to familiarise the student with the nature, strategy, objectives and contents of those programmes, and the lessons thereof.

EQUITY-ORIENTED PROGRAMMES

A brief presentation of the salient features of the major programmes that fall in this category follows.

Community Development Programme (CDP)

The CDP was India's first large-scale, well-planned and organised initiative for promoting agricultural rural development with the main focus on equity. It was launched in October 1952. We now briefly describe some of its salient features.

The Genesis

Launched in 1943, in the wake of the Bengal famine, the Grow More Food Campaign (GMFC) was India's first organised effort to increase food production. The campaign had a two-pronged approach. First, to bring idle but potentially productive land under the plough, and second, to stimulate cultivator interest in increasing crop yield per hectare. In 1948, the GMFC was reviewed by the Thakurdass Committee and following its recommendations, the campaign was reoriented in 1950–51. In the following year, the GMFC became part of the First Five Year Plan. In 1952, the Government of India (GoI) appointed the Grow More Food Inquiry Committee under the chairmanship of Sir V.T. Krishnamachari to evaluate the campaign. The Committee found, *inter alia*, that (a) all aspects of village life are interrelated and no lasting results can be achieved if individual aspects of it were dealt with in isolation; and (b) the movement touched only a fringe of the population and did not arouse widespread enthusiasm and, hence, did not become in any sense a national programme. The Committee also made a number of recommendations regarding the future policy of the GMFC. One of the recommendations was that an extension agency should be set up for rural work, which would reach every farmer in the country and assist in the coordinated development of rural life. It was out of this background and experience that the CDP was designed and launched.

The Basic Premises

The basic premises underlying the India's decision to create the national CDP 1952 are presented in Box 9.1 (Ensminger 1968: 3).

Box 9.1 Basic Premises of Community Development Programme

1. The overall development of the rural community can be brought about only with effective participation of the people, backed by the coordination of technical and other services necessary for securing the best from such initiative and self-help. It was to provide the necessary institutional structure and services that early attention was given to the development of basic democratic village institutions, especially panchayati raj, cooperatives and village schools.
2. The problems of rural development have to be viewed from a holistic perspective and the efforts to solve them have to be multifaceted.

One of the major initial moving forces in community development was Prime Minister Jawaharlal Nehru's interest in the Programme. Nehru felt that one of India's most important undeveloped resources was the people living in its some 6,00,000 villages. Nehru saw in community development the way to involve the village people in building a new India. He visualised that through their involvement in self-help oriented programmes, would come the development of the people and people's institutions, both of which are essential ingredients in moving India towards one of its most clearly stated objectives, that is, developing India into a viable democracy.

The Objective

The main objective of the CDP was to secure the total development of the material and human resources of rural areas, and to develop local leadership and self-governing institutions, so as to raise the levels of living of rural people. This objective was to be attained by bringing about a rapid increase in food and agricultural production by strengthening programmes of natural resource development, such as minor irrigation and soil conservation, by improving the effectiveness of farm inputs supply systems and by providing agricultural extension service to farmers. The First Five Year Plan was dominated by the CDP, which reflected India's overriding concern with nation building and equity. Thus, the strategy underlying the CDP was holistic and equity-oriented.

The Coverage

The CDP was formally inaugurated on 2 October 1952. Initially it was launched in 55 project areas located in different parts of the country. Another 110 areas had necessarily to be added to the original 55 in the course of six months in response to popular demands from the members of state legislatures and the Members of Parliament (MPs). A new, somewhat less ambitious, scheme called the National Extension Service (NES) was evolved and launched in 1953. Whereas in the CDP, intensive development was taken up in all fields, the NES scheme was designed to provide the essential basic staff and a small amount of funds with which the people could start the development work essentially on the basis of self-help. The NES blocks were subsequently converted into CDP blocks. From 1 April 1969, the CDP was transferred from the central sector to the state sector.

The CDP had to be expanded phenomenally under political pressure and soon it became a national programme encompassing 400 million rural people across the four corners of the country. Consequently, both the programme as well as the inputs had necessarily to be diluted under this abnormal rate of expansion. The CDP now covers all the rural areas in the country.

The Activities

A large number of rural community development activities were undertaken in such varying degrees (within the limits of the available funds) as were advisable under the circumstances peculiar to each block. The number of activities taken up under the CDP was 46, categorised in eight broad heads (Ensminger 1972):

1. Agricultural and related matters (18)
2. Communication (3)
3. Education (3)

4. Health (6)
5. Training (5)
6. Social welfare (5)
7. Supplementary employment (4)
8. Housing (2)

Thus, the CDP is perhaps the most comprehensive programme ever launched in India.

The Organisation Structure

The CDP was undertaken and implemented by the GoI and the various state governments in cooperation with one another. For this purpose, an innovative multi-tier organisational structure was designed under the Technical Cooperation Programme Agreement (TCPA) of 5 January 1952 between the GoI and the government of the USA. At the national level, the GoI formed a central committee with the Prime Minister as the Chairperson, the Members of the Planning Commission, and the Minister of Food and Agriculture as members, to lay down the broad policies and provide the general supervision for the agreed projects. All nation building ministries were directed to collaborate with the programme through the Community Projects Administration (CPA), which was specially created for the purpose. The CDP organisation at the national level has undergone a number of changes over time. Now the Ministry of Rural Development is the administrative ministry in charge of all the centrally sponsored rural development programmes, including the CDP, in the country.

At the state level, a State Development Committee (SDC) headed by the Chief Minister was responsible for directing and coordinating the programme within the state. Many state governments had constituted State Planning Commissions or State Planning Boards for this purpose. The programme falls within the administrative purview of the State Departments of Rural Development.

At the district level, a District Development Officer (DDO) is responsible for the CDP in his district. Now, after the 73rd Constitution Amendment, statutory Zila Parishads are responsible for implementation of the programme in the districts. The Zila Parishad is chaired by an elected non-official and the DDO is the Chief Executive Officer (CEO) of the Zila Parishad. However, there are state to state variations in the organisational structure of the CDP at the district level. At the block level, the statutory Block Parishad or Samiti, or Block Panchayat Samiti, which is chaired by an elected non-official, oversees the implementation of the CDP. The Block Development Officer (BDO) is the Secretary to the Block Samiti and is responsible for implementation of the programme.

At the village level, Village Level Workers (VLWs), or Gram Sevaks and Gram Sevikas, are responsible for implementing the programme within a cluster of villages. VLWs work under the advice and control of the BDO. With the establishment of panchayati raj in all states now, the village or gram panchayat, which is headed by an elected non-official, is responsible for implementing the programme within its jurisdiction. The VLW assigned to the panchayat acts as its secretary.

Financing

The CDP was conceived, planned and initiated as a people's self-help programme. The Parliament appropriated funds annually on the condition that the funds had to be committed within the year appropriated or reverted to the treasury. Initially, financial and technical assistance to the CDP was made available by the US government, under the TCPA signed on 5 January 1952. To meet the local expenditure on the implementation of the CDP, funds were drawn from the GoI, the state governments, as well as the people. The Technical Cooperation Administration (TCA) provided, for India, technical assistance to the CDP at both the central and the state levels. At the central level, the services of the Director of the TCA were made available to the central committee.

Evaluation and Lessons Learnt

There have been a number of surveys and studies which have highlighted the tangible achievements of the CDP in terms of distribution of improved seeds, use of chemical fertilisers, plant protection chemicals, improved farm tools and equipment, construction of roads, wells, irrigation canals, establishment of primary health centres, rural dispensaries, *balwadis* (nurseries), and so on. On the basis of these studies, it would be fair to say that the CDP contributed significantly towards the creation of basic rural development machinery and infrastructure in the country for the first time, and helped expand and improve the production base of the rural economy of India. The CDP has also fulfilled, to a large extent, the equity norm of rural development.

However, the CDP failed to achieve the expected increase in agricultural production. This failure could be attributed to its diffused character, as it did not put sufficient and direct emphasis on agricultural production. The financial, material and administrative resources of the CDP were spread too thinly, albeit uniformly, all over the countryside to produce any tangible impact on agricultural production and rural poverty. In other words, the resources devoted to agricultural production fell short of the 'critical minimum' required to escape from the perpetual problem of low productivity in Indian agriculture.

The Small Farmer Development Agency (SFDA)

The report of the All India Rural Credit Review Committee (1969) recommended the establishment of an agency to assist the small farmers who had not benefited from the gains of the Green Revolution. Accordingly, the Fourth Five Year Plan laid special emphasis on enabling the small farmers to participate in the process of development and share in its benefits. To achieve this objective, the Plan provided for the initiation of a project, namely, the SFDA scheme, which was sanctioned during 1970–71, but the actual implementation started only during 1971–72. The objective of the SFDA was to ensure the viability of the small farmers. An autonomous agency registered under the Societies Registration Act 1860 was established at the district level to implement the SFDA projects.

It acted as a catalyst in identifying small farmers, identifying their problems and helping them to obtain inputs from various developmental organisations.

The SFDA was a central sector scheme until 1978–79 with 100 per cent assistance from central funds. From the year 1979–80, it became a joint venture of the central government and the state governments, each sharing the cost of the scheme in the 50:50 ratio.

The Marginal Farmers and Agricultural Labourers (MFAL) Scheme

Like the SFDA, the MFAL scheme was also launched in 1970–71 following the recommendations of the All India Rural Credit Review Committee (1969). Its objective was to assist the marginal farmers (with land holdings below 2.50 acres) and agricultural labourers to improve their productivity and income through a variety of activities like crop husbandry, including multiple cropping, increased use of new inputs, water harvesting techniques, minor irrigation, livestock, poultry and fishery, among others. During the Fifth Five Year Plan, based on the recommendations of the National Commission on Agriculture, the SFDA and MFAL schemes were merged into one composite scheme called the Small Farmers, Marginal Farmers and Agricultural Labourers Project (SFMFALP). The District Rural Development Agency (DRDA) is responsible for implementation of both the schemes, as also all other rural development programmes in the district.

In a study conducted by the Planning Commission, it was found that proper care was not exercised in the selection of some of the project areas, that very little attention had been paid to the identification of agricultural labourers and that the progress of identification of the participants was, on the whole, slow in most of the project areas. As a result of improper identification and verification of beneficiaries, the benefits of the schemes accrued to undeserving persons to the extent of about 9 per cent in both the SFDA and MFAL projects (GoI 1975).

GROWTH-ORIENTED PROGRAMMES

By the middle of the Second Five Year Plan, it became increasingly evident that whatever the success of the CDP, a new approach would be required if agricultural production was to stay ahead of the demands of India's mounting population. In 1957–58, India faced its first post-independence food crisis. In response to this crisis, and on the basis of the recommendations of the Ford Foundation-sponsored Team of American Agricultural Production Specialists, a new programme called the Intensive Agriculture District Programme (IADP), popularly known as Package Programme, was formulated and launched in the country in 1960–61. Based on the principle of concentration underlying the IADP, the following programmes had been designed and launched. All these programmes were growth oriented; they did not address themselves to equity issues.

1. The Intensive Cattle Development Scheme (ICDP)
2. Green Revolution or HYVP

3. All India Coordinated Projects and Technology Missions
4. Operation Flood (OF) Programme
5. Fish Farmers Development Agency (FFDA)

A brief description of each of the growth-oriented programmes follows.

The Intensive Agriculture District Programme (IADP)

The IADP represented a significant departure from the CDP, in that it employed the concentration principle in deploying resources, as opposed to the equity criterion of the CDP. Its main objective was to achieve rapid increases in agricultural production through the use of complementary inputs and services (package approach) at the farm level. Farm planning formed the core of IADP.

The Objectives

As its immediate goal the IADP sought to achieve rapid increases in agricultural production through concentration of financial, technical, extension and administrative resources. Its aim in the long run was to achieve a self-generating 'breakthrough' in productivity and raise the production potential by stimulating the human and physical processes of change. The Programme was also intended to provide lessons for extending such intensified agricultural production programmes to other areas.

The Coverage

The state governments selected the following seven districts for implementation of the IADP: Thanjavur (Tamil Nadu), West Godavari (Andhra Pradesh), Shahabad (Bihar), Raipur (Madhya Pradesh), Aligarh (Uttar Pradesh), Ludhiana (Punjab) and Pali (Rajasthan). The GoI approved the implementation of the Programme in these seven districts in June 1960. The seven districts were delimited into 140 community development blocks with 14,038 villages and the total gross cropped area of about 45 lakh hectares. At the behest of the GoI, the IADP was later extended to eight more districts, one each in eight other states.

The Activities

In the districts selected for implementation of the IADP, all the elements required to increase production were provided simultaneously. The activities taken up under the IADP are presented in Box 9.2.

Box 9.2 Activities of the Intensive Agriculture District Programme in India

1. Adequate and prompt supply of credit based on production plans and made available through strengthened cooperative societies.
2. Adequate and timely supply of production requisites, such as fertilisers, pesticides and implements, channelled mainly through cooperatives.
3. Arrangements for marketing and other services through cooperatives, so as to enable the cultivators to obtain a remunerative price for their marketable surplus.
4. Adequate storage facilities for supplies, such as seeds, fertilisers, implements and pesticides, and for farm produce, so that the cultivators do not have to travel long distances to procure supplies and market their produce.
5. Intensive educational efforts, particularly through crop demonstrations, to disseminate knowledge of improved agricultural practices.
6. Strengthening of transport arrangements to ensure mobility of supplies and staff.
7. Village planning for increased production and strengthening of village organisations like cooperatives and panchayats.
8. Analysis and evaluation of the programme from its initiation to its completion.
9. Establishment of agricultural implements workshops, seed and soil testing laboratories, and implementation of local works programmes having a direct bearing on production.

Source: Singh 1999: 171–172.

The Organisation and Administration

A machinery specifically responsible for supervising the IADP was created at the centre; the existing machinery at the state level was strengthened for guiding the Programme and a district functionary was designated as Project Officer and made responsible for Programme administration at the district level. At the block level, the normal complement of the CDP staff was strengthened by providing additional staff. Appropriate machinery to coordinate the activities of different departments and agencies was provided for at various levels. To ensure quick and speedy action, adequate financial and administrative powers were delegated to the District Collectors and Project Officers. These powers were reviewed from time to time and additional powers, wherever necessary, were given to the officers to meet the needs of the programme.

The Implementation Strategy

The implementation of the IADP involved two broad stages. The first may be termed a 'preparatory stage' during which the following activities were undertaken:

1. Selection of areas within the district for implementing the programme.
2. Creating general awareness among the farmers and non-official agencies, such as panchayats and cooperatives and securing their participation.
3. Strengthening of the cooperative institutions in the areas selected for coverage.

4. Selection, appointment and posting of additional staff.
5. Training of staff.
6. Organisation of a resource and production benchmark survey.
7. Assessment of the supplies needed.
8. Constructing and/or hiring storage godowns to bring the supplies within easy reach of the farmers.
9. Strengthening of the transport arrangements.

It was only after these preparatory measures were completed that the programme entered the second stage, that of operation and execution. The activities at this stage included

1. preparation and follow-up of farm and village production plans;
2. adequate and prompt supply of credit based on production plans;
3. adequate and timely supply of production requisites, such as seeds, fertilisers, pesticides and implements to be channelled primarily through cooperatives;
4. intensification of information and extension education activities, such as demonstrations and use of other creative information media;
5. arrangements for marketing and other services through cooperatives; and
6. analysis and evaluation of the programme.

Farm planning was the core of the IADP. Planned utilisation of production resources, use of scientific knowledge and improvement of management skills formed the *modus operandi* to increase agricultural production and productivity. The farm plan proforma, which was developed to suit the farming needs of each geographically homogeneous area emphasised the following basic elements:

1. An inventory of the resources.
2. The present land use and cropping system.
3. Improved production practices to be adopted.
4. Production supplies that have to be purchased for cash.
5. Production credit to be tied to the additional production due to improved practices and not to tangible security.
6. Expected net returns from all enterprises.
7. A repayment plan.
8. A credit application which links production needs to credit requirements.

Farm planning under the IADP had been effective on the whole in getting a substantial number of cultivators to use simple improved practices, such as improved seeds, fertilisers and plant protection measures. It made considerable progress in the first seven districts during the period the Programme has been in operation.

Training

National, regional and district level training conferences were organised under the IADP for the district and state level programme staff. Block level training camps for the village

level staff and the cultivators were also organised. Special training programmes were conducted for the office bearers of the cooperative and marketing institutions. The staff of the central and state governments, and of the Ford Foundation invariably assisted in these programmes. The training conferences were aimed at enhancing the competence of the participants in certain areas.

Financing

In the first seven districts, the IADP was implemented with financial assistance from the Ford Foundation. A Memorandum of Agreement (MoA) between the GoI and the Ford Foundation was signed on 18 June 1960 setting forth the financial obligations of the different parties involved in the Programme, namely, the GoI, the participating state governments and the Ford Foundation.

The Programme also envisaged provision of funds in the form of short- and medium-term credit to enable the cultivators to purchase various wherewithal of production and also to meet such requirements as purchase of bullocks, construction and repair of minor irrigation works, purchase of implements and equipments, land development measures, and so on. The short-term loans were provided mainly by the cooperatives with the assistance of the Reserve Bank of India (RBI), and medium-term loans partly by the government and partly by the cooperative institutions.

Apart from financial assistance, the Ford Foundation also rendered technical assistance through a team of subject matter specialists and consultants. These consultants were located in New Delhi, and they assisted the central and state governments in planning, implementation and evaluation of the Programme. Besides the Ford Foundation, the Technical Cooperation Mission (TCM) of the United States Agency for International Development (USAID) also provided technical experts. These experts were assigned to the IADP districts and they assisted the district staff in the study of field problems, and in analysing and resolving those problems.

Evaluation

A large number of problem-oriented analytical studies covering various aspects of the IADP have been conducted mostly by scholars working in agricultural universities and agro-economic research centres. Besides, the performance of the IADP has been analysed from time to time by an Expert Committee on Assessment and Evaluation, which was set up by the Ministry of Food and Agriculture in June 1961 for this purpose.

In its fourth assessment of the IADP covering the period from its inception in 1960 through 1967–68, the Expert Committee on Assessment and Evaluation sought to identify useful lessons from eight years of experience with the IADP. The Committee concludes that (GoI 1968: v):

... the programme in general has lived up to its promise in the setting in which it operated. It has shown that where effectively organised and where improved

technology was available, it has been able to move agricultural production forward more rapidly than did earlier approaches and to reach a wider range of farmers—large, medium and small.

One of the major drawbacks of the IADP was its neglect of the equity aspect of development. It has been criticised for having aggravated the inter-district and intra-district inequalities in income distribution. However, a study conducted by Singh (1973) in IADP, Aligarh, showed that the degree of inequality in farm income distribution had decreased from 1963–64 to 1968–69, due to the easy access of marginal and small farmers to improved seed, fertilisers, institutional credit and irrigation ensured under the IADP.

Lessons

By 1966, the basic concept of concentration and effective use and better management of resources had gained national acceptance, and a number of new agricultural development programmes were designed and launched on their pattern. The growth-oriented programmes demonstrated, on the one hand, the effectiveness of the concentration principle in achieving rapid increases in food production, and on the other hand, the failure of the growth-oriented strategy to solve the basic problems of rural poverty and income inequality. The most important lesson learned from the experience with these programmes was that a rising economic growth rate was no guarantee against worsening poverty, and that a direct frontal attack on the basic problems of poverty and unemployment was called for.

Intensive Cattle Development Projects (ICDPs)

The first systematic attempt in India to improve the quality of cattle was the Key Village Scheme (KVS) initiated during the First Five Year Plan. The programme was invigorated with the introduction of the ICDPs in 1965. The ICDPs were designed to provide cattle owners a package of improved practices, and envisaged intensive coverage of one lakh cows and buffaloes of breedable age for achieving marked impact on milk production. The ICDPs were located in selected areas which had good potential and conditions to respond to cattle development programmes. The ICDPs had a three-tier structure in which projects—Regional Cattle Development (RCD) blocks (four per project), and Stockmen Centres (25 per RCD block) each looking after 1,000 cattle—were placed in the descending order of the pyramid.

The ICDPs were not expected to yield spectacular results within a short span. However, after five years of operation of the Programme, an evaluation study was taken up by the Programme Evaluation Organisation (PEO) at the instance of the Agriculture Division of the Planning Commission in 1970–1971, with a view to suggest the required correctives. Some of the major findings of the study were as follows:

1. A good number of cattle owners in various states pointed out that the male progeny of the exotic breed was comparatively less suitable for various farm operations.
2. In majority of the selected areas, it was found that artificial insemination (AI) had received increasing appreciation, but the follow-up action in this respect was not satisfactory.
3. Despite the several limitations like small holdings and inadequate irrigation facilities, the programme of feeding and fodder development yielded satisfactory results.
4. Regular vaccination attenuated the incidence of contagious diseases and epidemics.
5. For marketing, milk cooperative societies were formed in many projects but some of them were ineffective.

Lessons

The following lessons could be teased out of the experience with the ICDPs:

1. To encourage breeding, cattle owners should be educated about the breed and quality of the cattle.
2. Regular pregnancy and sterility camps should be organised in all the ICDP areas, which should be attended by functionaries at all levels. Good quality of draught cattle needs to be ensured in abundance to meet the requirements of cattle for farm operations.

Green Revolution/High Yielding Varieties Programme (HYVP)

The term 'Green Revolution' is commonly used to imply the rapid transformation of agriculture worldwide, including India, that led to significant increases in agricultural production between the 1940s and the 1960s.¹ As the Green Revolution was made possible mainly because of the widespread use of high yielding variety (HYV) seeds of a few crops, it is also known in India as the HYVP.

The Rockefeller Foundation was instrumental in initiating the process of Green Revolution in Mexico in an informal international research institution set up in 1959, which in 1963 was formally named as The International Maize and Wheat Improvement Centre (CIMMYT). The second nation to which the Green Revolution spread was India. The Ford Foundation was instrumental in introducing the Green Revolution to India. The Foundation and the Indian government collaborated to import a huge amount of wheat seed from the CIMMYT. India then began its own Green Revolution programme of plant breeding, irrigation development and financing of agrochemicals. The Rockefeller Foundation and the Ford Foundation jointly established the International Rice Research Institute (IRRI) in the Philippines in 1960. The HYV of rice spread throughout that country, Indonesia, Pakistan, Sri Lanka, other non-Soviet bloc countries, Latin American, Asia and North Africa.

In India, the Green Revolution was brought about by the introduction of HYV seeds of wheat, paddy and maize after 1965, and the increased use of fertilisers and irrigation. This led to rapid and significant increase in foodgrains production needed to make India self-sufficient in foodgrains. The HYV of wheat, rice and maize introduced in India had been developed in Mexico and in the Philippines. Of the high-yielding seeds, wheat produced the best results. Production of coarse grains, the staple diet of the poor, and pulses, the main source of protein, lagged behind, resulting in reduced per capita availability.

The total area under the HYVP was negligible at 1.9 million hectares (mha) in 1960. Since then, growth has been spectacular, increasing to nearly 15.4 mha by 1970, 43.1 mha by 1980 and 63.9 mha by 1990. The rate of growth decreased significantly in the late 1980s, however, as additional suitable land was not available.

The major benefits of the Green Revolution in India were experienced mainly in northern and northwestern India between 1965 and the early 1980s. The Programme resulted in a substantial increase in the production of food grains, mainly wheat and rice. Food grain yields continued to increase throughout the 1980s, but the dramatic changes in the years between 1965 and 1980 were not duplicated. By 1980, almost 75 per cent of the total cropped area under wheat was sown with HYV. For rice, the comparable figure was 45 per cent. In the 1980s, the area under HYV continued to increase, but the rate of growth overall was slower. The Eighth Five Year Plan aimed at making HYV available to the whole country and developing more productive strains of other crops.

The Indian Green Revolution created wide inter-regional and inter-state disparities. The Programme was implemented only in areas with assured supplies of water and the means to control it, large inputs of fertilisers and adequate farm credit. These inputs were easily available in at least parts of the states of Punjab, Haryana and western Uttar Pradesh. Thus, yields increased most in these states. In other states, such as Andhra Pradesh and Tamil Nadu, in areas where these inputs were not assured, the results were limited or negligible, leading to considerable variation in crop yields within these states. The Green Revolution in India also increased income disparities: higher income growth and reduced incidence of poverty were found in the states where yields increased the most, and lower income growth and little change in the incidence of poverty in other states.

A revolution of this magnitude was bound to create some problems of its own. Critics charged that the Green Revolution resulted in environmental degradation and increased income inequality, inequitable asset distribution and increase in absolute poverty. Some of these criticisms are valid and have been or still need to be addressed. But there is a tendency today to overstate the problems and to ignore the appropriate counter-factual situation: what would have been the magnitude of hunger and poverty without the yield increases of the Green Revolution and with the same population growth?²

Operation Flood (OF)

The OF is the world's biggest dairy development programme. It heralded the so-called White Revolution in India. It was designed and launched in 1970 by the National Dairy

Development Board (NDDB), then a non-governmental organisation (NGO) but now a statutory corporate body. Dr Verghese Kurien, who is regarded as 'the Father of White Revolution', Dr Michael Halse, Food and Agriculture Organization (FAO) Advisor, and NDDB, were instrumental in conceptualising, designing and launching of the OF. It was aimed at creating a virtual 'flood' of rurally produced milk in India, by helping rural milk producers in 18 milksheds in 10 selected states of India to organise Anand-pattern dairy cooperatives (APDC). The basic philosophy behind OF was that milk production in the rural milksheds could be encouraged only by providing an efficient channel and a ready market for the rurally produced milk at remunerative prices. The milk production, procurement, processing and marketing organisations were to be organised on Anand model cooperatives, which had already proved their worth as an organisation structure suitable for small-scale and scattered milk producers. The OF was implemented in three phases: OF-I, OF-II and OF-III. OF-I was formally launched on 1 July 1970 by the newly formed Indian Dairy Corporation (IDC). The IDC was a wholly GoI-owned corporation, specifically set up to serve as a 'finance and promotion' house for the OF. Originally, OF-I was to conclude in five years, but it had to be extended until 31 March 1981. Concurrently, OF-II was launched on 2 October 1979. It concluded on 31 March 1985. OF-III was launched on 1 April 1985 and concluded on 31 March 1996. Since 1 April 1996, OF-IV has been underway in some selected unions that are currently financially viable, but vulnerable to threats from competition of the private trade, or those which are currently sick, but can be turned around.

As stated earlier, the OF programme sought to replicate the APDC structure in selected milksheds in India. The APDCs have a three-tier organisational structure consisting of a milk producers' cooperative society at the village level, a cooperative milk producers' union at the district level and a cooperative milk producers' federation at the state level. This structure permits the horizontal and vertical integration of all the dairy development activities in a state, and makes it possible to realise the economies of scale in procurement, processing and marketing of milk through the use of modern technology.

The APDCs formulate and implement their own policies and programmes for dairy development in their area, and hire professional managers and technicians for their implementation. The role of the government is limited to assisting the cooperatives financially in implementing their own programmes. The government funds for dairy development are placed at the disposal of the cooperatives.

The OF is a living example of a non-governmental initiative that has been successful in promoting people-centred development more efficiently and effectively than the government-sponsored programmes. The OF is also a unique example of the use of foreign aid in the form of dairy commodities, namely, skimmed milk powder and butter oil, to create, expand and modernise the production, processing and distribution facilities in the country, such that the dependence on foreign aid was eventually eliminated. It also demonstrated that the food aid need not necessarily depress the domestic prices below the levels, which are low enough to kill the domestic producers' initiative to produce more.

The OF has enabled India to increase its milk production from about 21 million tonnes in 1968–69 to about 102 million tonnes in 2006–07. The number of dairy cooperatives established under the OF in India had increased to 1,25,534 by the end of the year 2006–07

and the number of member milk producers to 12.96 million (NDDDB 2007: 37–38). India now is the world's highest milk producing country. Evaluation studies of the OF show that the programme has significantly improved the income of rural milk producers, especially marginal and small farmers, and landless labourers (Singh 1999a: 218–22).

Technology Missions

Technology Missions on oilseeds, pulses, maize and cotton were launched in the Seventh Five Year Plan to further intensify research and provide a fillip to technology adoption by removing some bottlenecks and constraints. The Technology Mission on Oilseeds has achieved a major breakthrough in the production of oilseeds. During 1998–99, a record production of 25.2 million tonnes of oilseeds was achieved for the first time in India. As oilseeds crops are predominantly grown in rain-fed areas in the country, their production fluctuates widely depending upon the fluctuations in the rainfall. In the year, 2005–06, the production of oilseeds in the country was 28 million tonnes.

In view of the success achieved in the oilseeds production, pulses were also brought under the ambit of the Technology Mission in 1990. There has been an increase in the production of pulses after their inclusion in the Mission. In 2005–06, the production of pulses in India was estimated to be about 13.40 million tonnes. Besides the Mission, a centrally sponsored National Pulses Development Project (NPDP) is also being implemented in the country. Maize had also been included in the Technology Mission in 1995 in view of the versatility of the crop and its importance as a food grain, animal feed and an industrial raw material. For increasing the production of maize, Accelerated Maize Development Programme (AMDP) was formulated during the Eighth Five Year Plan.

A Technology Mission on Dairy Development (TMDD) was constituted by the GoI in August 1988 to complement and supplement the efforts made under the OF for dairy development. The main objective of TMDD was to optimise the use of available inputs, resources and infrastructural facilities established under the OF. Under the Operational Linkage Programme (OLP), which was implemented under the auspices of TMDD in 171 districts in 14 states, integrated district annual plans were prepared by the District Level Coordination Committees (DLCCs). These plans were prepared taking into account the resources available for dairy development with the state governments, the dairy cooperatives and the NGOs concerned (NDDDB 1997: 34).

A National Horticulture Mission (NHM) was launched in 2006–07 as a centrally sponsored scheme to promote holistic growth of the horticulture sector through area-based regionally differentiated strategies. The scheme will be fully funded by the GoI and different components proposed for implementation would be financially supported on the scales laid down. The Mission adopted the following strategies:

1. Ensure an end-to-end holistic approach covering production, post-harvest management, processing and marketing to assure appropriate returns to growers/producers.

2. Promote R&D technologies for production, post-harvest management and processing.
3. Enhance acreage, coverage and productivity through (a) diversification from traditional crops, and (b) extension of appropriate technology to the farmers for hightech horticulture cultivation and precision farming.

Fisheries Development Programmes

The fisheries sector occupies an important place in the socio-economic development of India. It contributed nearly 1 per cent of India's gross domestic product (GDP) in 2004–05 and nearly 5 per cent of the agricultural GDP. It is a source of cheap and nutritious food, and is an important foreign exchange earner.³ Besides, it is considered as a major source of livelihood for nearly 11 million people in the country, engaged fully or partially, or in subsidiary activities pertaining to the sector. It is estimated that fisheries sector alone can provide one million jobs in next five years.

India is now the third largest producer of fish and the second largest producer of inland fish in the world. The fish production in the country has registered tremendous growth over the last two decades or so, ranging from 5.5 per cent to 5.8 per cent per annum, which is much higher than that for the agricultural sector as a whole. Fish production can be increased significantly if judicious development, conservation and harvesting of marine and inland fishery resources of the country, by way of adopting suitable scientific technologies and conservational measures, were adopted.

The performance of the fisheries sector has been good and consistent. The total fish production in India was only 0.75 million tonnes in 1950–51. It increased to 2.44 million tonnes in 1980–81, 3.84 million tonnes in 1990–91 and to about 6.57 million tonnes in 2005–06. However, like other common pool resources (CPRs), the fisheries in India also suffer from what Hardin (1968) called 'the tragedy of the commons'. Being part of the environment, they affect it and are affected by it.

Until the first national policy for managing (marine) fisheries was announced in 2004, there was no national fisheries policy in India. However, the GoI had sought to increase fish production in the country through several research and development programmes. More specifically, the GoI had established several fisheries research institutes under the aegis of the Indian Council of Agricultural Research (ICAR) to undertake research for the development of composite fish culture and induced breeding technologies, and to promote their adoption. Besides, it also launched a national level programme, Fish Farmer Development Agency (FFDA) in 1976 with the initial assistance from the World Bank to promote aquaculture in the country. The FFDA provided technical, financial and extension support to fish farmers for taking up culture fishery in common pool village ponds and tanks. Consequently, the national average fish yield in the FFDA-supported ponds increased from 50 kg/ha per year in 1974–75 to about 2,135 kg/ha in 1994–95, and this increasing trend in the yield continues to date (Katiha 2006: 19). In addition to the GoI, the State Fisheries Departments also promote inland culture fishery through granting

leases to poor fishermen to take up culture fishery in public/common pool village water bodies and provision of subsidies.

The Ministry of Agriculture (GoI) has also paid due attention in the past decade to the development of deep-sea fisheries in the country. The declaration of an Exclusive Economic Zone (EEZ) in 1976 facilitated the exploration, exploitation and utilisation of marine living resources in the sea around India extending to 200 nautical miles, thereby giving the nation immense opportunities and challenges to harvest the resources and to manage them on sound scientific basis. The past three decades have witnessed rapid initiatives by the government and private agencies in the marine fisheries sector of the country. On realising that most of the deep-sea fishery resources beyond the conventional fishing limit and fishing capability of the indigenous craft can be gainfully exploited, only if the upgraded and sophisticated vessels of adequate size and capabilities were inducted into the fishery, the GoI facilitated the mobilisation of capital and expertise indigenously to address this issue in the 1981 Charter Policy.

After the expiry of five years of operation of this policy, the government revised the policy to rectify the deficiencies noticed during its operation and to make it more beneficial to the country. Accordingly a revised 1986 Charter Policy was pronounced. This Charter Policy envisaged the acquisition of vessels by the Indian companies either through import/construction in India or through joint ventures. As a result of the Charter Policy, 97 companies were permitted to operate 311 foreign fishing vessels. Besides augmenting the marine fish production in the country, the policy also facilitated greater inflow of foreign exchange through the export of fish caught by these vessels. All these vessels were operating on 100 per cent Export Oriented Units (EOU) basis. The conditions for acquisition of vessels of adequate type and number by the Indian companies who chartered vessels helped the growth of Indian deep-sea fishing fleet within a short span of time. Having laid the foundation for the Indian deep-sea fishing industry, the government went ahead to broad base the initiatives through the Deep Sea Fishing Policy (DSFP) 1991. This policy envisaged to promote joint ventures, test fishing and leasing, besides allowing the vessels chartered under the 1986 policy to operate till the validity of their permits lasted. The GoI had announced its first Marine Fishing Policy (MFP) in 2004 (GoI 2004c).⁴

The 2004 Policy seeks to address the concerns of the traditional and coastal fishermen together with those of the other stakeholders in the deep-sea sector, so as to achieve the harmonised development of marine fishery, both in the territorial and extra-territorial waters of the country. The rationale of the Policy is enshrined in the National Agriculture Policy promulgated by the GoI in 2000.

MAIN POINTS

1. India has a very long history of experimenting with various approaches to rural development going back to the pre-independence era. Since the beginning of

the First Five Year Plan in 1951–52, a large number of agricultural and rural development programmes have been launched in the country from time to time. These programmes could be classified into the following three broad categories: Equity- and Growth-oriented Programmes, Poverty and Unemployment Alleviation Programmes, and Natural Resources and Infrastructure Development Programmes.

2. The Community Development Programme (CDP) was India's first large scale, well-planned and organised initiative to promote agricultural and rural development, with the main focus on equity. It was launched in October 1952. Its main objective was to secure total development of the material and human resources of rural areas, and to develop local leadership and self-governing institutions, so as to raise the levels of living of the rural people. It laid the foundation for agricultural and rural development programmes.
3. The financial, material and administrative resources of the CDP were spread too thinly, albeit uniformly, all over the countryside to produce any tangible impact on agricultural production and rural poverty. In other words, the resources devoted to agricultural production fell short of the 'critical minimum' required to escape from the perpetual problem of low productivity in Indian agriculture. However, the CDP was successful in achieving the objective of equity.
4. The Small Farmer Development Agency (SFDA) scheme and the Marginal Farmers and Agricultural Labourers (MFAL) scheme were the two other major equity-oriented programmes. They were both launched in 1970–71, following the recommendations of the All India Rural Credit Review Committee (1969). During the Fifth Five Year Plan, both the schemes had been merged into one composite scheme called the Small Farmers, Marginal Farmers and Agricultural Labourers Project (SFMFALP). These programmes did not succeed in achieving their objectives, mainly due to improper identification of their beneficiaries.
5. The first growth-oriented programme launched in India in the wake of the food crisis of 1957–58 resulting mainly from the failure of the CDP to increase agricultural production rapidly and significantly, was the Intensive Agricultural District Programme (IADP). It was initiated in 1960–61 in seven selected districts in the country and was later extended to eight more districts. The IADP employed the concentration principle as opposed to the equity principle of the CDP. It aimed at attaining rapid increases in agricultural production in selected areas through intensification of the use of the full set of production inputs and services. It was successful in achieving this objective to a great extent.
6. Based on the success of the IADP, several other programmes, such as the Intensive Cattle Development Programme (ICDP), Green Revolution or High Yielding Variety Programme (HYVP); Technology Missions; the Operation Flood (OF) programme and the Fish Farmers Development Agency (FFDA) were designed based on the concentration principle. All these programmes led to rapid increases in agricultural production but aggravated the inter-regional and intra-regional disparities in the distribution of benefits of development.

NOTES

1. The term 'Green Revolution' was first used in 1968 by the former USAID Director William Gaud, who noted the spread of the new technologies and said, 'These and other developments in the field of agriculture contain the makings of a new revolution. It is not a violent Red Revolution like that of the Soviets, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution.' (http://en.wikipedia.org/wiki/Green_Revolution)
2. <http://www.ifpri.org/pubs/ib/ib11.pdf>. Accessed in March 2008.
3. In 2004–05, the value of fish and fish products exported from India was Rs 6,188 crore (GoI 2008; <http://indiabudget.nic.in>, Accessed in March 2008).
4. Some of the salient features of the Policy are presented in Chapter 6 of this book.

QUESTIONS FOR DISCUSSION

- 9.1. Compare and contrast the equity-oriented approach with the growth/efficiency-oriented approach to rural development. Which one of these is more appropriate under the current situation in India and why?
- 9.2. What was the main reason for the failure of the Community Development Programme (CDP) to achieve significant increases in agricultural production?
- 9.3. What were the major lessons of the experience with the Integrated Agriculture District Programme (IADP), and to what extent they were replicated in other programmes?
- 9.4. The High Yielding Varieties Programme (HYVP) made India self-sufficient in food-grains, but it was criticised by social scientists on several grounds. What were the major criticisms of the HYVP?
- 9.5. In India, we have dozens of rural development programmes currently underway. Some of them have contradictory objectives. This creates a lot of confusion among the villagers. Why cannot we have a comprehensive programme of rural development encompassing all aspects of rural life as the CDP did?

10 Poverty and Unemployment Eradication Programmes

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- explain the genesis of various rural poverty and unemployment eradication programmes launched in India from time to time;
- describe the present poverty scenario in India and the trends in it;
- describe the present unemployment scenario in India and the trends in it;
- describe the salient features of the major rural poverty alleviation programmes launched in India from time to time and lessons of experience with them and
- explain the salient features of major social welfare-oriented programmes (SWOP) of India, including their objectives and target groups.

INTRODUCTION

Poverty and unemployment have been the bane of India since long. Their reduction has been one of the major goals of India's development planning since the beginning of the planning era in 1951–52 and the planning process has been sensitive to the needs of the poor. Accordingly, the Government of India (GoI) has launched various

programmes from time to time aimed at alleviation of poverty and unemployment, and creating adequate livelihood opportunities for the poor through provision of employment and public services. Poverty and unemployment are interrelated problems and have a two-way relation, that is, one is both the cause and effect of the other. Poverty in India is not merely an economic phenomenon but a social one as well. While poverty is an outcome of multiple deprivations, its measurement has largely dealt with economic deprivation (income/consumption expenditure). The recent body of literature highlights the multidimensionality of poverty and also the heterogeneity of the poor. It also highlights the need to go beyond income poverty by using indices of human development and overall welfare. Since the determinants of poverty and unemployment are interrelated, a comprehensive approach is needed to address these two problems.

Poverty alleviation schemes and programmes have been in place for a long time now. The programmes and schemes have been modified, consolidated, expanded and improved over time. The targeted programmes fall into four broad categories: (a) self-employment programmes; (b) wage-employment programmes; (c) public distribution system (PDS); and (d) other social welfare oriented programmes (SWOP), such as National Social Assistance Programme (NSAP), the Aam Admi Bima Yojana (AABY) and the Rashtriya Swasthya Bima Yojana (RSBY).

There are numerous centrally sponsored schemes (CSS) belonging to all the four categories. The CSS are designed by the centre, administered by the Ministry of Rural Development, but implemented by the state governments, which generally contribute 25 per cent of their cost. In addition, some state governments have their own schemes. The multiplicity of the programmes is advocated on the grounds of multidimensionality of poverty and regional variations in the efficacy of the delivery system. There is also a recognition that it is problematic to close a scheme even if it is cost ineffective because of adverse publicity and political fallout associated with the closure.

This chapter first presents an overview of the current poverty and unemployment situation in India and trends thereof in the recent past, and then it discusses the salient features of the major poverty and unemployment alleviation programmes launched by the government from time to time. The main objective of the chapter is to enhance the awareness of the student about the nature and extent of poverty and unemployment problems, and the measures taken to resolve them and lessons thereof.

CURRENT POVERTY SCENARIO AND TRENDS

Several attempts have been made in India to estimate the incidence of poverty and trends thereof. The estimates are, however, not comparable because of differences in the methodologies used to define the poverty lines and size of samples taken. However, by and large, we could say that the proportion of India's population living below the poverty line has fluctuated widely over time and across states in the past, but the overall trend has been downward. We could broadly examine the incidence of poverty and trends therein under the following three phases (Muthalagu 2007: 4).

Phase I: 1950 to the mid-1970s

Incidence of poverty shows no discernible trend. In 1951, 47 per cent of India's rural population was below the poverty line. The proportion went up to 64 per cent in 1954–55; it came down to 45 per cent in 1960–61 but in 1977–78, it went up again to 51 per cent.

Phase II: Mid-1970s to 1990

Poverty declined significantly between the mid-1970s and the end of the 1980s. The decline was more pronounced between 1971–78 and 1986–87, with rural poverty declining from 51 per cent to 39 per cent. It went down further to 34 per cent by 1989–90. Urban poverty went down from 41 per cent in 1971–78 to 34 per cent in 1986–87 and further to 33 per cent in 1989–90.

Phase III: Post-1991 Era

This post-economic reform period evidenced both progress and setbacks. Rural poverty increased from 34 per cent in 1989–90 to 43 per cent in 1992, and then fell to 37 per cent in 1993–94. Urban poverty went up from 33.4 per cent in 1989–90 to 33.7 per cent in 1992 and declined to 31 per cent in 1993–94. Some estimates of the poverty ratio and the extent of decline in the poverty ratio are presented in Table 10.1. As shown in the table, the poverty ratio in India was 51.3 per cent in 1977–78 and it declined to 22.5 per cent in 2004–05 with a 56.82 per cent reduction over a period of 30 years.

Table 10.1 Estimates of Poverty and Trends in Poverty

<i>Year</i>	<i>NSSO round</i>	<i>Poverty ratio (%)</i>	<i>Reduction in poverty (%) (Over the previous five years)</i>
1977–78	32	51.30	–
1983–84	38	45.65	11.01
1987–88	43	39.09	14.37
1993–94	50	37.27	4.66
1999–2000	55	26.09	30.00
2004–05	61	22.5*	15.10

Source: Muthalagu (2007: 4).

Note: *Based on Mixed Recall Period consumption.

Due to methodological changes in the collection of National Sample Survey (NSS) data in the fifty-fifth round (1999–00), comparison of the pre- and post-reform period trend in poverty is beset with problems. The trend in the incidence of poverty depends on whether we include or exclude the fifty-fifth and fifty-sixth rounds. The exclusion of both the rounds shows substantial slowdown in the rate of decline in the percentage of

rural population living in poverty during 1990–98, but inclusion tends to suggest some improvement in the rate of decline during 1990–2001.

Undoubtedly, India has made some progress in the reduction of income poverty. Yet, in 2004–05, as many as 302 million persons (27.5 per cent) were living below the poverty line in India. According to Human Development Report (HDR), 2003, of the United Nations Development Programme (UNDP 2003), India has the largest number of poor among the countries of the world and is home to one-fourth of the world's poor. A large number of the hardcore poor are located in remote and inaccessible areas. The problem of poverty alleviation is going to be far more difficult than in the past, since those who were near the poverty line might have crossed it temporarily for some time but may have slipped again below the poverty line and now living as the hardcore poor.

Several attempts have been made in India to estimate the incidence of poverty. The estimates are, however, not comparable because of differences in the methodologies used to define the poverty lines and the sizes of samples taken. The official poverty estimates presented here are based on the methodology recommended by the Expert Group (EG) of the Planning Commission. The National Sample Survey Organisation (NSSO) has now released the result of the latest large sample survey data on household consumer expenditure (NSS sixty-first round), covering the period July 2004 to June 2005 (NSSO 2006: Report No.508 [61/1.0/1]). From this data, two different consumption distributions for the year 2004–05 have been obtained. The first one is based on the consumption data collected using a 30-day recall period (also known as reference period) for all the items. The other distribution is obtained from the consumer expenditure data collected using a 365-day recall period for five infrequently purchased non-food items, namely, clothing, footwear, durable goods, education and institutional medical expenses, and a 30-day recall period for the remaining items. These two consumption distributions have been termed as Uniform Recall Period (URP) consumption distribution and Mixed Recall Period (MRP) consumption distribution, respectively. The Planning Commission, using the EG methodology, has estimated poverty in 2004–05 using both the distributions.

The state specific percentage and number of poor in rural and urban areas estimated from the URP consumption distribution are given in Table 10.2.¹ Table 10.3 presents the state specific percentage and number of poor in rural and urban areas estimated from MRP consumption distribution.² The URP consumption distribution data of the sixty-first round yields a poverty ratio of 28.3 per cent in the rural areas, 25.7 per cent in the urban areas and 27.5 per cent for the country as a whole in 2004–05 (Table 10.2). The corresponding figures obtained from the MRP consumption distribution data of the sixty-first round are 21.8 per cent in the rural areas, 21.7 per cent in the urban areas and 21.8 per cent for the country as a whole (Table 10.3).

The poverty estimates in 2004–05 based on the URP consumption distribution (27.5 per cent) is comparable with the poverty estimates of 1993–94, which was 36 per cent. The poverty estimates in 2004–05 based on the MRP consumption (21.8 per cent) is roughly (but not strictly) comparable with the poverty estimates of 1999–2000, which was 26.1 per cent.

The regional differences in poverty reduction are quite substantial. The decline in states' incidence of poverty ranged between 12–50 percentage points in rural areas

Table 10.2 Number and Percentage of Population below the Poverty Line by States, 2004–05 (Based on URP Consumption)

S. No.	States/UTs	Rural		Urban		Combined	
		Percentage of persons	No. of persons (Lakhs)	Percentage of persons	No. of persons (Lakhs)	Percentage of persons	No. of persons (Lakhs)
1.	Andhra Pradesh	11.2	64.70	28.0	61.40	15.8	126.10
2.	Arunachal Pradesh	22.3	1.94	3.3	0.09	17.6	2.03
3.	Assam	22.3	54.50	3.3	1.28	19.7	55.77
4.	Bihar	42.1	336.72	34.6	32.42	41.4	369.15
5.	Chhattisgarh	40.8	71.50	41.2	19.47	40.9	90.96
6.	Delhi	6.9	0.63	15.2	22.30	14.7	22.93
7.	Goa	5.4	0.36	21.3	1.64	13.8	2.01
8.	Gujarat	19.1	63.49	13.0	27.19	16.8	90.69
9.	Haryana	13.6	21.49	15.1	10.60	14.0	32.10
10.	Himachal Pradesh	10.7	6.14	3.4	0.22	10.0	6.36
11.	Jammu & Kashmir	4.6	3.66	7.9	2.19	5.4	5.85
12.	Jharkhand	46.3	103.19	20.2	13.20	40.3	116.39
13.	Karnataka	20.8	75.05	32.6	63.83	25.0	138.89
14.	Kerala	13.2	32.43	20.2	17.17	15.0	49.60
15.	Madhya Pradesh	36.9	175.65	42.1	74.03	38.3	249.68
16.	Maharashtra	29.6	171.13	32.2	146.25	30.7	317.38
17.	Manipur	22.3	3.76	3.3	0.20	17.3	3.95
18.	Meghalaya	22.3	4.36	3.3	0.16	18.5	4.52
19.	Mizoram	22.3	1.02	3.3	0.16	12.6	1.18
20.	Nagaland	22.3	3.87	3.3	0.12	19.0	3.99
21.	Orissa	46.8	151.75	44.3	26.74	46.4	178.49
22.	Punjab	9.1	15.12	7.1	6.50	8.4	21.63
23.	Rajasthan	18.7	87.38	32.9	47.51	22.1	134.89
24.	Sikkim	22.3	1.12	3.3	0.02	20.1	1.14
25.	Tamil Nadu	22.8	76.50	22.2	69.13	22.5	145.62
26.	Tripura	22.3	6.18	3.3	0.20	18.9	6.38
27.	Uttar Pradesh	33.4	473.00	30.6	117.03	32.8	590.03
28.	Uttarakhand	40.8	27.11	36.5	8.85	39.6	35.96
29.	West Bengal	28.6	173.22	14.8	35.14	24.7	208.36
30.	A & N Islands	22.9	0.60	22.2	0.32	22.6	0.92
31.	Chandigarh	7.1	0.08	7.1	0.67	7.1	0.74
32.	Dadra & N. Haveli	39.8	0.68	19.1	0.15	33.2	0.84
33.	Daman & Diu	5.4	0.07	21.2	0.14	10.5	0.21
34.	Lakshadweep	13.3	0.06	20.2	0.06	16.0	0.11
35.	Pondicherry	22.9	0.78	22.2	1.59	22.4	2.37
	All-India	28.3	2,209.24	25.7	807.96	27.5	3,017.20

Source: *Kuruksheetra* (2007: 45).

- Notes:
1. **URP consumption:** Uniform Recall Period consumption in which the consumer expenditure data for all the items are collected from a 30-day recall period.
 2. Poverty Ratio of Assam is used for Sikkim, Arunachal Pradesh, Meghalaya, Mizoram, Manipur, Nagaland and Tripura. Poverty Line of Maharashtra and expenditure distribution of Goa is used to estimate poverty ratio of Goa.
 3. Poverty Ratio of Tamil Nadu is used for Pondicherry, and Andaman and Nicobar Islands.
 4. Urban Poverty Ratio of Punjab used for both rural and urban poverty of Chandigarh.
 5. Poverty Line of Maharashtra and expenditure distribution of Dadra and Nagar Haveli are used to estimate the poverty ratio of Dadra and Nagar Haveli.
 6. Poverty Ratio of Goa is used for Daman and Diu.
 7. Poverty Ratio of Kerala is used for Lakshadweep.

Table 10.3 Number and Percentage of Population below the Poverty Line by State, 2004–05 (Based on MRP Consumption)

S. No.	States/UTs	Rural		Urban		Combined	
		Percentage of persons	No. of persons (Lakhs)	Percentage of persons	No. of persons (Lakhs)	Percentage of persons	No. of persons (Lakhs)
1.	Andhra Pradesh	7.5	43.21	20.7	45.50	11.1	88.71
2.	Arunachal Pradesh	17.0	1.47	2.4	0.07	13.4	1.54
3.	Assam	17.0	41.46	2.4	0.93	15.0	42.39
4.	Bihar	32.9	262.92	28.9	27.09	32.5	290.01
5.	Chhattisgarh	31.2	54.72	34.7	16.39	32.0	71.11
6.	Delhi	0.1	0.01	10.8	15.83	10.2	15.83
7.	Goa	1.9	0.13	20.9	1.62	12.0	1.74
8.	Gujarat	13.9	46.25	10.1	21.18	12.5	67.43
9.	Haryana	9.2	14.57	11.3	7.99	9.9	22.56
10.	Himachal Pradesh	7.2	4.10	2.6	0.17	6.7	4.27
11.	Jammu & Kashmir	2.7	2.20	8.5	2.34	4.2	4.54
12.	Jharkhand	40.2	89.76	16.3	10.63	34.8	100.39
13.	Karnataka	12.0	43.33	27.2	53.28	17.4	96.60
14.	Kerala	9.6	23.59	16.4	13.92	11.4	37.51
15.	Madhya Pradesh	29.8	141.99	39.3	68.97	32.4	210.97
16.	Maharashtra	22.2	128.43	29.0	131.40	25.2	259.83
17.	Manipur	17.0	2.86	2.4	0.14	13.2	3.00
18.	Meghalaya	17.0	3.32	2.4	0.12	14.1	3.43
19.	Mizoram	17.0	0.78	2.4	0.11	9.5	0.89
20.	Nagaland	17.0	2.94	2.4	0.09	14.5	3.03
21.	Orissa	39.8	129.29	40.3	24.30	39.9	153.59
22.	Punjab	5.9	9.78	3.8	3.52	5.2	13.30
23.	Rajasthan	14.3	66.69	28.1	40.50	17.5	107.18
24.	Sikkim	17.0	0.85	2.4	0.02	15.2	0.87
25.	Tamil Nadu	16.9	56.51	18.8	58.59	17.8	115.10
26.	Tripura	17.0	4.70	2.4	0.14	14.4	4.85
27.	Uttar Pradesh	25.3	357.68	26.3	100.47	25.5	458.15
28.	Uttarakhand	31.7	21.11	32.0	7.75	31.8	28.86
29.	West Bengal	24.2	146.59	11.2	26.64	20.6	173.23
30.	A & N Islands	16.9	0.44	18.8	0.27	17.6	0.71
31.	Chandigarh	3.8	0.04	3.8	0.36	3.8	0.40
32.	Dadra & N. Haveli	36.0	0.62	19.2	0.16	30.6	0.77
33.	Daman & Diu	1.9	0.03	20.8	0.14	8.0	0.16
34.	Lakshadweep	9.6	0.04	16.4	0.05	12.3	0.09
35.	Pondicherry	16.9	0.58	18.8	1.34	18.2	1.92
	All-India	21.8	1,702.99	21.7	682.00	21.8	2,384.99

Source: Kurukshetra (2007: 46).

Notes: 1. **MRP consumption:** Mixed Recall Period consumption in which the consumer expenditure data for five non-food items, namely, clothing, footwear, durable goods, education and institutional medical expenses are collected from a 365-day recall period and the consumption data for the remaining items are collected from a 30-day recall period.

2. See notes of Table 10.2.

during 1973–2000, and 20–40 percentage points in urban areas. The inter-state variations in the rural poverty reduction have been attributed to the variations in their agricultural productivity improvement. In addition, initial endowments of physical infrastructure and human resources did contribute to the inter-state variations in the performance. States such as Andhra Pradesh, Kerala and West Bengal, which had a higher rural poverty ratio in the first phase, had lower rural poverty ratios in the second phase. Andhra Pradesh which had benefited from Green Revolution, and Kerala and West Bengal which had implemented land reforms, experienced significant decline in the rural poverty ratio. Despite this, the rural poverty level was higher in West Bengal in 1999–2000 than that of all India because of the extremely high poverty level in the first phase. Assam, Bihar, Madhya Pradesh, Orissa and Uttar Pradesh had higher incidence of poverty as well as poor record in poverty reduction.

RURAL EMPLOYMENT SCENARIO

In development economics, the link between employment and poverty is one of the most debatable issues, particularly in the light of their relationship with the general growth rate of the economy. A higher rate of growth of gross domestic product (GDP) does not necessarily reduce poverty, if the distribution of benefits of the growth is highly unequal. Employment is a source of income and livelihood, and also a reflection of the overall living condition of people. The Approach Paper to the Tenth Five Year Plan prescribed that in order to ameliorate poverty, it is essential to create 'gainful high quality' employment for the existing as well as prospective additions to the labour force. Growth in employment is usually linked with growth in earnings of the households and, hence, has a direct bearing on the poverty levels. As most of the poor rural households are primarily engaged in occupations which, since the initiation of the reforms, have not experienced a significant increase in productivity, amelioration of poverty for this group, in the immediate future, has to come mainly through additional employment generation. Hence, it is widely acknowledged that creating adequate employment opportunities should constitute one of the important objectives of the development strategy of the country.

Like for poverty, the latest and seventh quinquennial NSS survey, that is, the sixty-first round conducted during July 2004 to June 2005, constitutes an important source of information on employment and unemployment. The sixty-first round of the NSSO survey reveals a faster increase in employment during 1999–2000 to 2004–05 as compared to 1993–94 to 1999–2000 (Table 10.4).

The Tenth Five Year Plan (2002–07) aimed at the provision of gainful and high quality employment in excess of addition to the labour force to significantly reduce the number of the unemployed by the end of the Plan. The Plan advocated the need to increase the employment content of growth by promoting sectors and activities, which employ more labour per unit of output. On the whole, the Plan aimed at the creation of approximately 50 million employment opportunities—30 million from the normal process of growth and additional 20 million from special initiatives—during the Plan period of five years. The results of the sixty-first NSSO round show that above 47 million persons were provided employment during 2000–05.

Table 10.4 Employment and Unemployment by Usual Principal Status in India

<i>Particular</i>	<i>(in million)</i>			
	1983	1993–94	1999–2000	2004–05
Labour force	277.34	343.56	377.88	428.37
Workforce	269.36	334.54	367.37	415.27
Number of unemployed	7.98	9.02	10.51	13.10
Unemployment rate*	2.88	2.62	2.78	3.06

Source: Economic Survey 2006–07, GoI (2007b).

Note: *As a proportion of labour force (%).

Net annual addition to employment on Usual Principal Status (UPS) basis went up from 5.47 million during 1993–94 to 1999–2000, to 9.58 million during 1999–2000 to 2004–05. Simultaneously, however, according to the sixty-first round estimates, during 1999–2000 to 2004–05, the labour force grew even faster at an annual rate of 2.54 per cent compared to the annual employment growth of 2.48 per cent. As a result, despite the faster growth of employment, unemployment (on UPS basis) was higher at 3.06 per cent of the labour force in 2004–05, as compared to 2.78 in 1999–2000. Incidence of unemployment had come down from 2.88 per cent in 1983 (thirty-eight round) to 2.62 per cent in 1993–94 (Table 10.4).

Tables 10.5 and 10.6 show the unemployment rates as per the fifty-fifth round and sixty-first round of the NSSO for rural areas and urban areas of India, respectively. As one could see from the tables, unemployment rates were lower in rural areas than in urban areas for both males and females. Within the rural areas, unemployment rates for males were higher than those for women, except for Current Daily Status (CDS) in the sixty-first round. But in the urban areas, the opposite was true.

Out of the 377.88 million labour force in 1999–2000, 337 million were employed (251 million in rural areas and 86 million in urban areas) and 26.6 million (7.32 per cent) were unemployed. The primary sector—agriculture, animal husbandry, fisheries and forestry—employed 191 million (57 per cent) of the workforce, unorganised non-agricultural sector employed 118 million (35 per cent) and the organised sector employed

Table 10.5 Unemployment Rates for 55th Round and 61st Round of NSSO in Rural India

<i>NSSO Round</i>	<i>(in per cent)</i>					
	<i>Rural</i>					
	<i>Male</i>			<i>Female</i>		
	<i>UPS</i>	<i>CWS</i>	<i>CDS</i>	<i>UPS</i>	<i>CWS</i>	<i>CDS</i>
55th (1999–2000)	2.1	3.9	7.2	1.5	3.7	7.0
61st (2004–05)	4.4	3.8	8.0	3.1	4.2	8.7

Source: Economic Survey 2006–07, GoI (2007b).

Note: Usual: Usual Principal Status (UPS); CWS: Current Weekly Status; CDS: Current Daily Status.

Table 10.6 Unemployment Rates for 55th Round and 61st Round of NSSO in Urban India

NSSO Round	Urban						(per cent)
	Male			Female			
	Usual	CWS	CDS	Usual	CWS	CDS	
55th (1999–2000)	4.8	5.6	7.3	7.1	7.3	9.4	
61st (2004–05)	4.4	5.2	7.5	9.1	9.0	11.6	

Source: Economic Survey 2006–07.

Note: Usual: Usual Principal Status (UPS); CWS: Current Weekly Status; CDS: Current Daily Status.

just 28 million (8 per cent). Employment in the organised sector had increased slowly from 24 million in 1983 to 28 million in 1999–2000. Evidently, unless some spectacular changes occur, the organised sector's share in the absorption of the additions to the labour force will remain small in the near future too. As a result, a major portion of the additions to the labour force will have to be absorbed in the unorganised non-agriculture sector, that is, rural non-farm sector as well as urban informal sector, as agriculture is already overcrowded.

The composition of employment (self-employment, regular salaried employment and casual employment) has been changing. While self-employment is on the decline, casual employment is on the rise. The share of self-employed in the rural workforce declined from 63 per cent in 1977–78 to 56 per cent in 1999–2000, while the proportion of casual labour has increased from 30 per cent to 37 per cent. During the same period regular employment has declined marginally from 7.7 per cent to 6.7 per cent.

During the last two decades there have been some perceptible trends in the structure of rural employment. The contribution of the agricultural sector in the employment of rural workforce has declined from 83 per cent in 1977–78 to 76 per cent in 1999–2000. The annual growth rate of workforce in agriculture was 1 per cent during 1977–99, while the same in non-agricultural occupations was 4.3 per cent during 1977–88 and 2 per cent during 1987–2000. In agriculturally developed states, non-agricultural households in rural areas are gradually withdrawing completely from cultivation to concentrate fully on non-agricultural occupations. Employment diversification occurred even in some semi-arid regions wherein toddy tappers and shepherds reverted to their traditional occupations from casual labour in agriculture. Expansion of the rural non-farm sector has been influenced by the growing commercialisation in the rural economy. This is the normal pattern of development and in fact, the process has been very slow in India.

Labour force projections show that around 10 million persons will be added to the labour force during the period 2005–15 and a major portion will be located in the rural areas of the country. To achieve the goal of full employment by 2015, it will require an annual employment growth rate of 2.8 per cent to absorb the additions to the labour force and to clear the backlog of unemployed persons (NIRD 2005: 83–87).

POVERTY AND UNEMPLOYMENT ALLEVIATION PROGRAMMES

The failure of the growth-oriented strategy of the 1960s to make any significant dent on the problems of rural poverty and unemployment led to its re-examination in the late 1960s. Inequitable distribution of benefits of the growth-oriented programmes between rich and poor households within an area was officially acknowledged in the early 1970s, and a number of corrective measures in the form of programmes were taken to ameliorate the problems. We discuss here the major programmes taken up by the government with the main objective of alleviation of poverty and unemployment.

The poverty alleviation programmes were aimed at tackling the problems of poverty and backwardness directly by helping the weaker sections to increase their incomes through self-employment and wage-paid employment. The major premise of the group-specific programmes was that their benefits would flow to the weaker sections because of the specificity of the target groups and target areas.

We now discuss the salient features of the major poverty and unemployment eradication programmes launched in India from time to time.

Public Distribution System (PDS)

The PDS is perhaps the oldest of all the programmes that were designed to ensure food security in India, particularly of the poor. It is perhaps the world's largest food distribution network having within its fold over 4,35,000 fair price shops, distributing commodities worth more than Rs 15,000 crore annually. The basic objective of the PDS is to ensure that essential commodities are made available to the people at reasonable price, so as to provide them a safety net against inflation.

The PDS has been an integral part of India's food policy since the World War II period, when statutory rationing was introduced in big cities, such as Mumbai and Kolkata. After independence also, the GoI has continued to follow the system, although the nature and the extent of government intervention has varied over time, depending on fluctuations in food grains production and price rise. The First Five Year Plan emphasised the distribution of food grains through the statutory rationing system in cities and towns having population of more than 5,000 persons and in chronically food-deficit areas of the country. In the Second Five Year Plan, the PDS was extended to cover, besides food grains, other essential commodities also. In the Third Five Year Plan, a procurement and distribution system was created for ensuring price stabilisation. In the Fourth Five Year Plan, the scope of the PDS was further widened by covering all rural areas in the country and distribution of other goods of mass consumption with the help of cooperative stores. In the Fifth Five Year Plan, the PDS was focussed on the poor. The Sixth Five Year Plan emphasised the distribution of food grains to the disadvantaged groups. In the Seventh Five Year Plan, the PDS was included in the Minimum Needs Programme (MNP). The Eighth Five Year Plan laid emphasis of the intensification of

the PDS in the rural and disadvantaged areas, and strengthened the infrastructure by establishing new fair price shops. The Ninth Five Year Plan took a broader view of the food security system and included nutritional security in it. The system was continued in the Tenth Five Year Plan and will continue in the Eleventh Five Year Plan also. A provision of Rs 32,667 crore was made for ensuring food security under the PDS.

In order to remove some of its drawbacks, the PDS was revamped in 1992 and the revamped system was launched in tribal, arid, hilly, drought-prone and other remotely located areas of the country. The objective of revamping the PDS was to increase its reach on the basis of area approach, and to eliminate the leakages and malpractices that had crept in the system. In June 1997, a new policy of targeted PDS (TPDS) was introduced as an important constituent of the strategy of poverty alleviation. One of the important features of the implementing strategy of the Tenth Five Year Plan is the crucial role given to the panchayati raj institutions (PRIs) in the delivery of TPDS.

There have been several attempts to study the impact of the PDS. Gulati (1989) found that the PDS had a positive impact on the nutritional status of the malnourished and the poor. An evaluation study conducted by the Planning Commission in 1995 identified several deficiencies in the implementation of the revamped PDS including (a) proliferation of bogus ration cards; (b) inadequate storage arrangements; (c) ineffective functioning of vigilance committees and (d) failure to issue ration cards to all eligible households (Jena 1998: 915). Recently, *The Times of India* reported that wheat and rice worth Rs 31,000 crore had been siphoned off the PDS in the three years, 2004–05 to 2006–07 (Box 10.1).

Box 10.1 Large-scale Diversion of PDS Food Grains in India

Every year, India's poor are cheated of 53.3 per cent of the wheat and 39 per cent of the rice meant for them. With the exception of 11 states and the Union Territories, large-scale diversion of PDS food grains takes place everywhere in India. In three years, 2004–05, 2005–06 and 2006–07, wheat and rice worth Rs 31,000 crore had been diverted from the PDS, thanks to the widespread corruption and inefficiency in the system. The North-East (NE) states fared the worst in terms of the extent of leakage. For example, in six of the eight NE states, namely, Sikkim, Meghalaya, Manipur, Mizoram, Nagaland and Assam, 100 per cent of the PDS wheat was diverted. If the political and policing problems in the NE states could be blamed for such large scale leakages, other states have no alibi. In terms of the extent of loss to the exchequer, Uttar Pradesh fared the worst, followed by West Bengal, Madhya Pradesh, Assam, Rajasthan and Maharashtra. Such large-scale leakages in the PDS have been known for decades now but no correctives are taken to fix the problem. Good governance is the only answer to the problem.

Source: The Times of India (1997).

Self-employment Programmes

We now briefly discuss a few salient features of the self-employment programmes.

The Integrated Rural Development Programme (IRDP)

The IRDP is the most important programme that falls in the category of self-employment programmes. It is the single largest anti-poverty programme currently underway in all the community development blocks in the country. It was launched in 1978–79 in 2,300 selected blocks in the country and was extended to all the blocks in the country with effect from 2 October 1980. It aims at providing income generating assets and self-employment opportunities to the rural poor to enable them to rise above the poverty line once and for ever. The IRDP in effect seeks to redistribute assets and employment opportunities in favour of the rural poor and thereby reduce income inequality. It is a centrally sponsored scheme and is funded on 50:50 basis by the centre and the states. The IRDP beneficiaries are assisted through viable bankable projects which are financed partly by subsidy and partly by bank loans. The subsidies are provided at differential rates ranging from 25 per cent to 50 per cent of the capital cost of the scheme, subject to a maximum of Rs 5,000 in drought-prone area programmes (DPAP) areas and Rs 4,000 in non-DPAP areas; for a Scheduled Caste/Scheduled Tribe (SC/ST) or disabled beneficiary the limit is Rs 6,000.

The IRDP is implemented by an autonomous agency called the District Rural Development Agency (DRDA). At the national level, the Ministry of Rural Development is responsible for the release of the central share of the funds, policy formulation, overall guidance, direction, coordination, monitoring and evaluation of the IRDP.

The Ministry of Rural Development has provided for concurrent evaluation and impact studies of the IRDP as an aid to administer the programme effectively. The state governments have been advised to undertake evaluation studies from time to time to ascertain the impact of the programme and to measure the extent to which the beneficiaries have directly derived additional income and employment from the investments made under the programme. The state governments may make use of their own evaluation machinery, wherever practicable, to undertake concurrent evaluation and impact studies, or they may entrust this work to selected academic/research institutions of standing and repute in this field.

Several all-India evaluation studies of the IRDP have been carried out by the National Bank for Agricultural and Rural Development (NABARD), the Reserve Bank of India (RBI), the Programme Evaluation Organisation (PEO) of the Planning Commission and academic institutions. The Public Accounts Committee (PAC) of the Indian Parliament made some recommendations in its report about reshaping the IRDP. Some of the major inadequacies of the IRDP pointed out by the PAC report are as follows (Hirway 1988):

1. The per capita investment (loans plus subsidy) too low to generate enough income to bring the beneficiary family above the poverty line.
2. Inadequate infrastructural support for various income generating activities.
3. Inadequate representation of the concerned agencies on the governing body of the DRDA.
4. Absence of people's participation in the programme.

The subsidies provided under the IRDP have attracted the interest of politicians wishing to divert the subsidies to their current or potential supporters. This has contributed to the low repayment rates on the loan component, since defaulters (and bank staff) are aware of the political support enjoyed by this category of beneficiaries. It has also meant that a high proportion of beneficiaries are not 'below the poverty line'.

Malpractices by lower level officials has been pervasive. Surveys in some areas indicate that a 10 per cent deduction was made by bank officials as informal 'charges'. In other localities, over 20 per cent of the subsidy component was charged in various ways as 'speed money'. Another common form of corruption prevalent in some areas was the collusion between officials and local middlemen, who provided the asset specified by the beneficiaries and got some money from the beneficiaries for allowing the over-invoicing of the cost of the asset and shared the booty with the local officials. This practice was contrary to the regulations, which require that the specified asset be provided by approved suppliers and not by middlemen.

Training of Rural Youth for Self Employment (TRYSEM)

A special scheme called TRYSEM was initiated in 1979 with the principal objective of removing unemployment among the rural youth. The TRYSEM is an integral part of the IRDP and is concerned with equipping rural youth in the age group of 18–35 years with the necessary skills that would enable them to be self-employed. Any rural youth below the poverty line is eligible for selection but preference in selection is given to Scheduled Caste (SC), Scheduled Tribe (ST) and women candidates. The TRYSEM training is sharply focussed on trades whose products have high potential demand and can lead to sustainable IRDP projects.

A TRYSEM evaluation study covering a sample of 6,686 beneficiaries arrived at the following conclusions: Of the total beneficiaries covered, around 54 per cent were women, which is more than the prescribed norm that 40 per cent of the TRYSEM beneficiaries should be women. Caste-wise distribution shows that 32 per cent of the total beneficiaries belonged to SC and 21 per cent to ST, which is as per the norms of the programme (that 50 per cent beneficiaries should be SC or ST). There has been a 20 per cent increase in the employment levels of the beneficiaries after training under the TRYSEM. About 15 per cent of them have started their own employment ventures. Only 26 per cent of them received any subsidy/rebate/concession. More than 80 per cent of the TRYSEM beneficiaries were satisfied with the quality of training imparted and stipend offered to them during training.

Development of Women and Children in Rural Areas (DWCRA)

The DWRCRA programme was launched in 1982 as part of the IRDP. Its aim was to empower rural women living below the poverty line by way of organising them to create sustainable income generating activities through self-employment. It was the first programme of its kind that specifically focussed on improving the quality of life

of rural women. A unique feature of the DWCRA, unlike the other IRDP components, was that along with the improvement in income, it also focussed on access to health, education, safe drinking water, sanitation, nutrition, and so on. Thus, it not only aimed at promoting economic development, but also facilitated social development. Another unique feature of the programme was that it emphasised group activity. It was thought that in the long run, women's empowerment depends on creation of a movement that promotes awareness and self-reliance.

An evaluation study of the DWCRA brought out that DWCRA had a direct and significant impact on employment and group activities. As high a proportion as 93 per cent of the beneficiaries reported that the DWCRA had created a desire for self-employment, whereas about 89 per cent of the beneficiaries felt that the DWCRA had raised their incomes. The DWCRA had a visible impact on savings, economic conditions and social prestige, but it had less impact on health, sanitation, drinking water and children's education, which are more of community services.

Swarnjayanti Gram Swarozgar Yojana (SGSY)

The SGSY was operationalised in April 1999 after restructuring and combining the IRDP with allied programmes into a single self-employment programme. The basic objective of the SGSY is to bring the assisted poor families above the poverty line by providing them income-generating assets through bank credit and government subsidy. Formation of organisations of the poor at the grassroots level through a process of social mobilisation for poverty reduction is central to the programme. The approach of the SGSY is based on women's self help groups (SHGs) that have to act as a financial intermediary and a vehicle for women's empowerment. The non-governmental organisations (NGOs) are expected to facilitate the formation of such groups. Community involvement is emphasised in the programmes, in contrast to IRDP.

The programme has been conceived as a holistic self-government programme, covering all aspects of self-employment of the rural poor, such as organisation of the poor in SHGs, their capacity building, selection of key activities, planning of activity clusters, infrastructure build-up, and technology and market support. The programme aims at establishing a large number of micro-enterprises in rural areas based on the ability of the poor and the potential of each area. Assistance under the SGSY is given in the form of subsidy by government and credit by the banks. Credit is a critical component of the SGSY, and subsidy is back-ended, a minor and enabling element. Therefore, SGSY, in contrast to IRDP, envisages greater involvement of the banks in the planning and preparation of project reports, identification of activity clusters, choice of activities of SHGs, selection of individual beneficiaries and post-credit monitoring including loan recovery. The interface among the DRDAs, the line departments of state governments, banks, NGOs and PRIs is necessary for the effective implementation of this programme. The programme has in-built safeguards for the weaker sections. Thus, the main tenets of the SGSY are (a) key activities, (b) cluster approach and (c) group method. The first reduces the number of activities; the second shrinks the geographical spread to fewer contiguous or selected

villages and the third reduces the number of clients from a large number of individuals to a small number of groups. All these are expected to reduce the burden of follow-up and the training and education inputs for providing backward and forward linkages.

The scheme is being implemented on a cost sharing basis of 75:25 between the centre and states. The number of SHGs has been growing rapidly; as on December 2007, about 27.37 lakh groups had been formed since April 1999, and 93.21 lakh *swarozgaris* had been assisted with a total outlay of Rs 19,340.32 crore.

The total investment (credit plus subsidy) during 2006–07 is expected to be about Rs 3850 crore. The investment per assisted family is about Rs 25,000. Evaluation studies show that only about one-fourth of assisted families could cross the poverty line. The central and state governments had allocated Rs 1,466 crore (66 per cent for subsidies, 12 per cent revolving fund, 12 per cent infrastructure, and so) for the SGSY during 2006–07.

SHGs had a positive and significant impact in Andhra Pradesh, Kerala and Tamil Nadu, but have not yet made their presence felt in the poorer states such as Bihar, Orissa and Uttar Pradesh. Most of the factors responsible for their poor performance relate to the delivery systems. These are *ad-hocism* in planning and implementation processes, inadequate reach of delivery systems, negative attitude of bankers towards credit disbursement to the poor, and lack of understanding and appreciation of complexity of livelihood issues. Cluster approach has also been a non-starter in many of the states. The DRDAs and the line departments of the state governments have failed in providing non-credit inputs to the beneficiaries. Above all, the building up of a gender perspective in the programme has been conspicuously absent.

Wage-employment Generating Schemes (WEGS)

Wage-employment programmes have become important instruments for alleviating poverty and smoothening consumption during critical periods including, drought and flood situations. They have been perceived to be both protective (via income transfer) and promotional (via infrastructure development) forms of safety nets. The Rural Works Programme (RWP) was the first major government intervention aimed at providing employment to the unemployed, particularly in the lean season. It was introduced in 1971. However, due to its limited scope, and its various organisational and administrative deficiencies, it did not make any significant dent in the problem of unemployment.

A series of special employment programmes followed the RWP. The major programmes of the series were as follows:

1. The Crash Scheme of Rural Employment (CSRE), introduced in April 1971.
2. The Food-for-Work (FFW) Programme, introduced in April 1977 as a non-plan scheme.
3. The Jawahar Rozgar Yojana (JRY), launched in April 1989.
4. The Sampoorna Grameen Rozgar Yojana (SGRY), launched in 2001.
5. The Employment Assurance Scheme (EAS), launched on 2 October 1993.
6. The National Food-for-Work (NFFW) Programme, launched in 2005–06.
7. The National Rural Employment Guarantee (NREG) Scheme, launched in 2006.

The Crash Scheme of Rural Employment (CSRE)

In the early 1970s, when the planning strategy emphasised a direct attack on poverty, the CSRE was introduced in April 1971 as a crash scheme to alleviate the prevailing conditions of unemployment and underemployment in rural areas by generating additional employment through additional rural works. Apart from employment generation, the other objective of the CSRE was to generate assets of a durable nature in the areas of minor irrigation, land development, roads, afforestation, school buildings and other durable assets.

The Food-for-Work (FFW) Programme

This programme provided temporary employment with food grains as wages. Its objective was to ensure employment and food security to the rural people affected by natural disasters like droughts and floods. A new programme called the National Food-for-Work Programme (NFFWP) was launched in 150 most backward districts in November 2004. It was a 100 per cent centrally sponsored scheme. It aimed at generating supplementary wage employment and providing food security through creation of need-based economic, social and community assets.

Jawahar Rozgar Yojana (JRY)

The JRY was the single largest wage employment programme implemented in all the villages of the country through the PRIs. The JRY was launched in April 1989, after merging the then ongoing two wage employment programmes, that is, National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP). The main objective of the JRY was to provide additional gainful wage employment to unemployed and underemployed persons in the rural areas during the lean agricultural seasons. The JRY was targeted at people living below the poverty line. The expenditure under the programme was shared between the centre and the states in the ratio of 80:20.

The JRY contributed to the creation of durable assets in the form of school buildings, roads and other infrastructure. It was, however, felt that a stage had come when the development of village infrastructure had to be taken up in a planned manner. Keeping this in view, the JRY was restructured in 1999 and renamed as the Jawahar Gram Samridhi Yojana (JGSY). The main features of the JGSY were:

1. creation of rural infrastructure;
2. implementation of JGSY entirely by village panchayats;
3. direct channelisation of funds to the village panchayats through the DRDAs/zila panchayats;
4. vesting in the village panchayats the sole authority for preparation of Annual Action Plan (AAP) and its implementation with the approval of the gram sabha;

5. empowerment of the gram sabha to approve the schemes;
6. wage employment restricted to below poverty line (BPL) families;
7. 30 per cent of the employment opportunities reserved for women;
8. delegation of administrative power to panchayats to suitably adjust the 60:40 wage material ratio for building demand-driven rural infrastructure;
9. authorisation of the gram sabhas to undertake social audit; and
10. assignment of responsibility to DRDAs/zila parishads for overall guidance, supervision and monitoring and periodical reporting.

Sampoorna Grameen Rozgar Yojana (SGRY)

A new scheme called the SGRY was launched in 2001. It combined the various features of EAS, FFW and JGSY, and replaced those schemes. The main aim of the SGRY remains the same as of previous employment programmes, which is, providing wage employment in rural areas and creation of economic assets. Under the scheme, wages are paid in both cash and food grains. The scheme is being implemented through the PRIs. Studies have shown that it provided only 29 days of employment per beneficiary per annum. Indiscriminate use of machines, underpayment of wages and leakage of food grains were the major lacunae of the SGSY (GoI 2006b).

Employment Assurance Scheme (EAS)

The EAS was launched on 2 October 1993. It guaranteed 100 days of employment per annum to rural poor, particularly during lean seasons. It also provided for materials for the creation of durable assets and was, to a large degree, self-targeting, assuming that only the poorest will opt to work for the basic minimum wage. The use of food grains for payment in kind is minimal in the EAS, and its regulations prohibit the engagement of contractors or middlemen. But this provision is widely flouted, and has been accompanied by falsification of attendance lists and other irregularities. Some estimates suggest that, given the widespread malpractices among administrators and contractors, only 25 per cent of the wage funds, to which beneficiaries are entitled, actually reaches them, with the remaining 75 per cent disappearing through leakages of various kinds.

National Food-for-Work Programme (NFFWP)

Duly taking cognisance of the need for alleviating the chronic problems of rural poverty and unemployment, and reducing the inter-regional disparities in economic growth and development in India, the Planning Commission designed and launched in 2004–05 a new programme, called the National Food-for-Work Programme (NFFWP). It identified 150 most backward districts in India on the basis of incidence of poverty as indicated by the proportion of SC/ST population, agricultural productivity per worker and agricultural

wage rate. Most of the districts identified are tribal dominated districts. The main objective of the NFFWP is to generate supplementary wage employment and provide food security through the creation of need-based economic, social and community assets. This is to be done through the provision of additional resources, over and above the resources available under the SGRY, to the identified districts of the country. The NFFWP is a 100 per cent centrally sponsored scheme. A five year Perspective Plan was prepared for each of the 150 districts.

National Rural Employment Guarantee (NREG) Scheme

Consequent upon the passing of the Rural Employment Guarantee Act on 7 September 2005, the National Rural Employment Guarantee (NREG) scheme was launched on 2 February 2006 in 200 backward districts with a view to extend it to all the districts within five years. The scheme subsumes both SGRY and FFW in the districts covered by the NREG scheme. It aims at enhancing the livelihood security of the people in rural areas by guaranteeing 100 days of wage employment in a financial year, to a rural household whose adult members volunteer to do unskilled manual work. For the first time in India, it recognises the right to work as a fundamental legal right.

Besides providing 100 days of guaranteed employment in a financial year to every poor rural household, it also aims at developing rural infrastructure by undertaking the generation of wage employment schemes that address the causes underlying drought, deforestation and soil erosion.

Besides the 200 most backward districts that were notified under the NREG Act (NREGA) on 2 February 2006, 130 additional districts were notified in the financial year 2006–07. The remaining 266 districts had been notified on 28 September 2007, where the scheme had come into effect from 1 April 2008. Adequate funds for this have been made available. The districts to be notified will start preparations to transit to NREGA. The universalisation of the Act ahead of the schedule is a vindication of the positive impact it has had on the rural poor and reflects the government's unflinching commitment of improving the condition of the rural poor.

The implementation of the Act had generated employment for 2.10 crore rural households in the first phase districts during 2006–07, creating 90.50 crore person days of work. Of the total number of beneficiaries, more than 60 per cent belonged to the ST and SC groups, and 40 per cent were women. With due focus on creating durable assets, eight lakh works were taken up, of which 54 per cent pertained to water conservation and water harvesting. As against the employment demanded by 2.61 crore rural households, 2.57 households had been provided wage employment during 2007–08. A budget allocation of Rs 12,000 crore (including NER component) was made for 2007–08 and Rs 10,501.02 crore had been released till 30 January 2008 (GoI 2008).³

There is also an increasing evidence of the reduction in distress migration and improvement in land productivity. An amendment to the schedule of the Act now permits works pertaining to land development, horticulture, plantation and minor irrigation on the landholdings of not only SC/ST families but also all BPL families, thereby directly linking wage employment with agricultural productivity.

Utmost priority has been given to vigilance and monitoring. Concurrent monitoring of all NREG scheme districts is undertaken through independent monitors, and independent monitoring studies have also been undertaken. Programme processes are sought to be made transparent through social audits, which actively involve civil society organisations. The Right to Information (RTI) Act has been effectively used for enhancing the efficacy of the NREG schemes. This has created a congenial environment for ensuring public accountability. All critical data has been placed in public domain through a web enabled Management Information System (MIS)⁴ (GoI 2005b). For the first time, muster rolls are being placed on the website for citizen scrutiny.

The NREG scheme holds high promise for strengthening the SHG movement. Synergistic linkages between the NREG scheme and SHG can be mutually beneficial. The implementation of NREG scheme in Andhra Pradesh shows how SHGs can be involved in the preparation of a list of persons available for work, identification of shelf of projects and executing the works under NREGA. Integration of the existing Area Development Programmes (ADP) with NREG scheme and facilitating interaction between the NREG scheme and SHG federations would go a long way in promoting people-centric approach to poverty reduction.

The space available here does not permit any evaluation of the wage employment programmes launched in India from time to time under different names. It would suffice to say that all these programmes had very little dent of the problem of chronic unemployment in rural areas, particularly the tribal and other backward areas.

SOCIAL WELFARE-ORIENTED PROGRAMMES (SWOP)

Besides, the self-employment and wage employment schemes, several SWOP have also been launched by the GoI from time to time for improving the lot of the rural poor. The major programmes belonging in this category include the NSAP, the AABY and the RSBY. The NSAP programme subsumes (a) the National Old Age Pension Scheme (NOAPS); (b) the National Family Benefit Scheme (NFBS) and (c) the National Maternity Benefit Scheme (NMBS).

National Social Assistance Programme (NSAP)

The NSAP was sponsored by the Ministry of Rural Development, GoI, with the main goal of providing social assistance to the rural poor in India. It came into effect from 15 August 1995. It aims at improving the quality of life of the rural poor, ensuring equality and effecting people's participation in the process. The programme extends 100 per cent central assistance to the states and union territories to provide the benefits in accordance with the norms, guidelines and conditions laid down by the central government. The NSAP introduces a national policy for social security assistance to the poor families in the case of old age, death of the primary breadwinner and maternity. It provides an

opportunity for linking the social assistance package to schemes for poverty alleviation and provision of basic needs. The programme is being implemented through a synergistic partnership with state governments and under the direct supervision of the DRDAs in close collaboration with the various PRIs. As stated above, it has three components, namely, the NOAPS, the NFBS and the NMBS.

The NOAPS was introduced in 1995 in response to the deprivation and insecurities faced by the elderly people. It provides for a pension to people above the age of 65 years, who have no source of income or financial support and are destitute. The scheme has proved to be beneficial. The pension amount being given is found to have been spent on meeting daily household expenditure and it accounts for about 25 per cent to 40 per cent of the total annual income of poor households. However, over a period of time, certain gaps were noticed which needed rectification. One was the low amount of pension being provided. The other was the restriction of coverage only to destitute. To rectify these drawbacks of the scheme, a new scheme called the Indira Gandhi National Old Age Pension Scheme (IGNOAPS) was launched in November 2007. The pensioners in the new scheme would receive at least Rs 400 per month as against the earlier provision of Rs 150, to be shared by the centre and the state governments in the 50:50 ratio and the coverage is extended to all the elderly people below the poverty line.

The NFBC grants a one-time financial assistance of Rs 10,000 to families living below the poverty line when their main earning member dies. It provides for a grant of Rs 500 to pregnant women of families living below the poverty line. Besides there is a Rural Group Insurance Scheme (RGIS), which provides for a maximum of life insurance cover of Rs 5,000 for main earning members of families living below the poverty line on a group basis. The government contributes half the premium of Rs 50–70.

Aam Admi Bima Yojana (AABY)

Under a new scheme called AABY, launched on 2 October 2007, insurance to the head of the family of rural landless households in the country will be provided against natural death as well as accidental death and partial/permanent disability. This cover is Rs 75,000 on death due to accident and permanent disability due to accident, Rs 37,500 in case of partial permanent disability due to accident and Rs 30,000 in case of death of a member, prior to terminal date. The premium to be charged under the scheme is Rs 200 per annum per member, 50 per cent of which is to be contributed by the central government and remaining by state governments.

Rashtriya Swasthya Bima Yojana (RSBY)

The RSBY was formally launched on 1 October 2007. All workers in the unorganised sector who come in the category of BPL and their families will be covered under the scheme. The scheme also has a provision of smart cards to be issued to the beneficiaries to enable

cashless transaction for health care. The total sum insured is Rs 30,000 per family per annum, with the GoI contributing 75 per cent of the annual estimated premium amount of Rs 750, subject to a maximum of Rs 565 per family per annum, while the state governments are expected to contribute 25 per cent of the annual premium as well as any additional premium. The cost of the smart card would also be borne by central government.

The effectiveness of the poverty alleviation programmes in targeting the poor and alleviating poverty has been a mixed bag of success in some of the states and failure in other states. Variations in effectiveness are largely due to efficiency or otherwise of the implementing machinery, that is, the delivery system, strengths of the PRIs, existence or non-existence of community based organisations of people, and initiative and innovativeness of the states in evolving approaches and institutional arrangements in harmony with the ground conditions. In the block of northern states where the concentration of poverty is high, and which have also generally not done well in terms of economic growth, the implementation of poverty alleviation programmes has been weak. Andhra Pradesh and Kerala, on the other hand, have evolved very effective institutional models for poverty alleviation efforts (GoI 2006b).

MAIN POINTS

1. Poverty and unemployment have been the bane of India since long. Their reduction has been one of the major goals of India's development planning since the beginning of the planning era. Accordingly, the Government of India (GoI) has launched various programmes from time to time aimed at alleviation of poverty and unemployment.
2. Poverty alleviation schemes and programmes have been in place for a long time now. The programmes and schemes have been modified, consolidated, expanded and improved over time. The targeted programmes fall into four broad categories: (a) self-employment programmes; (b) wage-employment programmes; (c) public distribution system (PDS); and (d) other social welfare oriented programmes (SWOP), such as National Social Assistance Programme (NSAP) and the Aam Admi Bima Yojana (AABY).
3. Undoubtedly, India has made some progress in the reduction of income poverty over time. Yet, according to the Uniform Recall Period (URP) consumption distribution data of the sixty-first round of the National Sample Survey Organisation (NSSO) survey, in 2004–05, the poverty ratio in the rural areas of India was 28.3 per cent as against 25.7 per cent in the urban areas, and 27.5 per cent for the country as a whole. According to Human Development Report (HDR) 2003 of the UNDP (2003), India has the largest number of poor among the countries of the world and is home to one-fourth of the world's poor.
4. The regional differences in poverty reduction are substantial. The decline in incidence of poverty in the states ranged between 12 and 50 percentage points in rural areas during 1973–2000 and 20–40 percentage points in urban areas. The inter-state

variations in the rural poverty reduction can be attributed to the variations in their initial endowments of natural resources, physical infrastructure, human resources and agricultural productivity.

5. The poverty alleviation programmes were aimed at tackling the problems of poverty and backwardness directly by helping the weaker sections to increase their incomes through self-employment and wage-employment.
6. According to the sixty-first round estimates of the NNSO, during 1999–2000 to 2004–05, the labour force grew even faster at an annual 2.54 per cent compared to annual employment growth of 2.48 per cent. As a result, despite the faster growth of employment, unemployment (on Usual Principle Status [UPS] basis) was higher at 3.06 per cent of the labour force in 2004–05 as compared to 2.78 per cent in 1999–2000. Incidence of unemployment had come down from 2.88 per cent in 1983 to 2.62 per cent in 1993–94.
7. The public distribution system (PDS) is perhaps the oldest of all programmes that were designed to ensure food security in India, particularly of the poor. It is perhaps the world's largest food distribution network. The basic objective of the PDS is to ensure that essential commodities are made available to the people at reasonable price, so as to provide them a safety net against inflation.
8. The Integrated Rural Development Programme (IRDP) is the most important programme that falls in the category of self-employment programmes. It is the single largest anti-poverty programme currently underway in all the community development blocks in the country.
9. Wage-employment programmes have become important instruments for alleviating poverty and smoothening consumption during critical periods, including drought and flood situations. The Rural Works Programme (RWP) was the first major public programme introduced in 1971 with the main aim of providing employment to the unemployed, particularly in the lean season. A series of wage-employment programmes followed the RWP.
10. The National Rural Employment Guarantee (NREG) scheme was launched on 2 February 2006 in 200 backward districts with a view to extend it to all the districts within five years. It aims at enhancing the livelihood security of the people in rural areas by guaranteeing 100 days of wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. For the first time in India, it recognises the right to work as a fundamental legal right.
11. Besides the self-employment and wage-employment schemes, there are a few other social welfare programmes including the National Social Assistance Programme (NSAP), the Aam Admi Bima Yojana (AABY) and the Rashtriya Swasthya Bima Yojana (RSBY). The NSAP programme subsumes (a) the National Old Age Pension Scheme (NOAPS) (b) the National Maternity Benefit Scheme (NMBS) and (c) the National Maternity Benefit Scheme (NMBS).
12. The effectiveness of the poverty alleviation programmes in targeting the poor and alleviating poverty have been a mixed bag of success in some of the states and failure in other states. Variations in effectiveness are largely due to efficiency or

otherwise of the implementing machinery, that is, the delivery system, strengths of the panchayati raj institutions (PRIs), existence or non-existence of community-based organisations of people, and initiative and innovativeness of the states in evolving approaches and institutional arrangements in harmony with the ground conditions.

NOTES

1. The percentage and number of poor in 2004–05 estimated from URP consumption distribution of NSS sixty-first round of consumer expenditure data are comparable with the poverty estimates of 1993–94.
2. The percentage and number of poor in 2004–05 estimated from MRP consumption distribution of NSS sixty-first round of consumer expenditure data are roughly (but not strictly) comparable with the poverty estimates of 1999–2000.
3. <http://www.indiabudget.nic.in>. Accessed in March 2008.
4. <http://www.nrega.nic.in>. Accessed in March 2008.

QUESTIONS FOR DISCUSSION

- 10.1. Illustrate with an example that poverty and unemployment are inter-related problems and have two-way relation, that is, one is both the cause and effect of the other.
- 10.2. Briefly discuss the conceptual and methodological problems in estimating the incidence of poverty in India.
- 10.3. Despite the plethora of poverty and unemployment eradication programmes that have been launched in India from time to time since the beginning of the planning era, why do these two problems still remain unresolved?
- 10.4. Write a critique of the public distribution system (PDS) as it is implemented at present, and suggest better ways of its implementation to achieve its objectives.
- 10.5. Write a critique of self-employment and wage-employment schemes as a means of resolving the problem of poverty.
- 10.6. What are the problems and prospects of the National Rural Employment Guarantee (NREG) scheme as an instrument of eradicating the problems of poverty and unemployment?

11

Natural Resources and Infrastructure Development Programmes

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- illustrate the genesis of various natural resource-based and infrastructure development programmes launched in India from time to time;
- identify the role of natural resources and infrastructure in rural development;
- describe the salient features of major natural resource-based programmes, such as the Drought-Prone Area Programme (DPAP), the Desert Development Programme (DDP), the Integrated Wasteland Development Programme (IWDP), the National Watershed Development Programme for Rain-fed Areas (NWDPR), and so on;
- explain the rationale for National Agriculture Insurance Scheme (NAIS) and the pilot Weather-based Crop Insurance Scheme (WBCIS) and their main features and
- describe the salient features of major infrastructure development programmes such as the Minimum Needs Programme (MNP), the Twenty Point Programme (TPP), the Rural Infrastructure Development Fund (RIDF), the National Common Minimum Programme (NCMP), and so on.

INTRODUCTION

As we stated in Chapter 5, natural resources of land, water, forests, minerals, air and solar radiation play a very important role in the process of rural development. Mother Nature provides us natural resources free of cost and performs two important functions in the process of economic growth, namely, providing inputs to production processes and assimilating the wastes generated in the process of production. Similarly, basic infrastructure¹ such as roads, schools, health care centres, markets, electricity, water supply structures, and means of transport and communication play a critical role in the process of development through rapid spread of technologies and increased access of rural people to markets and institutional credit. Several research studies have shown that the average rate of return to investment in basic infrastructure, particularly rural roads and irrigation facilities, are very high. Improved infrastructure also helps reduce the incidence of poverty; there is an inverse relationship between poverty and Infrastructure Development Index (Fan et al. 1998; Satish 2007: 32–50). Together with natural resources, infrastructure constitutes the production base of India's economy. The rural areas of India are at a great disadvantage vis-à-vis the urban areas in terms of provision of basic infrastructure. Provision of adequate, dependable and good quality infrastructure in rural areas of India is, therefore, a prerequisite for rural development. The Government of India (GoI) seems to have recognised the need for provision of basic infrastructure in the rural areas of the country and have launched from time to time several programmes for the purpose.

Inequitable distribution of the benefits of the growth-oriented programmes such the Intensive Agriculture District Programme (IADP) and the High Yielding Variety Programme (HYVP) between prosperous and backward areas was officially acknowledged in the early 1970s. As the backward areas in India are very poor in natural resources endowment as well the basic infrastructure, corrective measures in the form of several area-specific/natural resources-based and infrastructure development programmes were launched in those areas.

This chapter first presents an overview of some of the major natural resource-based development programmes and then some salient features of some of the major infrastructure development programmes launched in India from time to time. The main objective of the chapter is to familiarise the student with the salient features of those programmes, their effectiveness and the lessons that could be derived from their experience.

NATURAL RESOURCES-BASED PROGRAMMES

A brief description of major programmes in this category follows.

Drought-Prone Area Programme (DPAP)

A Rural Works Programme (RWP) was initiated in 1970–71 with the focus on the execution of rural works and employment generation in an attempt to mitigate the conditions of

scarcity in drought-prone areas. Subsequently, it was realised that a mere RWP would not help in attaining these goals. The programme was sought to be reoriented on the basis of an area development approach and was redesignated as the DPAP at the time of mid-term appraisal of the Fourth Five Year Plan. The programme was confined to those areas which were originally taken up under the RWP.

The basic objectives of the programme are:

1. to reduce the severity of the impact of drought;
2. to stabilise the income of the people, particularly weaker sections of the society and
3. to restore the ecological balance.

Some of the important elements of the DPAP are:

1. development and management of water resources;
2. soil and moisture conservation;
3. afforestation;
4. restructuring the cropping pattern and pasture development;
5. changes in agronomic practices;
6. livestock and dairy development; and
7. development of small farmers, marginal farmers and agricultural labourers.

During the Fourth Five Year Plan, the DPAP was a central sector scheme with 100 per cent financial assistance from the centre. From the Fifth Five Year Plan onwards, this scheme has been operating with funds being shared between the centre and the states on a 50:50 ratio. Under the new strategy of rural development adopted in the Sixth Five Year Plan, the DPAP was merged with the Integrated Rural Development Programme (IRDP). There are 183 districts spread over 16 states in India that are classified as drought-prone districts. They are all covered under the DPAP. The programme is now under the administrative jurisdiction of the Department of Land Resources in the Ministry of Rural Development. A technical committee constituted by the GoI under the chairmanship of C. H. Hanumantha Rao studied, *inter alia*, the implementation and impact of DPAP, and made some recommendations for improving its effectiveness. They are briefly presented in the following section.

Desert Development Programme (DDP)

The DDP was launched in 1977–78 in the hot desert areas of Rajasthan, Gujarat and Haryana, and cold desert areas of Jammu and Kashmir and Himachal Pradesh as a central sector scheme with 100 per cent financing by the centre. With effect from 1979–80, it has been operating as a central sector scheme with expenditure being shared between the centre and the states in the ratio of 50:50.

The DDP aims at mitigating the adverse effects of drought on crops, and human and livestock populations through control of further desertification of the desert areas and

enhancing productivity of local resources to raise the income and employment levels of the local inhabitants. The strategy adopted to achieve the objectives of the programme involves development of the selected areas on a watershed basis.

The activities taken up under the DDP include afforestation, water harvesting, rural electrification and animal husbandry. In hot sandy desert areas, sand dune stabilisation and shelter belt protection were given a higher weightage than other activities. With a view to identifying the weaknesses of the programme and to consider the requests of some state governments for including more areas under the programme, the Ministry of Rural Areas and Employment, GoI, constituted in 1993 a technical committee on DPAP and DDP under the chairmanship of C. H. Hanumantha Rao. The committee submitted its report in April 1994. Based on the recommendations of the committee, new districts/blocks were brought under the fold of the programme and fresh guidelines for watershed development applicable to DPAP and DDP were issued in October 1994 and made applicable from 1995–96. The committee found the performance of the programme poor. The main reasons identified by the committee for the poor performance included the failure of the implementing agencies to adopt the watershed approach, lack of people's participation in planning and implementation of the programme, inadequacy of funds and non-availability of trained personnel (GoI 1997a: 42–43). The programme is now under the administrative jurisdiction of the Department of Land Resources in the Ministry of Rural Development.

Integrated Wasteland Development Programme (IWDP)

India has vast tracts of wastelands that are normally defined as degraded lands, which, at reasonable cost and effort, can be brought under vegetative cover. Casual estimates of the extent of wastelands in India vary from 75 million hectares (mha) to 200 mha (Balooni and Singh 2003: 1). A recent survey by the National Bureau of Soil Survey and Land Use Planning (NBSSLUP) revealed that 66 per cent of India's geographic area (around 192 mha) is at varying stages of degradation (quoted in Haque 1997). India needs to reclaim its degraded land and make it productive, so as to meet the increasing demands of its rapidly growing population and increasing affluence.

There are several wastelands development projects currently underway in India including the IWDP. This programme has been under implementation since 1989–90 under the auspices of the National Wastelands Development Board (NWDB), which was established in 1985, under the Ministry of Environment and Forests. With effect from July 1992, both the NWDB and the programmes sponsored by it have been operating under the administrative control of the Department of Wastelands (now Department of Land Resources), Ministry of Rural Development. From 1 April 1995, the IWDP is being implemented on watershed basis under the common guidelines for watershed development. The programme also helps in generation of employment in rural areas, besides enhancing people's participation in the wastelands development programmes at all stages. This leads to equitable sharing of benefits and sustainable development.

Initially, the IWDP was a 100 per cent central sector scheme. Now, the funding pattern has been changed from the 100 per cent central funding to funding by both the centre as well as the states in the ratio of 75:25 to ensure greater involvement of state governments. The cost norm at present is Rs 4000 per hectare (ha). The programme is underway in 25 states of the country.

National Watershed Development Programme for Rain-fed Areas (NWDPRA)

Watershed development projects have been taken up under different programmes launched by the GoI from time to time. The DPAP and the DDP adopted the watershed approach in 1987. The IWDP taken up by the NWDB in 1989 also used watershed as a planning and implementation unit. In July 1986, the then Union Ministry of Agriculture and Rural Development launched the NWDPRA as a centrally sponsored scheme, which is now under the administrative control of the Ministry of Agriculture. The NWDPRA combines the features of the DPAP, DDP and IWDP, with the additional dimension of improving arable lands through better crop management technologies.

The criteria for selection of districts are: (a) the annual rainfall should be 500–1,125 mm and (b) the irrigated area should be less than 30 per cent of the cultivated area. The project had been taken up on a watershed basis. The main objective of the project was to optimally utilise the available rainwater and minimise the risk of crop failure. The project was financed by the GoI to the extent of 100 per cent. It was a major thrust programme of Department of Agriculture and Cooperation in the Ninth Five Year Plan.

While the focus of every land resource development programme has differed, the common theme amongst these programmes has been their basic objective of land and water resource management for sustainable production. As stated earlier, the Hanumantha Rao Technical Committee studied the implementation and impact of the DPAP, DDP and IWDP programmes all over the country, and recommended that a common set of operational guidelines, objectives, strategies and expenditure norms for watershed development projects should be evolved, integrating the features of the three programmes under the Ministry of Rural Development. Accordingly a common set of guidelines was formulated by the Ministry of Rural Development in October 1994.² These guidelines were revised in 2001 by the Department of Land Resources, Ministry of Rural Development, based on the experience with the implementation of the earlier guidelines issued in 1994.³ The Department of Agriculture and Cooperation has also issued guidelines for the implementation of the NWDPRA.⁴

A National Rain-fed Area Authority (NRAA) has been set up to provide focussed attention to the problems of rain-fed areas in India. Its mandate is wider than mere water conservation and will cover all aspects of sustainable and holistic development of rain-fed areas, including appropriate farming and livelihood system approaches. The authority has a two-tier structure comprising: (a) a governing body chaired by the Minister of Agriculture; and (b) an executive committee having a Chief Executive Officer (CEO) and five technical experts.

The NWDPR is being implemented in 28 states and two UTs. During 2006–07 (up to December 2006), an area of 2.34 lakh ha had been treated and developed at a cost of Rs 94.20 crore. In addition, 38,971 water harvesting structures and 38,204 run-off management structures had been completed during the year 2006–07. Further, 29,995 Self Help Groups (SHGs) and 42,425 Users Groups (UGs) had also been formed and operationalised by the end of December 2006.

The Department of Agriculture and Cooperation and National Bank for Agricultural and Rural Development (NABARD) have jointly set up a Watershed Development Fund (WDF) at NABARD by contributing equally to create a corpus of Rs 20,000 crore for the purpose.

Joint Forest Management (JFM) and National Afforestation Programme (NAP)

It was the National Commission on Agriculture (NCA) 1976, which recommended for the first time in India the plantation of trees on degraded forest and non-forest lands to enhance the forest cover in the country. Subsequently, the GoI launched a social forestry programmes including farm forestry on a large scale during the 1970s and 1980s to rope in people in the afforestation programmes on private as well as community lands. The National Forest Policy (NFP) of 1988 emphasised the role of people's participation in forest protection and management. The Ararbari experiment in West Bengal in involving local people in the protection and management of degraded forests gave rise to a new concept called the JFM, which means co-management of forests by the local people and the forest department, mediated in most cases by a local non-governmental organisation (NGO).⁵ As a follow-up to the NFP of 1988 and based on the experience with the Ararbari experiment, the GoI has issued orders and guidelines on the JFM from time to time. The first policy directive was a JFM circular issued on 1 June 1990 by the Ministry of Environment and Forests, GoI for the involvement of village communities and voluntary agencies in regeneration of degraded forests. Subsequently, the state governments also passed their own resolutions on JFM.

The Ministry of Environment and Forests had issued fresh operational guidelines for the formulation of a new programme called the NAP for the Tenth Five Year Plan (2002–07). These guidelines seek to encourage a participatory approach to development of forests for the GoI-sponsored afforestation schemes. Afforestation schemes operational during the Ninth Five Year Plan have been merged in the new NAP, so as to 'avoid multiplicity of schemes with similar objectives' and to ensure 'uniformity in funding pattern and implementation mechanism.'

These guidelines stipulate that all the new centrally sponsored afforestation schemes will be implemented by a two-tier setup consisting of Forest Development Agencies (FDAs) at the forest division level, and Joint Forest Management Committees (JFMCs) at the village level, to allow for greater participation of the community in planning and implementation. The FDA is a new institutional setup, which will be a registered society under the Societies Registration Act 1860, constituted at the territorial wildlife

forest division level. Other than JFM committees, already existing village institutions with different nomenclatures will be the implementing agencies at the grassroots level. The FDAs will work in tandem with JFM Committees by signing a Memorandum of Understanding (MoU). On one hand, the FDAs will strengthen the existing JFM committees and on the other, they will create new JFM Committees. To be concise, the purpose of the NAP is to make JFM a 'central integral part' of all the afforestation projects in the country.

There are now over 64,000 forest protection committees/JFMCs in India spread over 27 states and managing about 14 mha of degraded forests. This means that 22 per cent of the total forest cover of 63.73 mha in India is being managed under the JFM. Besides, there are also a large number of self-initiated forest protection groups (SIFPGs) managing forests in India on the principle of participatory forest management. Thousands of SIFPGs, established by village communities with strong economic dependence on forests and where often a tradition of community resource management is still surviving, are protecting large areas of forests in the states of Orissa, Bihar, Gujarat, Rajasthan, Karnataka, Madhya Pradesh and Andhra Pradesh.

Million Wells Scheme (MWS)

The MWS was launched as a sub-scheme of National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) during the year 1988–89. After the merger of NREP and RLEGP into Jawahar Rozgar Yojana (JRY) in April 1989, the Scheme continued as a sub-scheme of JRY until 31 December 1995. With effect from 1 January 1996, it is being implemented as an independent scheme. The scheme is primarily intended to provide open irrigation wells—free of cost—to individual poor small and marginal farmers belonging to the Scheduled Caste/Scheduled Tribe (SC/ST) category and freed bonded labourers. Where wells are not feasible due to geological factors, other minor irrigation works can be undertaken, such as irrigation tanks and water harvesting structures, as also development of land belonging to small and marginal farmers. From the year 1993–94, the target group was expanded to include the non-SC/ST poor, small and marginal farmers also. The beneficiaries themselves are required to undertake the construction of their wells through their own labour and local labour, for which they are paid. Use of contractors is banned. Wage to material ratio of 60:40 is required to be maintained. Supplementary material cost, if any, can be met from other private/public sources. Lifting devices are not provided under the scheme. However, beneficiaries intending to install a lifting device are given preference under IRDP for obtaining assistance.

The scheme is funded by the centre and states in the ratio of 80:20. For union territories, 100 per cent of the funds are provided by the centre. Funds are allocated to states/UTs on the basis of the proportion of rural poor in the state/UT to total rural poor in the country.

Watershed Development Project for Shifting Cultivation Area (WDPSCA)

Shifting cultivation (*jhum* cultivation) regarded as the first step in the transition from food gathering and hunting to food production, is a primitive practice of cultivation. In the days when this system of food production emerged, it worked well and there was a balance between fallow cycles of 20 years to 30 years. With increasing population pressure the *jhum* cycle has slowly reduced to three years to six years. This has engendered the problem of degradation of land and ecology.

As per the report of the Task Force on Development of Shifting Cultivation Areas, constituted by Ministry of Agriculture in 1983, the total area affected by *jhum* is 43.57 lakh ha, spread over the states of Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa and Tripura.

The programme of Control of Shifting Cultivation (CSS) was taken up during the Fifth Five Year Plan as a pilot project with 100 per cent financial assistance from the central government, and was implemented through the Ministry of Agriculture. The scheme was launched during the year 1976–77 covering all the north-eastern states along with the states of Andhra Pradesh and Orissa. After operating for two years, the scheme was transferred to the state sector with effect from 1 April 1979 as per the decision of National Development Council (NDC). However, the scheme was continued in the then Union Territories of Arunachal Pradesh and Mizoram until 1982–83.

During the Seventh Five Year Plan, in pursuance of the recommendation of the Task Force on Shifting Cultivation (1983), the scheme for control of shifting cultivation was implemented with 100 per cent central assistance to the state plan programme from 1987–88 to 1990–91, in the nine states covering seven north-eastern states, Andhra Pradesh and Orissa. Consequent upon the decision of the NDC, the scheme was again transferred to state sector and was discontinued with effect from 1991–92. During the Seventh Five Year Plan also, the scheme was implemented through the Ministry of Agriculture on the basis of family development approach and 26,512 *jhumia* families were benefited under the programme with an expenditure of Rs 60.72 crores. Yielding to a pressing demand from the north-eastern states, the Planning Commission agreed for the revival of the scheme for north-eastern region only as an additional central assistance to state plan scheme from 1994–95 onwards. Accordingly, the scheme is being continuing in seven north-eastern states, namely, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura, on watershed basis with 100 per cent additional assistance to the state plan in the name of WDPSCA.

The main objectives of the programme are:

1. to protect the hill slopes of *jhum* areas through soil and water conservation measures on watershed basis and to reduce further land degradation;
2. to encourage relocation of *jhumia* families by providing developed productive land and improved cultivation packages;
3. to improve the socio-economic status of *jhumia* families through household/land based activities; and
4. to mitigate the ill effects of shifting cultivation by introducing appropriate land use patterns as per land capability and improved technologies available.

The main components of the scheme include community organisation and training programme, natural resource management and rehabilitation of *jhumia* families through household/land based production system.

Tribal Area Development Programme (TADP)/Tribal Sub Plan (TSP)

In the Fifth Five Year Plan, for the first time, a strategy of earmarking funds for development of ST was evolved. Because of the concentration of ST population in specific areas, the instrument of the TSP was developed to ensure the flow of benefits from all sectoral programmes and to provide integrated delivery of services in the tribal areas. In the guidelines issued to the state governments, the modalities of quantifying funds from identifiable programmes, and tailoring them to the needs of the tribal people and areas—where necessary—were stipulated. Accordingly, separate sub-plans were formulated covering 63 per cent of the tribal population in the country in 16 states and two Union Territories. The TSP areas were divided into 180 Integrated Tribal Development Projects (ITDP) for operational purposes.

A high priority was accorded to protective measures and the elimination of exploitation. The exploitation in tribal areas occurs in such activities as liquor vending, land alienation, moneylending and collection of forest produce. The states have enacted laws/regulations to prohibit transfer of land from tribals to non-tribals. In recent years, state governments have also reviewed the laws and taken appropriate measures to plug the loopholes.

The broad objectives of the TSP are:

1. to narrow the gap between the levels of development of tribal and other areas; and
2. to improve the quality of life of the tribals by freeing them from exploitation in the spheres of land alienation, indebtedness, bonded labour and malpractices in exchange of agricultural and forest produce.

Excise and forest policies have been reviewed and suitable measures taken to end the exploitation in tribal areas. In development programmes, priority was given to agriculture and allied sectors, irrigation facilities, and forest-based and other industries. Infrastructure like roads and rural electrification was linked with the economic programmes. Agricultural programmes were so oriented as to provide increased income to cultivators. Efforts were made to induce a change in traditional agricultural methods.

Programmes for imparting training in agro- and forest-based industries were taken up, so as to create opportunities of gainful employment. In many states, tribal development corporations were established to play a key role in bringing about a new relationship between the tribal and the market economy through an integrated credit-cum-marketing service. The most backward groups among the tribal communities, many of them at a pre-agricultural stage of the economy, were identified, and special programmes were taken up for their development. The administrative structure in tribal areas was reviewed and restructured, so as to provide effective services to the tribal people. The areas under

the Fifth Schedule have been rationalised, so as to provide more effective protection to the tribals and for better implementation of plans.

The programmes under the TSP are supported by sectoral outlays in the state plans, central programmes and institutional finance available for different programmes. A scheme of Special Central Assistance (SCA) was introduced during the Sixth Five Year Plan. Under the scheme, financial assistance in the form of outright grants is given by the GoI to the state governments implementing the TSP, over and above the funds allocated to the state government in the state TSP. The SCA forms part of TSP strategy for achieving the larger goal of enhancing the pace of socio-economic development in most backward tribal areas. The scheme is primarily meant to support family-oriented income-generating activities and infrastructure incidentals (not exceeding 30 per cent of the total outlay) required thereof. The scheme covers 23 TSP states and Union Territories, including north-eastern states of Assam, Manipur and Tripura.

NATIONAL AGRICULTURE INSURANCE SCHEME (NAIS)

Climatic variability caused by erratic rainfall pattern, increase in the severity of droughts, floods and cyclones, and rising temperatures, have been the causes of uncertainty and risk, resulting in huge losses in the agricultural production and the livestock population in India. The NAIS for crops has been implemented since the 1999–2000 *rabi* season with the objective of providing insurance coverage in the event of failure of any of the notified crops as a result of natural calamities, pests and diseases. The scheme is available to all the farmers (both loanees and non-loanees), irrespective of their size of holding and operates on the basis of 'area approach'. It envisages the coverage of all food crops (cereals, millets and pulses), oilseeds and other commercial/horticultural crops, in respect of which past yield data are available for an adequate number of years. At present, 10 per cent subsidy in premium is available to small and marginal farmers, which is to be shared equally by the centre and state governments.

The scheme is implemented by 23 states and two Union Territories. Since the inception of the scheme and until *rabi* 2006–07, about 971 lakh farmers had been covered. The area covered was 156 mha and the sum insured Rs 92,618 crore. Claims to the tune of about Rs 9,855 crore had become payable against the premium income of about Rs 2,943 crore, benefiting nearly 270 lakh farmers.

Despite high claims ratio (1:3.3) and low premium rates, particularly for food and oilseeds crops, farmers (particularly non-loanee farmers) are not coming forward to avail of crop insurance in a big way. To overcome some of the limitations and to make the scheme more farmer-friendly, a Joint Group was constituted to suggest improvements required in the existing crop insurance schemes. The Group made an in-depth study and has made important recommendations like reduction in the unit area of insurance to gram panchayat for major crops, improving the basis of calculation of threshold yield, higher indemnity level coverage of pre-sowing/planting risks and post-harvest losses, personal accident insurance cover, and so on. Based on the recommendations of the

Joint Group and views/comments of various stakeholders, the existing NAIS was to be modified by the GoI 2008–09.⁶

PILOT WEATHER-BASED CROP INSURANCE SCHEME (WBCIS)

As announced in the union budget for 2007–08, the WBCIS was implemented in the selected areas of Karnataka on a pilot basis. The WBCIS intends to provide insurance protection to farmers against adverse weather conditions, such as deficit and excess rainfall, which are deemed to adversely impact the crop production. It has the advantage of settling the claims within the shortest possible time.

The WBCIS is based on actuarial rates of premium but to make the scheme attractive, the premium actually charged from farmers has been restricted to 'at par' with the NAIS. The Agriculture Insurance Company of India Ltd. (AIC) has implemented the pilot WBCIS in Karnataka during *kharif* 2007 season, covering eight rain-fed crops, insuring crops on nearly 50,000 ha for a sum insured of Rs 50 crore. The WBCIS is being implemented in 2007–08 on a larger scale in selected areas of 12 states for *rabi* 2007–08 season. In addition to AIC, private insurers like ICICI-LOMBARD, General Insurance Company (GIC) and IFFCO-TOKIO General Insurance Company have also been included for selected areas.⁷

INFRASTRUCTURE DEVELOPMENT PROGRAMMES

A brief description of major programmes in this category follows.

Minimum Needs Programme (MNP)

The availability of certain public services, facilities and amenities represents 'real income' and constitutes part of the standard of living. It is particularly with respect to the community facilities and civic amenities that rural people are at a great disadvantage vis-à-vis their urban counterparts. Duly recognising the need for the provision of such facilities and services in rural area, the GoI developed and launched a scheme called the MNP in the Fifth Five Year Plan. The MNP initially included eight components. During the Sixth Five Year Plan, one more component—adult education—was added, and in the Seventh Five Year Plan, the list of items was further expanded with three more components, namely, rural domestic energy, rural sanitation and public distribution system (PDS). So now, there are 12 components of the MNP (Box 11.1).

The concept of the MNP emerged and crystallised out of the experience of the previous plans, which showed that neither growth nor social consumption can be sustained—much less accelerated—without being mutually supportive. The main objective of the

Box 11.1 Components of Minimum Needs Programme

1. Elementary Education
2. Adult Education
3. Rural Health
4. Rural Water Supply
5. Rural Roads
6. Rural Housing
7. Rural Electrification
8. Environmental Improvement of Urban Slums
9. Nutrition
10. Rural Domestic Cooking Energy
11. Rural Sanitation
12. Public Distribution System (PDS)

Source: Singh 1999: 197.

MNP was to provide the rural population, particularly the rural poor, with access to certain items of social consumption, which form an integral part of the basic needs. It was envisaged that certain national level norms would be fixed with respect to each of these items and that within the specified time frame, all areas in the country would achieve these national goals. The programme emphasises the urgency for providing social services according to the nationally accepted norms within a stipulated time frame. To optimise benefits, all the 12 components of the MNP are taken as a package, and related to specific areas and beneficiary groups. The programme is essentially an aid to human resource development. The provision of free or subsidised services through public agencies is expected to improve the consumption levels of those living below the poverty line, and thereby improve the productive efficiency of both the rural and urban workers. The integration of social consumption programmes with economic development programmes is necessary to accelerate growth and to ensure the achievement of plan objectives.

In the absence of such a programme, the pressure for investments in the development of infrastructure and production sectors left a relatively small allocation for social services. Even such outlays—as were available—were the first to get reduced in any conflict of priorities created by resource constraint. Further, the benefits of social services cannot reach the poorest without conscious efforts to that end. Disparities in social consumption are found not only between income groups, but also between areas. The level of development of the various social services and infrastructure varies widely from state to state.

A review of the programme revealed that in most cases, the physical and financial targets had been achieved satisfactorily. However, the quantitative achievements do not mean much in themselves. For example, the performance of the elementary education programmes should be judged in terms of literacy rates and retention ratios, rather than in terms of the number of children enrolled. Similarly, the performance of rural health schemes should be judged in terms of the decline in the death rate, infant mortality rate and birth rate, and not in terms of number of primary health centres and sub-centres. The

review also pointed to significant inter-state variations with respect to the initial levels of each of these components and, in view of this, highlighted the need for giving higher attention to the states lagging behind, in order that they achieve the national norms. Besides, the need for integration of the MNP with other ongoing rural development programmes at the district level was also emphasised.

Twenty Point Programme (TPP)

The TPP was announced in 1975. It was first restructured in 1982. Subsequently, second restructuring was done in 1986. TPP-86 is presently in operation. The basic objective of the programme is to improve the quality of life of the poor and the underprivileged population of the country. The programme covers various socio-economic aspects like poverty, employment, education, housing, health, agriculture and land reforms, irrigation, drinking water, protection and empowerment of weaker sections, consumer protection, environment, responsive administration, and so on. The TPP consists of 119 items, out of which 65 items are monitored against physical targets and 54 items are monitored on evaluatory basis.

The Twenty Points

The following are the twenty components of the TPP:

1. Attack on rural poverty
2. Strategy for rain-fed agriculture
3. Better use of irrigation water
4. Bigger harvest
5. Enforcement of land reforms
6. Special programmes for rural labour
7. Clean drinking water
8. Health for all
9. Two child norm
10. Expansion of education
11. Justice to SCs and STs
12. Equality for women
13. New opportunities for youth
14. Housing for the people
15. Improvement of slums
16. New strategy for forestry
17. Protection of the environment
18. Concern for the consumer
19. Energy for the villages
20. A responsive administration

Implementation of TPP

There is three-tier monitoring mechanism for the implementation of TPP. At the district level, the Programme is monitored by District Planning Board (DPB), panchayati raj institutions (PRIs) and other agencies. At the state level, the Programme is monitored by different line departments and also by the state level Monitoring Committee. At the central level, the Programme is monitored by the central administrative ministries/departments concerned with their respective schemes/programmes. The Ministry of Statistics and Programme Implementation monitors the Programme in its entirety.

Monitoring of TPP

The monitoring of TPP is done through the following monitoring reports:

1. *A Monthly Progress Report*: This covers physical achievements against the set targets for 20 crucial items. The information for it is supplied by states/UTs.
2. *A Capsule Report*: This is based on the Monthly Progress Report and highlights the main achievement.
3. *A Half Yearly Progress Report*: This covers all the 119 items of the TPP. The information is supplied by central nodal ministries/departments.

Restructuring of TPP

The TPP, in its present form, was last restructured in 1986. The need for further restructuring of TPP-86 was felt due to launching of several new schemes/programmes by the central government on the basis of new initiatives, while some others are in the nature of replacement/modification of earlier schemes. Also, some of the existing programmes are required to be deleted, as they have lost their relevance in the present scenario or achieved the desired objectives. An exercise for restructuring of TPP is in progress in consultation with central nodal ministries and the state/UT administration.

Rural Infrastructure Development Fund (RIDF)

The setting up of the RIDF by the GoI in 1995–96, under the aegis of NABARD was a landmark in the government's effort to improve the basic infrastructure in rural areas through increased availability of funds for the purpose. The RIDF was set up with an initial corpus of Rs 2,000 crore, primarily to provide financial assistance to state governments for speedy completion of infrastructure projects such as major, medium and minor irrigation projects, rural roads, bridges, market yards, drainage structures, primary health centres, primary schools and rural drinking water supply projects, which could

not be completed due to the paucity of funds. With the initial corpus of Rs 2,000 crore under RIDF-I in 1995–96, the cumulative accretion to the Fund had reached the level of Rs 60,000 crore under RIDF-XII in 2006–07. The Fund lends to the state government every year in tranches at an interest rate, which is 0.50 per cent higher than the prevailing bank rate. Rural roads and irrigation projects have claimed the highest share in the Fund, accounting for about 40 per cent and 39 per cent of the corpus, respectively. NABARD conducts evaluation studies on a regular basis to assess the socio-economic impacts of the investment made using the RIDF funds. By and large, the RIDF-funded projects, especially irrigation and rural roads projects, had several tangible and intangible positive impacts (Satish 2007: 41–45).

National Common Minimum Programme (NCMP)

In May 2004, the United Progressive Alliance (UPA) formed the government in New Delhi. The UPA adopted the NCMP to implement its promises to the people. Some of the major components of the NCMP relevant to the rural sector are as follows.

Rural Infrastructure

Bharat Nirman is a four-year programme (2005–09) for achieving identified goals in six selected areas of rural infrastructure: irrigation, drinking water, housing, roads, telephony and electrification. In four of these areas, the aim is to have universal coverage, where every village will have telephony and electricity, and every habitation will have access to safe drinking water, and for a population of at least 1,000—500 in hilly/tribal areas—access to all-weather roads.

In addition, it proposes to build 60 lakh houses and add one crore ha of irrigation capacity. The estimated investment over the period of four years is over Rs 1,74,000 crore. Internal and extra-budgetary resources will also contribute to investment under the programme.

Irrigation

One crore hectares of land will be brought under assured irrigation through the completion of ongoing major and medium irrigation projects (42 lakh ha), minor irrigation schemes (28 lakh ha), enhanced utilisation of completed projects (20 lakh ha) and ground water development in areas with unutilised ground water potential (10 lakh ha). The annual outlay for 2006–07 was Rs 7,121 crore, which represents nearly trebling of the outlay from the level of three years ago. In the first year of its implementation, 2005–06, it is estimated that around 6 lakh ha of irrigation potential had been created through completion of ongoing major and medium irrigation projects. Completion of another 17 projects with irrigation potential of 3.2 lakh ha was targeted for 2006–07.

Drinking Water Supply in Rural Areas

Rural water supply is a state subject. However, recognising the importance of providing safe drinking water in rural habitations, the GoI has been providing assistance to state governments. The government had set the goal to provide safe drinking water in all rural habitations by 2004. To achieve this objective, many programmes like Accelerated Rural Water Supply Programme (ARWSP) and Prime Minister's Gramodaya Yojana-Rural Drinking Water (PMGY-RDW) had been implemented. These programmes were intended to help resolve drinking water crisis in rural areas. These programmes also emphasised the need for rainwater harvesting, sustainability of resources and community participation.

As regards the implementation of the ARWSP, the state governments decide the implementing agencies for the programme. The agencies may be the Public Health and Engineering Department or the Panchayati Raj Department. While providing drinking water under the programme, following points, *inter alia*, are taken into consideration:

1. 40 litre per capita per day (lpcd) for drinking water for human beings.
2. 30 lpcd of additional water for cattle in areas under the DDP.
3. One hand pump or stand post for every 250 persons.
4. Availability of water source in the habitation or within 1.6 km in the plains and 100 m elevation in hilly areas.

The goal of the drinking water supply scheme is to ensure the provision of access to safe drinking water to

1. estimated 55,000 habitations in India which are without any safe source of drinking water;
2. estimated 2.8 lakh habitations that have slipped back from full coverage and
3. estimated 2.17 lakh habitations that have problems of water quality.

The total outlay for the first two years of Bharat Nirman for this exceeds Rs 9,000 crore. Some 7,596 uncovered habitations were provided drinking water and 46,106 'slipped back' habitations were covered again in 2005–06. The allocation of funds for the Rajiv Gandhi National Drinking Water Mission (RGNDWM) has been increased from Rs 4,680 crore in 2006–07 to Rs 5,850 crore in 2007–08. The targets for 2006–07 included the coverage of the remaining 1,120 non-covered habitations, 17,000 partially covered habitations, 40,000 'slipped back' habitations and 15,000 water quality affected habitations.

Rural Housing

The budget outlay for rural housing under Indira Awaas Yojana (IAY) has been enhanced steadily from Rs 1,900 crore in 2003–04 to Rs 2,920 crore in 2006–07. Since the inception of the scheme in 1985–86 till 30 January 2006, about 138 lakh houses had been constructed and upgraded with the total expenditure of Rs 25,208 crore.

Rural Telephony

Some 66,822 villages without telephones were targeted to be covered by September 2007. More than 50 million rural connections will be rolled out in three years and, thereafter, a connection will be available on demand. About 24,687 villages were provided telephones in 2005–06.

Rural Electrification

Over 1,00,000 villages in India do not have electricity. To remedy this situation, the government had initiated Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) in April 2005. The total resource outlay for the first two years of Bharat Nirman for this was Rs 5,000 crore. Bharat Nirman will not only reach electricity to the remaining villages, but will also offer electricity connections to an estimated 2.3 crore households. Further, at least one 33/11 KV sub-station will be set up in each block and at least one distribution transformer in each habitation. Approximately 6,580 villages were electrified in 2005–06, while projects were sanctioned for covering 51,284 villages and 69 lakh rural households.

All these programmes complement and supplement the existing programmes through increased allocation of funds and time-bound implementation. Their progress is closely monitored and remedial measures taken promptly to rectify the drawbacks. Now the GoI has realised the need for involving the private sector in creating new—and improving the existing—infrastructure and is encouraging public private partnership (PPP) for the purpose. The PPP offers several advantages, such as cost saving, access to specialised expertise, proprietary technology, professional management and sharing of risks.

Indira Awaas Yojana (IAY)

There is a direct correlation between poverty and housing. The poor person either does not have a house or lives in an unserviceable *kutcha* house. According to the 1991 census, around 3.1 million households were without shelter and another 10.31 million households resided in unserviceable *kutcha* houses. A housing programme for the rehabilitation of refugees was taken up immediately after the partition of the country. Nearly five lakh families were provided houses under the programme that lasted until the year 1960. A Village Housing Scheme (VHS) was also launched as part of the Community Development Programme (CDP) in 1957. However, only 67,000 houses had been built under the scheme by the end of the Fifth Five Year Plan. In June 1985, the Union Finance Minister made an announcement in the Parliament earmarking a portion of the RLEGP funds for the construction of houses for SC/ST people and freed bonded labour. The IAY was a result of that announcement. The IAY became part of JRY when it came into being after the merger of NREP and RLEGP in April 1989. Considering the magnitude of the problem, the central government announced in 1998 a National Housing and Habitat Policy (NHHP),

which aims at providing 'Housing for all'. The government had set the goal of ending all shelterlessness by the end of the Tenth Five Year Plan.

Until 1992–93, the scheme provided dwelling units free of cost to SC/ST persons and freed bonded labourers living below the poverty line in rural areas. In 1993–94, the scope of the scheme was broadened to cover non-SC/ST rural poor, subject to the condition that the benefits to non-SC/ST should not exceed 40 per cent of the total allocation. In 1995–96, families of servicemen of the armed and paramilitary forces killed in action were also brought under its fold, subject to their fulfilling certain conditions.

The cost norms under IAY have been changed from time to time. With effect from 1 August 1996, the ceiling of assistance for house construction under IAY is Rs 20,000 per unit in the plains, and Rs 22,000 per unit in hilly and other difficult areas. The construction of the house is the responsibly of the beneficiary. The IAY house is not to be constructed and delivered by any external agency, such as government departments, NGOs, and so on.

Funds under the scheme allocated to the states/UTs are further distributed to the districts in proportion to the SC/ST population in the district. A minimum of 60 per cent of the funds are allocated for construction of houses for the SC/ST living below the poverty line in rural areas. The IAY funds are operated by the District Rural Development Agencies (DRDAs)/Zila Parishads at the district level. The scheme is funded on a cost sharing basis of 75:25 between the centre and the states. During the financial year, 2007–08, Rs 4,032.70 crore were earmarked for release to DRDAs under IAY for construction of 21.27 lakh houses. As per the information received from the state governments, 9.39 lakh houses had been constructed up to November 2007 (GoI 2008).⁸

Pradhan Mantri Gram Sadak Yojana (PMGSY)

Rural road connectivity is not only a key component of rural development by promoting access to economic and social services, and thereby, generating increased agricultural incomes and productive employment opportunities in India, but it is also a key ingredient in ensuring sustainable poverty reduction. Notwithstanding the efforts made over the years at the state and central levels through different programmes, about 40 per cent of the habitations in the country are still not connected by all-weather roads. It is well known that even where connectivity has been provided, the roads constructed are of such a poor quality that they cannot be categorised as all-weather roads.

With a view to redressing the situation, the government had launched the PMGSY on 25 December 2000 to provide all-weather access to connected habitations. The PMGSY is a 100 per cent centrally sponsored scheme. It is funded by earmarking 50 per cent of the cess on High Speed Diesel (HSD). About 1.58 lakh unconnected habitations need to be taken up under the PMGSY. In order to achieve the objectives of the programme, a requirement of Rs 60,000 crore has been estimated.

The primary objective of the PMGSY is to provide connectivity by way of all-weather roads, along with necessary culverts and cross-drainage structures, which is functional

throughout the year. It was proposed to cover all the eligible unconnected habitations in the rural areas with a population of 1,000 persons and above in three years (2000–03), and all unconnected habitations with a population of 500 persons and above by the end of the Tenth Five Year Plan (2007). In respect of the hill states (Northeast, Sikkim, Himachal Pradesh, Jammu and Kashmir, and Uttaranchal) and the desert areas (as identified in the DDP), as well as the tribal (Schedule V) areas, the objective is to connect habitations with a population of 250 persons and above.

The upgradation (to prescribed standards) of the existing roads in those districts where all the eligible habitations of the designated population size have been provided all-weather road connectivity is also permissible under the programme. However, the cost of upgradation cannot exceed 20 per cent of the state's allocation as long as eligible unconnected habitations in the state still exist.

The PMGSY covers only the rural areas. Urban roads are excluded from the purview of this programme. Even in the rural areas, the PMGSY covers only the rural roads, that is, roads that were formerly classified as 'Other District Roads' (ODR) and 'Village Roads' (VR).

Each state government (including UT administrations) is responsible for identifying one or two suitable agencies (having a presence in all the districts and with established competence in executing time-bound road construction works), to be designated as the Executing Agencies. These could be the Public Works Department (PWD), Rural Engineering Service Organisation (RESO), Rural Works Department (RWD), Zila Parishad or Panchayati Raj Engineering Department (PRED), which have been in existence for a sufficiently long time and have the necessary experience, expertise and manpower.

The Administrative Department of the state government responsible for the Executing Agency entrusted with the execution of the road works will be the nodal department. In the event of there being more than one Executing Agency under different administrative departments the state government would nominate that department as the nodal department which is officially responsible for the management and maintenance of rural roads.

Each state government has set up a state-level Standing Committee (headed by the Chief Secretary or Additional Chief Secretary), including all the main stakeholders of the programme, such as Secretaries of the Departments of Rural Development, Panchayats, PWD, Forests, Finance, Revenue and Transport. The State Technical Agencies and State Informatics Officer are also to be invited to participate.

At the central level, the project proposals received from the state governments are considered by an Empowered Committee, chaired by the Secretary, Department of Rural Development. The representatives of the state government, whose proposals are under consideration by the Empowered Committee, may be invited to attend the meetings, as and when required. The recommendations of the Empowered Committee are, thereafter, submitted to the Minister of Rural Development and in case the proposals meet the programme requirements, they are cleared.

At the district level, the programme is coordinated and implemented through a dedicated Programme Implementation Unit (PIU). All PIUs are to be manned by competent technical personnel from amongst the available staff or through deputationists.

In exceptional cases and with the prior approval of National Rural Roads Development Agency (NRRDA), consultants may be engaged to build up or enhance capacity. NRRDA's model documents shall be used for the purpose.

The Ministry of Rural Development has set up the NRRDA to provide operational and management support to the programme. The state governments are responsible for ensuring effective monitoring of the programme. An Online Management and Monitoring System (OMMS) is the main mechanism for monitoring the programme. The state government is required to provide necessary manpower, space and facilities to set up the computer hardware at the district and state level.

The PMGSY is a huge central investment in the state sector as part of a poverty reduction strategy. This investment in essentially the 'last mile' connectivity is likely to be useful only if the main rural road network—particularly the rural core network—is maintained in good condition. In the context of a farm-to-market connectivity, proper maintenance is essential if risks of long term investments—on-farm as well as off-farm—are to be taken by the rural entrepreneur. Accordingly, the putting in place of institutional measures to ensure systematic maintenance and providing adequate funding for maintenance of the rural core network, particularly the 'Through Routes', will be a key to the continuance of the PMGSY programme in the state. To this end, state governments will take steps to build up capacity in the district panchayats, and shall endeavour to devolve the funds and functionaries onto these panchayats in order to be able to manage maintenance contracts for rural roads.

Under the Bharat Nirman programme of the UPA government, it is proposed to connect, over the period 2005–09, approximately 66,802 habitations to a road through construction of 1.46 lakh km of roads and upgrading of 1.94 lakh km of existing roads at an investment of approximately Rs 48,000 crore. Another 4,068 habitations had been connected under Bharat Nirman in 2005–06. The allocation of Rs 5,225 crore and a separate window under the RIDF-XII of Rs 4,000 crore for 2006–07 under PMGSY constitute the resources earmarked for rural roads. This is nearly four times the allocation of Rs 2,325 crore only three years ago. As of December 2007, about 1,42,750 km long road works had been completed with the cumulative expenditure of Rs 27,382.24 crore (GoI 2008).⁹

MAIN POINTS

1. Natural resources and infrastructure constitute the production base of India's economy and play an important role in the process of development. The rural areas of India are at a great disadvantage vis-à-vis the urban areas in terms of provision of basic infrastructure.
2. As the backward areas in India are very poor in natural resources endowment as well the basic infrastructure, corrective measures in the form of several area-specific natural resources-based and infrastructure development programmes were launched in those areas from time to time.

3. The major natural resources development programmes launched in economically backward and environmentally fragile areas include the Drought-Prone Area Programme (DPAP), the Desert Development Programme (DDP), the Integrated Wasteland Development Programme (IWDP), the National Afforestation Programme (NAP), the Million Wells Scheme (MWS), the Watershed Development Project for Shifting Cultivation Area (WDPSCA) and the Tribal Area Development Programme (TADP).
4. To protect the farmers against the adverse effects of climatic aberrations, such as drought and floods, two schemes, namely, National Agriculture Insurance Scheme (NAIS) and the pilot scheme for Weather-based Crop Insurance Scheme (WBCIS) have been launched. The NAIS is being implemented by 23 states and two Union Territories. The WBCIS was initially implemented on a pilot basis in the state of Karnataka and now is being implemented in selected areas of 12 states beginning *rabi* 2007–08 season.
5. The major infrastructure development programmes launched include the Minimum Needs Programme (MNP), the Twenty Point Programme (TPP), the National Common Minimum Programme (NCMP), the Indira Awas Yojana (IAY) and the Pradhan Mantri Gram Sadak Yojana (PMGSY). The creation of the Rural Infrastructure Development Fund (RIDF) under the National Bank for Agricultural and Rural Development (NABARD) was a major landmark in the government's effort to improve the rural infrastructure.
6. There are no rigorous evaluation studies of the impact and effectiveness of most of natural resources and infrastructure development programmes available. However, a Technical Committee on DPAP and DDP under the chairmanship of C. H. Hanumantha Rao reviewed those programmes. The Committee found the performance of the programmes poor. The main reasons identified by the Committee for the poor performance included the failure of the implementing agencies to adopt the watershed approach, lack of people's participation in planning and implementation of the programme, inadequacy of funds and non-availability of trained personnel.
7. The NCMP has several components including rural infrastructure (Bharat Nirman), irrigation, supply of drinking water in rural areas, rural telephony, rural housing and rural electrification. These programmes complement and supplement the existing programmes through increased allocation of funds and time-bound implementation.

NOTES

1. Infrastructure is an umbrella term that subsumes many activities referred to as Social Overhead Capital (SOC) by development economists.
2. http://www.virtualcentre.org/watershed/docs/Mord_guidelines_1995.pdf. Accessed in March 2008.
3. http://www.virtualcentre.org/watershed/docs/Revised_Guidelines_2001.pdf. Accessed in March 2008.
4. <http://agricoop.nic.in/guideline.htm>. Accessed in March 2008.

5. For details of the Arabari experiment, see Singh (1994: 274–81).
6. <http://indiabudget.nic.in/es2007-08>. Accessed in March 2008.
7. <http://indiabudget.nic.in/es2007-08>. Accessed in March 2008.
8. <http://indiabudget.nic.in>. Accessed in March 2008.
9. <http://indiabudget.nic.in>. Accessed in March 2008.

QUESTIONS FOR DISCUSSION

- 11.1. Illustrate with an example the role of natural resources, especially, land, water and forests, in the process of rural development.
- 11.2. Illustrate with an example the role of electricity and rural roads in the process of rural development.
- 11.3. Discuss how good rural infrastructure can reduce the incidence of poverty (Hint: see the paper by P. Satish, referred to in this chapter.)
- 11.4. Write a critique of the Drought-Prone Area Programme (DPAP) and Desert Development Programme (DDP).
- 11.5. The Government of India had launched a scheme called the Minimum Needs Programme (MNP) in the Fifth Five Year Plan, Twenty Point Programme (TPP) in 1975 and set up the Rural Infrastructure Development Fund (RIDF) in 1995–96. The MNP had 12 components of infrastructure and the RIDF lends funds for infrastructure development. Write a critique of these programmes.
- 11.6. What was the rationale for launching the National Common Minimum Programme (NCMP) by the United Progressive Alliance (UPA) government in 2004?
- 11.7. Write a critique of the public-private partnership (PPP) approach to infrastructure development.

12 Planning for Rural Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define the terms 'plan' and 'planning', and explain their rationale;
- enumerate the functions of planning at the micro, meso and macro levels;
- explain why decentralisation of planning in countries like India is necessary;
- list the major steps in micro-level planning with special reference to agriculture;
- describe the methodology for block- and district-level planning followed in India and
- list the major components of an ideal development project.

INTRODUCTION

A plan is a blueprint for action. It points out a precise way to reach a predetermined goal, or a set of goals, within a predetermined period of time with the means that are available with the planner and under the prevailing circumstances. Planning is the process of formulating a plan. Development planning as a process involves the application of a rational system of choices among the feasible courses of investment and other development possibilities, based on a consideration of economic and social costs and benefits. In the context of a quantitative planning model, planning may be defined

as a process of determining an optimal mix of alternative investment activities, so as to maximise the objective function under the given constraints. Howsoever we define planning, it implies an organised, conscious and continued effort to achieve specific goals in the future.

In every country, some development always occurs naturally (autonomous development), but it may not be sufficient to maintain a socially desirable level of living in the country. Therefore, some sort of government intervention in the economic system is needed in almost every country to initiate and foster a higher rate of development (induced development). These days, governments in virtually all the countries are engaged in one way or another, and to a small or large extent, in planning and regulating their economic activities. However, planning makes a positive contribution only if, through it, the objectives are achieved more rapidly and more efficiently than if development followed natural forces. Planning can contribute to development mainly through direct provision and allocation of scarce resources by the government, regulation and direction of resource allocation decisions in the private sector, coordination of public and private actions, and guiding the use of private resources through the manipulation of market forces.

LEVELS AND FUNCTIONS OF PLANNING

Problems in planning can be identified, and consequently planning can be carried out, at the national and state levels (macro level), at the level of the individual unit of production (micro level) and at the intermediate level (meso level). The planning function at the national and state levels consists mainly of defining the goals of development effort, projecting population growth, and demand and supply of important goods and services, estimating and mobilising the necessary domestic and foreign resources of money and skills, and allocating them to those specific uses among different sectors of the economy which seem likely to make the greatest contribution to achieving the national goals. Macro-planning is, of necessity, based on highly aggregated data and on considerations that are usually of broad significance. Planning at the district and block levels may be considered as meso-level (intermediate) planning. The main function of meso-level planning is to translate the macro-level plan into concrete and operational programmes and projects, taking into consideration the peculiar characteristics and requirements of the district/block concerned.

Micro-level planning refers to planning at the level of the basic unit of production, which may be a farm, a factory, a household enterprise, or any other production/service unit. Micro-planning is concerned with the what, how much, how, when and where questions relating to production, consumption, credit and marketing. In a nutshell, micro-level planning is concerned with the allocation of the resources of the planning entity concerned, to maximise whatever goals the entity may have.

In the context of rural development planning, micro-level planning has the following major roles to play:

1. Reveal the prospective needs of farmers (or any other rural producers) for production inputs and credit, so that a suitable supply scheme could be designed.
2. Determine the best alternatives for reorganisation of the rural business units, so as to utilise the public services and facilities completely.
3. Furnish basic information for the formulation and evaluation of rural development projects.
4. Aid in projecting the effects of changes in technology, prices, and public programmes and policies on rural production, income and employment.
5. Serve as an aid to the rural development extension worker in establishing an effective working relationship with rural producers, and in educating them in scientific methods of farming.

If micro-level planning is to play an effective role in the modernisation of India's rural economy, it must be treated as an integral part of development planning. Micro-planning, in and of itself, is not of much use in the formulation and implementation of national development plans and policies. Micro-plans should be vertically integrated with national plans via the regional/area planner. He is at an intermediate level between the micro- and macro-planning systems, and his job should be to blend them together, relying on his knowledge of the overall plan and his familiarity with the micro details of the region. It is his task to bring about a synthesis of macro- and micro-planning in such a way that what is desirable at the national/state level, will be made worthwhile and feasible for the individual producer and consumer.

Horizontal integration embraces inter-sectoral coordination between different sectors—agriculture, industry and services—within a specific spatial framework. Micro-plans should be horizontally integrated with the plans for supply of production inputs and credit, marketing, infrastructure development and industrial development for the area.

India's approach to development planning has been predominantly macro-oriented, emphasising national goals and priorities. The national planners really do not know whether their targets can, in effect, be achieved and what it takes to achieve them. And the planners at the sub-national levels do not know what the effect of their plans would be on the aggregate input requirements and aggregate output of the country as a whole. Thus, for successful and effective planning, it is necessary that the macro- and micro-plans are harmonised at some intermediate (region/area) level. In a nutshell, to make development planning effective, we must follow a two-pronged approach, working simultaneously and in a coordinated way from the grassroots level up, and the national level down.

The term 'area planning' is highly fashionable now-a-days, and is widely acclaimed in both advanced and developing countries. The term is used in many different ways and in vastly divergent contexts. We shall use the term to refer to planning for the overall development of a single area, usually an economically backward and ecologically fragile area, within the broad framework set by the national development planning. In essence, we imply, by this term, a multi-level and decentralised planning approach to the overall development of an economy.

Rural development is the end result of interactions between various technological, economic, social and institutional factors. For example, to increase total output from an individual farm, it is necessary to introduce new technology adapted to local ecological and socio-economic conditions, to educate and train the farmer in its use, to provide him with sufficient resources at the proper time and place, and to create the necessary infrastructure of service facilities for supply and marketing. Ultimately, however, it is the response of the individual producer to these measures that determines the success or failure of the development plan. The area approach to development planning, therefore, emphasises the role of the people, their potentialities and their motivations. Besides, this approach is integrative, in the sense that it assesses the significance of all the factors affecting the development process.

The area approach to development planning can contribute to the achievement of the following main objectives of national planning in India:

1. Accelerate the development of lagging areas.
2. Reduce inter-regional disparities in development and growth.
3. Provide the basic disaggregation of national planning with respect to agriculture and other sectors of the economy.
4. Facilitate coordination and integration of planning and implementation at various levels.
5. Coordinate agricultural and rural development with the overall area development plans.
6. Facilitate the wider involvement of people in the process of preparation and implementation of development projects.

DECENTRALISATION OF PLANNING

In view of different agro-climatic, techno-economic and socio-cultural factors occurring in different regions of India, national planning, to be realistic and effective, has to be decentralised to sub-national/sub-state levels. Decentralisation or regionalisation of planning and development is a logical step for a democracy. This is a movement which permits the wider involvement of people in the process of planning and implementation, and reduces the discrepancies between national and sub-national plans which arise from regional or area characteristics that differ from national assumptions.

The need for decentralisation was recognised in the Fourth Five Year Plan, and a modest beginning was made in the direction of extending planning to the state, regional and district levels. In September 1969, the Planning Commission issued detailed instructions to the state governments on how to formulate district plans. In the Fifth Five Year Plan, special emphasis was laid on the area/regional approach to development planning, particularly in the backward areas. In November 1977, the Planning Commission appointed a Working Group under the chairmanship of M. L. Dantwala to draw up guidelines for block level planning. The Group submitted its report in 1978, which emphasised the need for strengthening the planning team at the district level and for the integration of the

block plan with the district plan. In 1979, the Union Department of Rural Development prepared a brochure on the methodology for planning and implementation of the Integrated Rural Development Programme (IRDP).

There have also been quite a few attempts by state governments and other organisations to frame block level plans. Having taken cognisance of all these efforts, in December 1979, the Planning Commission issued 'Guidelines for Block Level Planning'. These guidelines cover only some broad and essential aspects of block level planning, and it was understood that the Union Ministry of Rural Development and the state governments would supplement and elaborate these guidelines further from time to time, as considered necessary.

In 1980, the Union Ministry of Rural Reconstruction prepared a 'Manual on Integrated Rural Development Programme', which includes, *inter alia*, procedures and formats for preparing household, village and block plans (Government of India [GoI] 1980). The block and district level plans for the IRDP were to be formulated as per the Planning Commission's 'Guidelines for Block Level Planning'. In April 1982, the Union Ministry of Rural Development issued 'Operational Guidelines for Block Level Plans for Integrated Rural Development Programme' in consultation with the Planning Commission, the state governments and other organisations involved in rural development. These guidelines are in the nature of a broad frame of reference, to enable those who are engaged in the implementation of IRDP, to draw up sound and locally appropriate programmes and action plans. The guidelines envisage preparation of a five-year development profile or a perspective plan, as well as an annual action plan for each block.

The block level perspective plans were to be aggregated at the district level, based on the practical possibilities of development in the primary, secondary and tertiary sectors. The Integrated Rural Development (IRD) block plan was to be integrated with the development programmes of other departments, and it was eventually to be a component of the comprehensive block development plan. A five-year credit plan and an annual credit plan were also to be prepared for each block, and were to be a part of the IRD block plan. The procedures and formats for the preparation of the five-year perspective plan, block credit plan, cluster plan and household plan, are specified in the guidelines. But sadly, no comprehensive integrated plans were developed at the block and the district levels, following the Manual, due to the lack of requisite expertise. However, five-year credit plans at the block and the district levels were prepared in most of the states. Recently, at the instance of Planning Commission, GoI, comprehensive five year plans were prepared by selected non-governmental organisations (NGOs) for 150 most backward districts in the country under the new Food-for-Work (FFW) programme. However, to sum up, we could say that so far there has not been any meaningful decentralisation of planning in India below the state level.

METHODOLOGY OF MICRO-LEVEL PLANNING

Micro-planning is essentially a two-stage process of diagnosis and prescription. The first stage consists of a preliminary survey of local conditions for an appraisal of natural and

human resources, institutions, and infrastructural facilities and services available in the area, to obtain a proximate view of the organisation and management of individual rural enterprises, including farms and their major handicaps and shortcomings, and to identify the major constraints on—and opportunities for increasing—income and employment. The second stage is to work out improved micro plans for representative types and size groups of rural enterprises.

To be successful and effective, micro-planning requires an interdisciplinary approach. The technical agricultural scientists—the agronomist, the horticulturist and the agricultural engineer—and the social scientists should work together to identify the major possibilities of—and key constraints on—increasing production and income in the area, to design appropriate research and action programmes to remove or minimise the constraints, and to exploit the potentialities, and to test, on a limited scale, these programmes under real world conditions.

The important components of a sound micro-planning programme can be elaborated as follows, with special reference to the farm sub-sector.

Farm Planning and Programming

The first step necessary to implement this component of the programme is to identify and delineate the major farming areas of the country. Two types of areas may be identified to meet different agricultural planning needs. First, crop regions that would be appropriate for central production planning of major crops. Second, agro-climatic regions/areas that could be used for overall agricultural planning by the district, state and central governments.

In India, several attempts have been made in the past to delineate areas based on several criteria. The most comprehensive work on agro-climatic classification of the country is the one done by the Agro-Climatic Regional Planning (ACRP) unit of the Planning Commission. The unit has recommended the adoption of the ACRP approach for bringing about balanced, sustainable agricultural and rural development. The ACRP approach is based on optimum utilisation of land and water resources through decentralised and participatory planning, which has been facilitated by the 73rd and 74th Constitution Amendments. The ACRP project was launched by the Planning Commission in 1988. The project has generated a large volume of high quality research-based information, useful for agricultural planning (Basu and Guha 1996; Basu and Kashyap 1996). The moot question now is: How to institutionalise the ACRP approach and ensure that it becomes an integral part of overall national and regional development planning?

For each major agro-climatic region or area, a sample of 50–100 typical farms is selected on the basis of their representativeness of the most important farm types (with respect to soils, farm size, and so on) of the area. In cooperation with the selected farmers, a farm business survey is conducted, and information about input–output coefficients, resource availability, and the kind and level of predetermined activities is collected. Cooperation with agronomists is necessary to acquire information on improved

crop varieties and their yield response to fertilisers, with animal scientists for information on high-yielding breeds of milch animals and appropriate feeding practices, and with agricultural engineers on the technical feasibility of using tractors and machinery for various field operations and transportation. This information may be generated by conducting sample trials and demonstrations on farmers' fields. On the basis of these technical data and the data obtained from the sample farmers, a set of alternative farm plans are worked out, indicating the range of different crops and livestock combinations which are technically feasible.

Linear programming is by far the most commonly used tool for micro-level planning. This technique can be used to determine:

1. the most profitable combination of crop and livestock activities under varying assumptions about the level of technology, resource availability, and input and output prices;
2. the optimal amount of outside financing needed to maximise the returns to the farmers' fixed resources;
3. the least-cost methods and techniques of production to employ in those cases where alternative techniques are available;
4. the sensitivity of the farm plans to variations in the values assumed for various economic factors included in the model; and
5. the shadow prices of scarce resources/inputs, which would serve to direct the type of investment which should be made.

The inputs and outputs from the farm plans are aggregated for the major farming areas and the nation, and are evaluated with respect to national production needs and the possibilities of meeting the supply requirements for various inputs and services. Not many details are required, and only a few selected major products and input items are handled.

Harmonising Local Farm Plans and National Production Targets

The farm management specialist works out a set of farm plans for a certain area, without reference to what would be the effect of the farm plans so prepared on aggregate output and aggregate supply requirements of the various farming areas and the country as a whole. On the other hand, the macro-economist works out a set of production targets on the basis of past production records, prospective demand, nutritional needs, foreign exchange requirement, and so on, none of which are based on the particular agricultural resources and the potential production capacity of various agricultural areas of the country. Hence, the national planners really do not know whether their production targets can, in effect, be achieved, or what it takes to achieve them. The farm management researchers really do not know what effect the adoption of a series of specific improvements in farming methods and enterprise combinations would have on the aggregate output of various

products, on the aggregate requirements of inputs, on the total supply and demand, and on the import and export situation of the country.

Harmonising local farm plans and national production targets requires a tentative breakdown of the national production targets into the major farming areas, and comparison with the aggregated farm plans for the farming areas and the nation as a whole. Major discrepancies between the national plan targets and the national production (aggregated from farm plans for important individual agricultural products) are harmonised by working out alternatives acceptable from the point of view of both the national needs and local production feasibility. Similarly, the aggregate input requirements derived from the farm plans are evaluated in the context of national supply prospects, financial feasibility and foreign exchange considerations. Infrastructural investments needed for the facilities of transport, marketing, storing and processing are stressed, as this makes the required supplies of inputs available to the farms in various areas, and moves the increased output efficiently through the market channels.

Improving External Environmental Conditions

Changes in the external socio-economic and institutional conditions affecting the farmers' incentive to adopt a desirable farm plan and their ability to implement it, are explored in each farming area. We must identify those external factors which impede the implementation of the farm production plans, and indicate the specific incentives required for farmers to improve their production efficiency. Among these factors, the prevailing tenure arrangements, cost-price relationships, marketing facilities, availability of inputs at the farm level, nature and effectiveness of extension and other government services, cooperatives, and so on, are of crucial importance.

The methodology of micro-level planning specified above is an ideal one. In practice, this methodology is not followed in India except in cases where some reputed research institute specialising in agricultural planning, or an agricultural economist trained in farm planning and management, is involved in formulating the micro plans. The main reason for not following the ideal methodology is the lack of requisite expertise at the block and district levels.

METHODOLOGY FOR BLOCK- AND DISTRICT-LEVEL PLANNING

Almost all past efforts at development planning are characterised by the lack of an appropriate methodology for both planning and implementation at the sub-national levels. Conscious of this fact, as stated earlier in the section 'Decentralisation of Planning' of this chapter, the Planning Commission constituted a Working Group in 1977 under the chairmanship of M. L. Dantwala, in order to draw up detailed guidelines for block level planning. The Dantwala Working Group mentioned in its report that no serious attempt had been made so far to induct technical skills in planning at the district level,

even in states that have set up some sort of district planning machinery. The Working Group recommended the following guidelines for planning at the block and district levels (GoI 1978b: 4):

1. Prepare and analyse resource inventories to assess the prevailing level of development, potential for further development, and to identify constraints on further development.
2. Determine priorities of various programmes proposed for the area and identify a catalytic programme.
3. Formulate programmes and projects for development, and establish their spatial and temporal linkages within an integrated frame work.
4. Devise a plan for fuller utilisation of manpower resources.
5. Assess the availability of financial resources from various sources, such as the district budget, banking system and private sector, and mobilise the same.
6. Provide for monitoring and concurrent evaluation, or parallel audit of development plans and their modification from time to time in the light of experience.

These guidelines define the scope of the functions of the planning team alright, but they are of little help to the planner as far as the actual mechanics of formulating, evaluating and integrating various projects is concerned. The planner needs a framework which could guide him in collection and processing of data, and in formulating, ranking and combining various projects in optimal proportions, given a set of technical, economic and institutional constraints, and a choice criterion.

We now make a modest attempt to outline such a framework. The planning framework consists of a number of components, which are described below.

Delineation of Viable Areas for Planning

This is the first logical step in the process of rural development planning. Several factors, such as cohesiveness, locus of economic activities, an adequate resource base for self-sustained growth and the nature of the development programmes, need to be considered in identifying and delineating the areas for planning.

The question of an appropriate basic planning unit still continues to be controversial. But it seems that the community development block has been accepted as the primary unit for local planning. But block level planning will have to be built within the framework of district level planning, which has to be adjusted to the state plan, which forms part of the national plan. On the other hand, the use of the district as the basic planning unit is advocated on the grounds that time series area and production data are not available in published form for any units smaller than the district.

In the present situation in India, the block may be a convenient administrative unit for planning and implementation of area development programmes, with clusters of villages delineated on the basis of micro-watersheds/command areas within the block,

-serving as the ultimate units for micro-level planning. The framework for integrated planning outlined in this chapter is based on the concept of multi-level planning, with clusters of villages (sub-areas) serving as the ultimate units of micro-level planning.

Determination and Quantification of Plan Objectives

This is the second step in the process of area planning. The objectives set for the area plan should represent the collective needs of the people living in the area, and should be realistic and operational. From past experience with planned development, it has become abundantly clear that it is no longer appropriate to formulate the principal objectives of a plan in terms of a specific target of growth only. The rate of growth in income and production that is achieved during the plan period is of little importance, if it does not result in the reduction of the worst forms of poverty and unemployment. The essential point is that a high rate of growth has not been, and is not, any guarantee against worsening poverty and unemployment. 'How much is produced, how fast, and what is produced and how' are all equally important. Keeping this in view, we can specify the following as the main objectives of planning at the block and district levels:

1. Maximising production in agriculture and allied activities in the rural areas using most cost-effective techniques and methods.
2. Removal of unemployment and significant underemployment.
3. An appreciable improvement in the level of living of the poorest sections of the population.
4. Provision by the state of some of the basic amenities like drinking water, elementary education, adult literacy, health care, rural roads and rural housing for the landless.

Identification of Target Groups

To achieve the plan objectives, a comprehensive and integrated area plan covering the entire rural population is called for. For the purposes of planning, the target population can be broadly classified into four categories, as follows:

1. Farm households possessing land holdings of economic size
2. Farm households possessing land holdings of uneconomic size
3. Landless agricultural labourers
4. Rural artisans

The population falling in the first category would require technical assistance and guidance, as well as supply of inputs and institutional finance in order to be able to adopt the new farm technology appropriate for the area. If farmers in this category adopt new farm technology, it will substantially increase farm production, and will also generate considerable employment opportunities to absorb a significant proportion of the rural unemployed.

For the households in the second category, high-value and labour-intensive crops will need to be identified, and their production and marketing facilitated. Besides crop production, some complementary and supplementary enterprises, like dairying, poultry, bee-keeping, pisciculture and sericulture, will also need to be introduced on these farms to supplement their income.

For landless agricultural labourers and rural artisans, a set of cottage and small-scale industries, and rural crafts will need to be identified and evaluated in terms of their technical and economic feasibility, and social acceptability. A massive programme of appropriate rural crafts and industries would require upgrading traditional skills, setting up a chain of training-cum-production centres, supply of raw materials and credit, and institutional arrangements for marketing of the output.

In the first two years of the plan, the first category of target population may be left out of the plan fold, and the resources available for development may be devoted to the betterment of the quality of life of the lowest three strata of the population.

Resource Appraisal and Identification of Constraints on Development

After identifying the target groups, the next step in the process of area planning is to appraise the quantity and quality of natural, human and artificially created resources available in the area, and those likely to be available from outside the area for the implementation of the plan. The process of resource appraisal would also facilitate the identification of constraints on any further development of the area. Resource appraisal is a multidisciplinary endeavour, requiring the collaboration of meteorologists, hydrologists, plant scientists, animal scientists, soil scientists, agricultural engineers and social scientists.

Technical scientists appraise the environmental attributes (land, water, plants, fish, livestock and mineral resources) and the available technologies to exploit them, whereas social scientists appraise the attributes of human resources, institutions and organisations. The end product of the appraisal is a comprehensive resource inventory of the biophysical and socio-economic phenomena. The use of a proforma facilitates the resource appraisal exercise and the preparation of resource inventories.

Most of the information required for preparing a resource inventory is usually available with various government departments, and other public and private agencies and organisations. Some of the information, such as input use, yield rates, income and expenditure patterns, and sources and structure of employment will need to be collected afresh from a representative sample of the target population. Preparation of a preliminary plan format would help in gathering the right kind of information and should, therefore, precede data collection.

The resource inventory should be analysed to identify the major constraints on the achievement of the objectives of area planning. Some of the constraints may be technological, others economic and institutional, and still others social and cultural in nature. The constraints may be identified by direct contact with the people, area leaders, extension

workers and programme administrators. Some of the constraints could be removed or relaxed within the plan period with the resource, technology and institutional framework already available in the area.

On the other hand, there could be some other constraints that may require a longer time to be removed than the proposed plan period. Their alleviation may require further basic and/or applied research and/or a new institutional structure, which may not be feasible during the proposed plan period. After their identification, the constraints should be listed according to (a) their significance, as measured in terms of economic losses suffered by the people when they are present; and (b) the relative ease with which they can be removed within the plan period.

Identification and Selection of Development Projects

The next step in the process of area planning is to prepare a list of all technically feasible activities/enterprises, which could be taken up in the area. This is again a multi-disciplinary endeavour. Insights gained from resource appraisal would prove helpful in the identification of (agro-technically) appropriate activities for the area. The activities would include those which are already prevalent in the area, as well as those found successful under similar conditions elsewhere. The following four criteria seem to be appropriate in identifying such projects:

1. The activities should be technically and organisationally feasible.
2. The activities should directly or indirectly contribute to the objectives of the plan.
3. The activities should be legally permissible.
4. The activities should be, by and large, socially acceptable.

The criteria for selection of projects for an area are largely furnished by the values and preferences of the people living in the area. Generally speaking, four criteria—efficiency, equity, employment and sustainability—can be used to make a choice from amongst a shelf of projects initially identified as appropriate.

Formulation of Development Projects

After having identified and selected various projects for inclusion in the plan, the next step is to formulate detailed projects for the activities so selected. Each of the projects should specify the following:

1. Title of the project
2. Rationale for the project

3. Duration of the project
4. Objectives of the project
5. Location of the project
6. Target groups to be covered
7. Details of the technology to be adopted
8. Cost-benefit calculations
9. Indicators of success
 - (i) Increase in production of major produce
 - (ii) Increase in income
 - (iii) Incremental employment
 - (iv) Distribution of project benefits among the target groups
 - (v) Impact on environment and ecology
 - (vi) Social acceptability
 - (vii) Sustainability
10. Financing strategy
 - (i) Total financial outlay needed
 - (ii) Amount likely to be available from the target groups
 - (iii) Amount likely to be available from other ongoing government projects
 - (iv) Amount likely to be available from various institutional sources
 - (v) Balance to be met from fresh allocations
11. Linkages with other projects
12. Implementation: organisational structure, staffing, flow of funds and work schedules
13. Arrangements for supplying inputs and disposing output
14. Arrangements for monitoring, feedback, control and evaluation
15. Anticipated externalities and conflicts, and procedures for their resolution

It is important that a separate project be formulated for each distinct process or activity. For example, if wheat can be produced by three different methods—(a) with the adoption of a complete package of improved inputs and practices; (b) with 50 per cent of the recommended dosage of nitrogen, phosphorous and potash (NPK), and all other improved practices; and (c) with no fertilisers and no other improved practices—then three separate projects would need to be formulated for it. Similarly, if two different scales of a cottage industry are to be considered, two different projects should be formulated.

The task of project formulation is highly technical in nature and, therefore, can be handled satisfactorily only by a multidisciplinary team of experts. Expertise in project formulation is not usually available at sub-state levels and, therefore, this very crucial phase of planning remains, by and large, neglected. The competence of the planning staff at all levels in the areas of project formulation and appraisal needs to be upgraded. This should be done through special in-service training programmes.

Determining Optimal Mix of Development Projects

After having formulated detailed projects, the next step in the process of area planning is to determine the optimal mix or combination of various projects, so as to attain the objectives of the area plan under the given conditions of resource availability, and the technical, economic, institutional and social constraints. A number of quantitative techniques are now available for planning at both the micro level and the macro level. But of all the planning techniques, linear programming is by far the most powerful and flexible tool that can be used for planning. This technique can facilitate

1. annual replanning exercises within the framework of a five-year rolling plan;
2. testing the effects of changes in projected resource availability, prices and government policies on plan objectives through sensitivity analysis;
3. estimation of the amount of outside financing needed to meet the objectives of the plan;
4. estimation of the amount of labour employment that would be generated as a result of the plan and
5. investment planning on the basis of shadow prices generated in the linear programming solutions.

A multi-period linear programming model can be used to determine the optimal mix of various activities/projects for an area, a block, a district or a watershed. The model is constructed essentially in a linear programming framework, adding to it the appropriate dynamic equations characterised by flexibility coefficients on the lines of so-called Recursive Linear Programming (RLP). These dynamic equations reflect the dynamic structure of agricultural production, and the psychological and cautious responses of producers to innovations. The formal structure of the model can be presented in its mathematical form as follows (Ramakrishnaiah 1980).

1. Maximise $Z(t) = \sum_{j=1}^n C_j(t)X_j(t)$ ($j = 1, \dots, n$ and $t = 1, \dots,$

Subject to the constraints

$$(i) \quad \sum_{j=1}^n a_{ij}(t)X_j(t) \leq b_i(t), (i = 1, \dots, m)$$

$$(ii) \quad \sum_{j=1}^n a_{ij}(t)X_j(t) = b_i(t), (i = m + 1, \dots, p)$$

$$(iii) \quad \sum_{j=1}^n a_{ij}(t)X_j(t) \geq b_i(t), (i = p + 1, \dots, r)$$

$$(iv) \quad X_j(t) \leq (1 + \bar{\beta}_j)X_j(t-1)$$

$$(v) \quad X_j(t) \geq (1 - \underline{\beta}_j)X_j(t-1)$$

$$(vi) \sum_{j=1}^n X_j(t) \leq (1 + \bar{\alpha}) \sum_{j=1}^n X_j(t-1)$$

$$(vii) \sum_{j=1}^n X_j(t) \geq (1 + \underline{\alpha}) \sum_{j=1}^n X_j(t-1)$$

$$(viii) X_j(t) \geq 0$$

In the above equations,

$Z(t)$ = returns over variable costs in rupees in year (t);

$C_j(t)$ = returns over variable costs per unit of the j th activity in rupees in year (t);

$X_j(t)$ = units of the j th activity in year (t);

$a_{ij}(t)$ = requirement ($a > 0$) or contribution ($a < 0$) of the j th activity for the i th constraint;

$b_i(t)$ = the i th constraint level of supply—a resource capacity in equation (2), an accounting balance in equation (3), and a requirement to be met in equation (4);

$\bar{\beta}_j$ = upper flexibility coefficient with respect to the j th activity;

$\underline{\beta}_j$ = lower flexibility coefficient with respect to the j th activity;

$\bar{\alpha}$ = upper flexibility coefficient with respect to a group of related activities; and

$\underline{\alpha}$ = lower flexibility coefficient with respect to a group of related activities.

This model was used for the formulation of a set of five-year agricultural development plans for a small watershed in the hills of erstwhile state of Uttar Pradesh (now Uttarakhand). The objective function of the model was to maximise the aggregate returns over the variable costs for the watershed, subject to various constraints. The model included 72 activities and 47 constraints. To sum up, we could say that the model is a very powerful and highly flexible tool for formulating multi-period integrated development plans at both micro and macro levels.

It is hoped that with the introduction of computers at the district level, preparation of household, cluster, block and district plans would be facilitated. However, a computer cannot be a substitute for trained and experienced rural development planners, who are a scarce resource at present in India.

MAIN POINTS

1. A plan is a blueprint for action. It points out a precise way to reach a predetermined goal or a set of goals within a predetermined period of time with the means that are available with the planner and under the prevailing circumstances. Development planning as a process involves the application of a rational system of choices among feasible courses of investment and other development possibilities, based on a consideration of economic and social costs and benefits.

2. These days, governments in virtually all countries are engaged in one way or another, and to a small or large extent, in planning and regulating their economic activities. However, planning makes a positive contribution only if, through it, the objectives are achieved more rapidly and more efficiently, than if development followed natural forces.
3. Planning can contribute to development, mainly through direct provision and allocation of scarce resources by the government, regulation and direction of resource allocation decisions in the private sector, coordination of public and private actions, and guiding the use of private resources through the manipulation of market force.
4. Problems in planning can be identified and, consequently, planning can be carried out, at the national and state levels (macro level), at the level of the individual unit of production/enterprise (micro level) and at an intermediate level (meso level).
5. If micro-level planning is to play an effective role in the modernisation of India's rural economy, it must be treated as an integral part of development planning. India's approach to development planning has been predominantly macro-oriented, emphasising national goals and priorities. For successful and effective planning, it is necessary that the macro and micro plans are harmonised at some intermediate (region/area) level.
6. In view of the different agro-climatic, techno-economic, and socio-cultural factors occurring in different regions of India, national planning, to be realistic and effective, has to be decentralised to sub-national/sub-state levels. Decentralisation or regionalisation of planning and development is a logical step for a democracy. Despite several attempts at it, there has not been any meaningful decentralisation of planning in India below the state level.
7. Planning is essentially a two-stage process of diagnosis and prescription. The first stage consists of an appraisal of natural and human resources, institutions, and infrastructural facilities and services available in an area, and to identify major constraints on—and opportunities for—increasing income and employment. The second stage is to work out improved micro plans for representative types and size groups of rural enterprises.
8. The important components of a sound micro-planning programme in the farm sub-sector are: (a) farm planning and programming; (b) harmonising local farm plans with national production targets and (c) improving the external environment by removing various constraint.
9. A sound planning framework consists of a number of components such as: (a) delineation of viable areas for planning; (b) determination and quantification of plan objectives; (c) identification of target groups; (d) resource appraisal and identification of constraints on development; (e) identification and selection of development projects/activities; (f) formulation of development projects and (g) determining optimal mix of selected projects.
10. A number of quantitative techniques are now available for planning at both micro and macro levels. But of all the planning techniques, linear programming is by far the most powerful and flexible tool that can be used for planning.

QUESTIONS FOR DISCUSSION

- 12.1. Discuss the problems and prospects of rural development planning in India.
- 12.2. Most of the developed countries of the world, including the USA and Japan, do not prepare five year plans of development like India does, but despite that they are developed. Why?
- 12.3. Why is the integration of micro plans and macro plans necessary? What are the problems in integration?
- 12.4. Why is decentralisation of planning in India necessary and why there has not been any meaningful decentralisation of planning so far?
- 12.5. What are the main components of an ideal development project? Select any development project you can have access to and appraise it vis-à-vis an ideal project.
- 12.6. Select a district level plan available in your library, or elsewhere, and appraise it with reference to an ideal planning framework.

13 Organising for Rural Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define the term 'organisation' and examine the role of organisations in rural development;
- explain various organisational models and their relevance in India's context;
- list some important criteria for designing an appropriate organisation and
- critically examine the suitability of government organisations, panchayati raj institutions (PRIs), cooperatives and voluntary agencies (VAs)/non-governmental organisations (NGOs), and corporations for promoting rural development.

INTRODUCTION

By 'organising for rural development', we mean (a) designing appropriate organisational structures; (b) facilitating desirable human behaviour within the organisation; and (c) organising the clientele of a programme, such that the stated goals of the organisation and/or the programme under consideration are achieved as efficiently as possible.

The term 'organisation' is derived from the Greek word, *organon*, which means a tool or an instrument. An organisation may be thought of as the coordinated actions of two or more people for the purpose of meeting an objective. In the context of management, we may conceptualise an organisation as a concrete and tangible entity, comprising men, machines and material resources that are organised and interrelated in a particular manner. The main purpose of an organisation is to transform something—materials, people, information—in a manner that adds value to what is transformed, and allows the organisation to survive and prosper.

The term 'organisation' is also used to refer to any government, or governmental sub-division or agency, corporation, trust, estate, partnership, cooperative or association. In this sense, it connotes various forms of organisation. An organisation becomes an institution when nobody is indispensable for its survival and growth, that is, when it becomes self-sustaining, irrespective of its employees who leave it or who join it.

An organisational structure may be thought of as made of goals, tasks, resources, relationships, reward-and-punishment systems, communication systems, authority systems, and so on. The net effect of 'structure' is a specific set of behavioural patterns. Therefore, any structural change basically involves a behavioural change. In a human being, however, behaviour must be consistent with his attitudes. When there is inconsistency or dissonance, unpleasant tensions arise, which the individual seeks to resolve. When he cannot alter his behaviour (because he cannot leave the structure), he changes his attitudes to attain consistency.

The rationale of organising the programme clientele is based on the Participative Model of organisations. According to the proponents of this model, 'the overall objective of the organisation is to achieve satisfactory integration between the needs and desires of the members of the organisation and the persons functionally related to it, such as shareholders, suppliers, consumers [programme beneficiaries]' (Lorsch and Lawrence 1972: 12).

An organisation performs a variety of functions. Some of the important organisational functions are presented in Box 13.1.

Box 13.1 Functions of an Organisation

1. Formalising rules and procedures for facilitating the repetition of desired actions.
2. Ensuring that desired actions will fit together in a systematic way, and that these will be coordinated.
3. Making the behaviour of organisation members predictable.
4. Storing information and 'learning' in the course of their existence.
5. Establishing an identity independent of the people within it, thereby ensuring its existence in spite of members who leave it.
6. Allocating rewards to contributors and claimants.

Source: Singh 1999: 263.

Thus, the failure to organise properly can result in wasted energy and resources, the inability to accumulate knowledge, a dependency on the presence of certain people for existence and a failure to provide incentives for contribution by its members.

To understand and interpret information about an organisation, a manager should adopt the following three elemental strategies:

1. *Measures of events*: a case study of an organisation
2. *Measures of association*: determining the correlation between two measures
3. *Measures of causation*: identification of causal variables by using experimental procedures.

This chapter first briefly presents a few organisational models, then lists a few criteria of designing an appropriate organisation for rural development and, finally, it critically evaluates the suitability of various forms of organisations for rural development.

A DETOUR TO ORGANISATIONAL MODELS

Like the person who solves problems in other fields, the rural development manager concerned with organisational issues needs analytical tools and models that can help him analyse the problems he faces, and evolve solutions to the problems. When a manager wants to build an organisation, or when he sets out to change an existing organisation, he has in mind a theoretical model of what the reorganised structure should resemble. A manager can be more effective, if he is explicit about the organisational models he chooses to use.

Now we discuss the salient features of a few major organisational models of possible relevance to rural development.

Gouldner (1959: 404–06) defines the following two types of organisational models.

The Rational Model

In the rational model, the organisation is regarded as a rationally conceived instrument or means to the realisation of group goals. It assumes that decisions are made on the basis of a rational survey of the situation and well-received knowledge with an orientation to a legal framework. Basically, the model is 'mechanical', with explicit focus on legal structures or 'blueprinted' patterns, which can be inspected and rationally manipulated with a view to realise the group goals. Individual organisational elements can be subjected to planned modifications, and the organisation as a whole can be brought into conformity with explicitly held plans and goals. This model is widely used by managers in analysing issues of organisational design.

The Natural-system Model

This model regards the organisation as a natural whole or system which is oriented to the realisation of group goals. Its elements are seen as interdependent and emergent

institutions, which can be understood only in relation to the diverse needs of the total system. The organisation continues to strive to survive and to maintain its equilibrium even after its goals have been attained, and thus, it becomes an end in itself with its distinct needs which have to be satisfied. Changes in organisational patterns are considered the results of cumulative, unplanned and adaptive responses to threats to the equilibrium of the system as a whole. The organisation is seen as growing organically, with a natural history of its own, which is modifiable only at a great cost, if at all.

Buckley (1967: 36–41) has criticised the mechanical rational model and the biological natural-system model and has offered an alternative modern system theory, which he feels is more consistent with the observed functioning of organisational systems. He points out that organisations are more like 'socio-cultural systems' than either mechanical or biological systems. To many managers, both the rational and the natural-system models may seem inappropriate. Yet many, if not most, managers implicitly or explicitly rely on one, particularly the rational model, and sometimes on an eclectic mixture of both, when they think about issues of organisational design.

To understand why these two models are so widely used, it would be helpful if we develop a general understanding of the 'Classical' and 'Participative' models, which have a clear connection to Gouldner's 'rational and natural-system' dichotomy, and the 'socio-technical' and 'cognitive models which have captured more of the complexity of organisational phenomena.

The Classical Model

This model focusses primarily on the relationship between management and workers. Workers are viewed as instruments, solely motivated by economic incentives and existing to carry out organisational objectives. Managers, on the other hand, are characterised as rational, omniscient and possessing outstanding personal qualities, such as kindness and fairness. However, despite these qualities, the manager's role defines that he be firm with workers. Because of the model's view of the worker as an 'economic man', rewards and punishments to the workers should be economic in nature. An astute classical manager would give detailed instructions to his subordinates. Then, according to the model, he must measure or assess exactly what has been done by the workers, and whether the employee should be rewarded or punished for his performance in executing the task. The essence of this model is: fitting the 'right' man into the 'right' job. This fit is to be defined by personal characteristics, such as physical strength, manual dexterity or specific craft skills.

The classical organisation pattern resembles a pyramid. Within this structure, both the chain of command and the channels of communication are vertical. The vertical chain of command stipulates that each person in the organisation is to have only one superior or boss. Similarly, each member is to have some authority delegated to him, which is equal to his responsibility.

The Participative Model

While the Classical model is derived from an analysis of the experience of practitioners, the participative model is derived from the work of behavioural scientists. According to the proponents of this model, the individual in the organisation is engaged in a multidimensional process of development. Within this dynamic developmental process, the individual is seen as moving through the process of maturity. As he matures, this individual's needs, goals and desires tend to move in a specific direction. The individual seeks to be in a position of relative independence, in which he has some level of self-determination about his future. He begins to seek deeper, more consistent and increasingly complex interests with which to be challenged. And he also seeks a greater depth to his behavioural interactions within the organisation.

According to participative theorists, the overall objective of the organisation is to achieve a satisfactory integration between the needs and desires of the members of the organisation, and the persons functionally related to it, such as consumers, shareholders and suppliers. It is assumed that the management can make full use of the potential capacities of its human resources, only when each person in the organisation is a member of one or more effectively functioning work groups, thus participating in the overall organisational effort. Further, it is required that these groups have a high degree of group loyalty, effective skills and goals of high performance.

The organisations that perform best, according to this model, are those which motivate the individual to 'cooperate', not compete. In achieving this cooperation, the group leader is accountable, and must accept final responsibility for the performance of the group. However, in spite of the leader's responsibility for group performance, he must consider accepting those group decisions with which he does not concur, if he feels he could adversely affect group loyalty by neglecting to take the group's decisions into account.

The Socio-technical Model

This model views the organisation as a system interacting with its environment—a system in which behaviour is influenced by human, technological, social and organisational inputs. All these variables are interdependent, so that a change in one influences the others.

In this model, the organisation is seen as an open system, exchanging resources with its environment in the form of an input–conversion–output process. The enterprise takes in raw materials, energy and manpower, and converts them into output of goods and services. The ability of an organisation to satisfy and adapt to its environment determines its success or failure, in terms of accomplishment of the 'primary task' for which it is built.

In this model, the organisation is viewed as consisting of a 'formal organisation' and an 'informal organisation', and both these components are expected to be as congruent as possible. The major strength of this model is in its systematic treatment of the complex realities of the organisation life, thereby allowing us to identify the diverse causes of behaviour in organisations. The model is very useful for planning of division of work and

allocating primary tasks with a view to enhance organisational efficiency. Its limitation is that it is difficult to use as a design tool without practice and formal training (Lorsch and Lawrence 1972: 22).

The Cognitive Model

This model is also known as the Behavioural Theory of Decision Making. This approach to the analysis of complex organisations was developed by Herbert Simon, James March and their colleagues at the Carnegie Institute of Technology, mainly to aid them in building quantitative models of the decision process (March and Simon 1958). Their model assumes that price and output decisions are made by a group of managers whose goals are often in conflict with each other, and who possess imperfect information, rather than by an individual entrepreneur who has perfect information, as presumed under the economic theory of the firm. In their opinion, organisations tend to 'satisfice' rather than optimise profit by the very nature of their decision processes. They view the organisational decision process as built around the development of alternative courses of action and execution of a choice from amongst these alternatives, on the basis of available information and under constraints imposed by the environment, as well as the structural aspects of the situation.

Although the cognitive model may seem overly complex, it provides a number of useful insights into the functioning of complex organisations. As an analytical approach, it leads us to view an organisation as a 'process' which evolves from the interaction of structure, human cognitive mechanisms and the nature of the decisions that must be made. In this sense, it is a dynamic model, which emphasises the development and adaptation of organisational systems under varying conditions.

THE SEARCH FOR A NEW PARADIGM

Unfortunately, the organisational models reviewed in the preceding section are not very helpful in designing appropriate organisational structures for rural development in India, as also in other developing countries. This is mainly because these models were all built out of the Western experience, which, to begin with, was confined to relatively simple and well-defined organisational activities, since the state functions were essentially of regulation and maintenance. Under those conditions, it was relatively easy to develop an administrative theory capable of analysing—through both inductive and deductive systems—the various organisational issues. Having done that, it was also possible to design an operating system capable of performing various tasks.

In a developing country like India, with a mixed economy, it is difficult to observe any uniform pattern either in the activities or in the behaviour of a development organisation. In the fields of agriculture, community development, health, family planning and in many other areas of social welfare, it is virtually impossible to establish clear-cut roles for

social, economic, political and administrative organisations. Under these circumstances, it has not been possible to identify the behavioural patterns which have to be changed, or the methods by which they can be changed; nor has it been possible to design an administrative structure which can bring both the change agent and the clientele system in any kind of effective working relationship. As a result, the various organisations engaged in rural development criss-cross each other, causing a great deal of confusion in the operations and wastage of resources in the process.

Even so, the organisational models serve considerable purposes in their applications to discrete projects, such as those relating to fertiliser production, power generation and irrigation. In these projects, the functions, activities and tasks to be performed can be fairly accurately measured and identified, making it easy to prescribe what is to be done organisationally to achieve them. However, when it comes to diffused programmes such as agricultural and rural development programmes, where the goals are intertwined with different sets of forces and are not so easy to describe, it has not been possible to develop appropriate organisational structures for effective implementation and management. Therefore, the search for appropriate organisational designs and structures for rural development still continues.

Numerous individuals and institutions are searching for new paradigms of development, based on structures which meet the criteria of efficiency, sustainability, equity, well-being and participation. Toffler (1980: 368), among others, argues that sustainable social development should be based on exploitation of the one resource that is inexhaustible—information and the human capacity for creative imagination. The structures of social institutions must be designed with the intention of gaining complete advantage of the potentials of this resource. This is basic not only to sustainable and equitable material well-being, but to the non-material advancement of human beings as well.

Berger and Neuhaus (1977: 2–3) suggest policy actions to strengthen the role of intermediate human institutions, such as the family, the neighbourhood, the self-managing work group, the VA, and so on, which perform a mediating role between the individual and the mega-structure (government bureaucracies, big corporations, and so on), providing a source of personal support and recognition, and facilitating solutions to problems at the local level and creative innovation.

Korten (1981: 610) asserts that

...the answer rests not in abolishing society's mega-structures since they are basic to the functioning of any modern society. Rather it rests in substantially reforming them, in loosening central control and strengthening the feedback systems that increase potential for self-direction and direct participation at local levels consistent with the well-being of the larger society. It will be necessary to move beyond more primitive forms of bureaucratic organisation, able only to control or to substitute for local action, to substantially more sophisticated forms which can work to strengthen capacities for creative local self-help action and self-control. Though most calls for greater reliance on local level solutions to global problems look to such action as a substitute for bureaucratic action, it is neither so easy to dismiss their stifling regulatory power or to achieve effective problem solving on the scale required without access to their massive resources.

In the Introduction to a series of studies on bureaucracy, Littrell (1980: 263) concludes:

Although many critically important problems face us today, most of the problems as well as proposals for their solutions are defined and shaped in bureaucratic organisations. Our capacity to understand and modify bureaucracy in the present decade will greatly determine our capacity to solve our problems and thus shape the decades to come.

CRITERIA FOR DESIGNING AN APPROPRIATE ORGANISATION

While the organisational structure for rural development may differ from state to state, depending upon the variations in the role assigned by the states to non-governmental organisations (NGOs) and the panchayati raj institutions (PRIs) for agricultural and rural development, an ideal rural development organisation should satisfy certain criteria as presented in Box 13.2.

Box 13.2 Criteria for Designing an Appropriate Organisation

1. It should provide for effective coordination of macro-planning and micro-planning, that is, vertical integration of planning.
2. It should provide for the formulation of inter-sectoral plans, programmes and projects, and their horizontal integration.
3. There should be a mechanism for maintaining a dynamic relationship between planning and implementation.
4. The delivery system should be in a position to channelise the benefits of development programmes to the target groups and should be strong enough to resist vested interests that have in the past stood in the way of these benefits reaching the poor.
5. It should have a high degree of technical and professional competence.
6. It should provide for the maintenance of a direct and continuing relationship between the planners and people, and for the meaningful participation of the people in the process of development planning and implementation.
7. It should provide for checks, balances and correctives, so that target groups belonging to the weaker sections are not deprived of the benefits meant for them.
8. It should be sensitive to the needs of its clientele and responsive to changes in its external environment.
9. It should provide for participation of its target group(s)/clientele in making its policies that affect them.
10. It should be financially viable and sustainable.

Source: Singh 1999: 270.

We now briefly describe the salient features of various forms of organisations engaged in rural development in India, and critically appraise their suitability for the purpose.

GOVERNMENT ORGANISATIONS

The government has been, still is, and will continue in the near future to be an important organisation in the field of agricultural and rural development in developing countries, including India. Development is seen as the specific responsibility of the government in all such countries. This has far-reaching implications for the role of public bureaucracy, which is the arm of the state responsible for carrying out the wishes of political leaders. In most of these countries, efforts to bring about improvement in the quality of life of rural people depend heavily on government administration and bureaucrats. According to Bauer (1991: 190–91), economic development is not the result of forced mobilisation of people's resources, forced modernisation of attitudes and behaviour of people, of large-scale state-sponsored industrialisation or of achievement of political independence. It is the result of individual voluntary responses of millions of people to emerging or expanding opportunities, brought to their notice primarily through the operation of the market. The government has a limited role to play in this process and does not have to incur huge expenditure of public funds. The primary role of the government should be to create and nurture an institutional setup that provides needed incentives and facilities to economic agents to do what they want to do, and which is flexible and adaptable to changing social and economic conditions. Besides, the government should also establish mechanisms for coordination of the activities of atomistic economic agents and for removing uncertainty about human behaviour or solving the assurance problem which characterises the classic prisoner's dilemma.¹ More specifically, the main functions of governmental organisations/institutions can be seen at the following six levels:

1. facilitating policy formulation;
2. harmonising the actions of various economic agents and coordinating programme implementation;
3. providing incentives for collective action and self-regulation;
4. enforcing regulations and policing;
5. resolving conflicts and providing arbitration;
6. providing technical assistance.

After independence, certain changes were effected in the administrative system with a view to reorient it to meet the needs of development. The nation-building departments of agriculture, rural development, education and health have expanded considerably. New development agencies and corporations have been set up. The district is the focal unit of rural development administration and developmental activity is one of the numerous responsibilities of the District Collector. His prime responsibility is and will, in the foreseeable future, continue to be the maintenance of law and order. He is so preoccupied with this that it is impossible for him to do justice to the developmental responsibility. The District Collector leans heavily on the District Development Officer (DDO) for the purpose, but as all the authority is vested in the District Collector, the DDO only plays the second fiddle and is not able to achieve what is desired. Further, hierarchically, the DDO, being lower than the district collector, is unable to provide the requisite leadership

and obtain the cooperation of—and adequate input from—the officers of other departments/disciplines, which is so vital for coordinated development.

Due to the unethical value system and highly inflammable socio-cultural environment in which we are operating, the law and order situation has deteriorated over the years, requiring greater attention from the District Magistrates, which in turn means less attention, both quantitatively and qualitatively, for developmental activity. The result is that the goals of development have become mirages. There is yet another aspect of this matter. The machinery charged with the responsibility of law and order cannot handle the development portfolio adequately. The qualities required for the efficient discharge of the responsibility of law and order are just the ones which hinder developmental responsibility. For example, the efficient discharge of the law and order responsibility requires qualities of evasiveness, toughness, circumspectness and capacity to dispense expedients. For developmental work, however, one needs to be receptive, open-minded, communicative, empathetic and should have the capacity to go deep, and find real and lasting solutions. In these days of specialisation, how can one be expected to become adept at simultaneously handling varied responsibilities requiring contrasting skills?

It is, therefore, not surprising that even after more than five decades of development planning, rural administration still displays serious faults. It generally fails to deliver services and supplies promptly, efficiently and equitably. The failure is due partly to inadequate resources, partly to an elitist bias and partly to the lack of coordination. And rural administration generally fails to secure popular participation. Traditional attitudes have prevented any synthesis with local institutions or a real partnership with the people.

From a management perspective, the central challenge of our times is to understand and modify bureaucratic organisations by building into them a capacity for innovative learning, leading to a fundamental orientation in their purposes and modes of operation. This is what is called Bureaucratic Re-Oriented (BRO). What we need most urgently now are operational prescriptions for rural development organisations, which may want to implement the new strategy of BRO. Unfortunately, very little is known at present to advise a development agency about what it should do to achieve BRO and how.

Korten (1981: 610) suggests that BRO should give priority to the management of systems over the management of projects, to innovation over compliance, and to methodologies for continuous self-monitoring and rapid self-correction over formalised planning and evaluation methodologies. To achieve these, he suggests the formation of social learning clusters and networks within the system, linking together those individuals who have commitment to appropriate action, and providing them mutual support and operational methodologies needed to translate their good intentions into effective action.

Jesus (1984), on the basis of action-research activities of the Asian Institute of Management (AIM) through its Rural Development Management Programme (RDMP) team working with three agencies undertaking BRO, has attempted to construct a conceptual framework to capture the process of BRO. The salient features of his framework are presented in Box 13.3.

Box 13.3 A Conceptual Framework for Bureaucratic Reorientation

1. BRO assumes a decision by the agency to initiate a fundamental change in its objectives, or a radical shift in its strategy. Only the strongest—present or imminent—pressures from the external environment are likely to budge bureaucracies from their settled ways.
2. Once the new strategy is identified and accepted, the BRO process can begin. Access to the top management of the agency is a precondition for any attempt at BRO to get started and prosper.
3. BRO takes a long time, possibly longer than the tenure of the executive who starts the process. His departure from the scene inevitably results in some disruption of the BRO process.
4. For the purposes of triggering and sustaining the BRO process, it is vitally important that some source of external funds, such as a foundation or an international development agency be associated with the agency undertaking BRO. As with the stimulus for changes, resources for bringing about BRO have to come from outside the agency.
5. Training of agency personnel seems to be a tactically sound first step in the process of BRO. A training programme can serve not only to develop skills, but also to initiate or sustain the process of change.
6. A manager aiming to elicit certain behaviour patterns from his staff ought to focus on changing the structures within the organisation, rather than the attitudes of the people. But this assertion holds more strongly for private enterprise than for a government or public sector organisation. Public sector managers place a high premium on convincing people to change their views about their work. Not everyone will respond to the appeal for an attitude change, but not everyone will need to. A few 'champions' can have pervasive effects.

Source: Korten (1981: 610).

PANCHAYATI RAJ INSTITUTIONS (PRIs)

It was Gandhiji who realised the importance of village panchayat as an important instrument of rural development, and of promoting and nurturing democracy at the grassroots. He asserted that unless panchayats were invested with adequate powers, villagers cannot have real *swaraj*. Para iv in Article 40 of the Constitution of India was introduced at his insistence. The article states: 'The State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government.' In January 1957, the Government of India (GoI) appointed a committee under the chairmanship of Balwantray Mehta to study the working of the Community Development Programme (CDP), and suggest how best it could be maintained and implemented. The committee recommended a three-tier system of local government, christened 'panchayati raj' by Jawaharlal Nehru.

At the grassroots or village level were to be formed village panchayats, at the middle or block level were to be panchayat samitis, and at the apex or district level, zila parishads were to be formed. The new bodies were to have a wide range of powers and adequate finance. The committee offered two broad directional thrusts: (a) it argued that there should be administrative decentralisation for effective implementation of development programmes and (b) the decentralised administrative system should be under the control of elected bodies. The three-tier structure of the PRIs was brought into existence after the Mehta Committee scheme was approved by the National Development Council (NDC) in January 1958. The NDC affirmed the objectives behind the introduction of democratic institutions at the district and block levels, and suggested that each state should work out the structure which suited its conditions best.

The new system of PRIs was first adopted in Rajasthan and Andhra Pradesh in 1959, and, thus, PRIs have been in existence in India since then. However, there were inter-state variations in the structural pattern, tenure and responsibilities entrusted to them. With a view to grant a constitutional status to PRIs in the country and to bring about uniformity, the Indian Parliament passed the 73rd Constitution Amendment Act 1992, in December 1992. This act came into force with effect from 24 April 1993. It envisages the establishment of panchayats as units of local self-government in all states and Union Territories, except the tribal areas in the states of Nagaland, Meghalaya and Mizoram, and certain other scheduled areas. Subsequently, in December 1996, the provisions of the 73rd Amendment were extended to the tribal and other scheduled areas also, through an act of Parliament. Adequate powers and responsibilities were to be devolved upon the PRIs at the appropriate levels, to enable them to prepare and implement schemes for economic development and social justice, as entrusted to them under the items listed in the Eleventh Schedule to the Constitution. Significantly, the 73rd Amendment does not have a provision for the constitution of gram sabhas, but their powers and functions have to be specified by the state legislatures. However, in the extended act, constitution of gram sabhas is mandatory.

The salient features of the 73rd Constitution Amendment Act, 1992 are as follows:

1. The gram sabha has been envisaged as the foundation of the panchayati raj system. It shall perform such functions and exercise such powers as may be entrusted to it by the state legislatures.
2. There shall be three tiers of panchayats, at the village, intermediate and district levels. Only states having population not exceeding 20 lakhs will have the discretion to not constitute panchayats at the intermediate level.
3. Seats in a panchayat at every level are to be filled by direct election from territorial constituencies demarcated for this purpose. In addition, there would be ex-officio members also, as provided in the state legislation.
4. Seats shall be reserved at every level of panchayat for Scheduled Castes (SCs) and Scheduled Tribes (STs) in proportion to their population in a given panchayat area, and for women to the extent of not less than one-third of the total number of seats. Reservation for offices of chairpersons of panchayats at every level shall also be made for SC/ST, in proportion to the total number of chairpersons of panchayats at each

level as the population of the SC and ST in the state bears to the total population of the state, and for women to the extent of not less than one-third of the total number of offices of chairpersons in the panchayats at each level.

5. The term of office of panchayats shall be five years, and elections must be completed before the expiry of its duration; if dissolved earlier, elections must be completed within six months from the date of dissolution.
6. A State Finance Commission shall be constituted in every state, to go into the principles governing the distribution and devolution of financial resources between the panchayats and states.
7. The superintendence, direction and control of the preparation of electoral rolls and conduct of all elections to panchayats shall be vested in a State Election Commission.
8. The Eleventh Schedule has been added to the Constitution, which denotes 29 subjects/functions which could be entrusted to the PRIs. Elections to the PRIs in most states have been held. About 25 lakh people are estimated to be elected to different positions in the PRIs, out of which one-third are to be women. The central government is assisting the states in orienting the elected representatives and officials towards their new responsibilities through training.

A national committee of state panchayat ministers has been constituted by the central government to review the progress of implementation of the constitutional provisions and guide and advise the states in this regard.

While PRIs have been, on one hand, considered as having generated tensions, factions and party politics in village communities, they have been, on the other hand, considered as the only hope for achieving people's participation, which is the soul of the democratic system. Whereas the introduction of panchayati raj in the year 1959 was in itself a major landmark in the history of administrative reforms, the system was not implemented faithfully in most of the states, largely due to the indifferent attitude of bureaucrats towards it. Consequently, there have been more failures than successes. After the operationalisation of the 73rd Amendment Constitution Act, 1992, it is hoped that PRIs will emerge stronger and more dynamic to face various challenges and problems that still lie ahead of them. Their success in the future will depend on the extent of transfer of rural development functions, and devolution of financial and administrative powers to them by the state governments. If the deliberations of the conference of chief ministers and panchayat raj ministers held in New Delhi on 3 August 1997 are any guide, the new panchayati raj structure will take a long time to be fully functional. A major concern expressed at the conference was the slow pace of devolution of powers, functions and responsibilities to the PRIs. The conference recommended that the process of devolution of powers be completed latest by the end of December 1997, but it seems that this has not been done by most of the states yet. Similarly, the district rural development agencies have not been restructured to permit the PRIs to perform their intended functions effectively and efficiently.

While it is too early to assess the impact of the constitutional status given to PRIs, the report of the first concurrent evaluation survey of the Jawahar Rozgar Yojana (JRY), which covered 448 districts in the country, throws some light on certain aspects of elected village

panchayats, and the people who head them. The evaluation covered a one-year period from January 1992 to December 1992. The survey was conducted before the introduction of the 73rd Amendment to the Constitution. Some of the major findings of the evaluation are as follows: In West Bengal, as many as 89 per cent of the elected panchayat heads were landless and marginal farmers, whereas in states like Maharashtra, Punjab and Andhra Pradesh, over 25 per cent of the *pradhans* were big farmers, owning at least 10 hectares (ha) of land. As expected, a majority of the panchayat *pradhans* (77 per cent) were from the upper classes. Only 7 per cent of them were from the SC and another 15 per cent from the ST. About 3 per cent of the sample panchayats were headed by women of whom 41 per cent belonged to the SC. Of the panchayat *pradhans*, 13 per cent were graduates, about 24 per cent had education up to primary level and 7 per cent were illiterate. The level of deliberations in the panchayat level meetings was extremely poor. During the 12-month period preceding the survey, 39 per cent of the sample panchayats did not meet even once (Gangrade 1997: 755–56). In a study conducted in Orissa, it was found that women entered panchayat politics due to persuasion of their family members, or pressure from the village community or political parties. However, the women who reluctantly entered politics showed greater maturity in outlook, enthusiasm, political consciousness, and consciousness about their role and responsibilities (Panda 1997: 663). Given these features of panchayats and their elected heads, there is a need for building the capacity of elected leaders through education and training. This is all the more necessary, given a variety of administrative and financial functions expected to be performed by the elected leaders, as also the ambivalent attitude of the bureaucracy and the reluctance of the state leaders to part with power.

COOPERATIVES

If the goals of agricultural and rural development are to be achieved, it will be necessary that the people are organised within an institutional structure that gives them access to the national economic and social systems. Organising people is a political act because it alters the distribution of power within the community by increasing the number of people who are making decisions. Cooperatives are one of the institutional forms of organising villagers. A cooperative is generally viewed as a socio-economic organisation that can fulfil both social and economic objectives of its members, and that has its members' interests truly at heart. Cooperation has three dimensions, that is, economic, social and moral, which are equally crucial for its success. The very motto of cooperation, 'each for all and all for each', signifies loyalty, trust, faith and fellowship. A cooperative is a perfect democratic institution of the members, for the members and by the members, and is based on the 'one member, one vote' system of decision-making.

A cooperative is based on certain values and principles of its own, which distinguish it from other forms of organisations. The International Cooperative Alliance (ICA) congress, held in Manchester on 23 September 1995, adopted the following seven principles:

1. Voluntary and open membership
2. Democratic member control
3. Members' economic participation and limited interest on share capital
4. Autonomy and independence
5. Provision of cooperative education, training and information
6. Cooperation among cooperatives
7. Concern for the community

The cooperative as a business organisation is similar in many ways, and different in many other ways, from other forms of organisations. The similarities are in the domain of roles and functions, and the differences in the manner in which the roles and functions are performed. Cooperatives are expected to reflect in their day-to-day practices the principles and values of cooperation, which emphasise, *inter alia*, equality, equity and mutual self-help.

Like any other business organisation, cooperatives are expected to ensure efficiency and profitability in their operations. But unlike other business organisations in the private and public sectors, the cooperative is both a social organisation and a business enterprise, and therefore, has a dual purpose: it serves both a social as well as an economic function. A cooperative manager must be concerned not only with the economic aspects, but also with the social obligations of his organisation.

Cooperatives have higher comparative advantage over other forms of organisations in involving people in their activities, in mobilising people's resources and political power for achieving their goals, in identifying and developing local leaders through democratic processes, in securing vertical and horizontal integration of production, procurement, processing and marketing functions, and in facilitating equitable distribution of benefits of development. All these advantages can help cooperatives in improving their competitive position as a business organisation vis-à-vis their competitors.

The economic rationale for a cooperative organisation lies in its endeavour to secure for its members advantages of modern technology and economies of scale. A cooperative organisation that does not want or cannot secure these two advantages is doomed to failure sooner or later. Theoretically speaking, there is hardly a better organisational structure than the cooperative for achieving the dual goal of social and economic development, but final success depends on the level of operational efficiency achieved (Dulfer 1974).

The major difference between cooperative management and management in other organisations is the greater need for cooperatives to involve their directors, members and staff in key positions in problem solving and decision-making. This is no small task. Managers trained in traditional management schools, when confronted with a difficult situation, feel they must think it through for themselves and find a solution. That is what they have learnt in management courses. Cooperative theory requires a different response. Cooperative managers are expected to take the problem out to the members and staff, and involve various interest groups in the development of solutions.

Cooperatives occupy an important place in India's rural economy in terms of their coverage of population and their share in the total supply of agricultural inputs, including credit. India can rightly claim to have the largest network of cooperatives in the world. In

India, as in 2002, there were 5.45 lakh cooperatives of all types, having a total membership of some 2,360 lakh and working capital of Rs 3,40,056 crore. They covered 100 per cent of India's villages and 67 per cent of all rural households in the country and accounted for 46.31 per cent of the total credit supplied in rural areas, 36.60 per cent of the total quantity of fertilisers distributed and 14.80 per cent of the total fertiliser produced in the country.²

Of all the types of cooperatives, the Anand-pattern dairy cooperatives are considered to have been most successful in serving their members, as well as society at large. Growth and development of milk producers' cooperatives in Kheda (Kaira) district of Gujarat, under the umbrella of the Kaira District Cooperative Milk Producers' Union Ltd, popularly known as AMUL, during the 1950s and the 1960s demonstrated the potential of cooperatives as an instrument of dairy development. The then Prime Minister Lal Bahadur Shastri was convinced about the suitability of the Anand model, and advised the GoI to set up an organisation under the chairmanship of V. Kurien to replicate the Anand-pattern dairy cooperatives in India. Consequently, the National Dairy Development Board (NDDB) was established in 1965 with its headquarters in Anand. The NDDB designed a programme called Operation Flood (OF) to replicate Anand-pattern cooperatives in the country. The OF is perhaps the world's largest dairy development programme in terms of its scope, coverage and longevity.

Despite their overwhelming importance in India's rural economy, most of the rural cooperatives are not financially viable due to mismanagement. Cooperatives need to be managed by professional managers, if they are to survive and grow in the wake of India's new economic policy characterised by deregulation, delicensing, privatisation and globalisation. Several obstacles hinder the professionalisation of management of agri-business cooperatives, such as the lack of professional managers having values and ethos congenial to cooperative management, excessive government control and interference, lack of good leadership, small size of business and, hence, the inability to hire professional managers, lack of performance-based reward systems, and internal work culture and environment not congenial to professionalisation of management.

VOLUNTARY AGENCIES/NON-GOVERNMENTAL ORGANISATIONS

Voluntary action in India is as old as the emergence of organised society itself. It originated as pure philanthropy or charity, and this motivation sustained the effort all through history. Even the establishment of the Indian National Congress (INC) in 1885 was a voluntary effort initiated by Allan Octavian Hume, acclaimed as its 'father and founder'. Addressing in an open letter to the graduates of Calcutta University in 1883, Hume gave a clarion call to the educated youth (Maheshwari 1987: 560–61):

You are the salt of the land. And if amongst you the elite, 50 men cannot be found with sufficient power of self-sacrifice, sufficient love for and pride in their country, sufficient genuine and unselfish heartfelt patriotism to take the initiative, and if

needs be, devote the rest of their lives to the cause, then there is no hope for India. Her sons must and will remain mere humble and helpless instruments in the hands of foreign rulers, for they who would be free themselves must strike the blow.

Emphasising the role of voluntary agencies in rural development, the Working Group on Block Level Planning (1978) (Vaishnav and Sundaram 1978; GoI 1978b: 45) shares the view that

...the country's social and economic problems are so vast and multifarious that the government's administrative machinery alone cannot tackle them. The establishment of a self-reliant society implies progressive curtailment of people's dependence on the government. From times immemorial, voluntary agencies in our country have played a significant part in promoting people's welfare.... The planning team at the district level should consult and actively seek the assistance of the voluntary agencies in their area while preparing the plan and selectively entrust to them the implementation of some sectoral plans in which they may have requisite expertise and experience.

VAs or NGOs can—and, in fact, some of them do—play a very important role in rural development. They can enthuse the rural population to prepare meaningful plans for rural development, as also to take part in their implementation. There are now quite a few VAs in the country which have the requisite technical and managerial resources available with them to undertake rural development projects, and to manage them successfully. For example, the Bhartiya Agro-Industrial Foundation (BAIF) of Urlikanchan (Maharashtra) has acquired a high level of technical competence in the field of animal husbandry, and is implementing a number of projects in this field in many areas in the country. Similarly, Sadguru Water and Development Foundation (SWDF) based in Dahod, Gujarat, is known nationally and internationally for its expertise in the field of natural resource management, particularly water resources development in poor tribal regions of the country. The Mysore Resettlement and Development Agency (MYRADA) of Bangalore has developed expertise in the fields of irrigation, wastelands development, watershed development and resettlement of released bonded labourers, and it has a number of projects in these fields in operation in the southern states of the country. Besides, there are many other NGOs doing good rural development work. There is a definite need for the government to support genuine voluntary effort in rural development.

At the national level, the Council for Advancement of People's Action and Rural Technology (CAPART) is the nodal agency responsible for promoting voluntary action in rural development. CAPART was registered under the Societies Registration Act, 1860, on 1 September 1986, with its headquarters in New Delhi. It aims at encouraging, promoting and assisting voluntary action for rural development. In pursuance of these objectives, CAPART makes available financial assistance to VAs/NGOs under the following schemes:

1. Promotion of voluntary action in rural development
2. Development of Women and Children in Rural Areas (DWCRA)

3. Accelerated Rural Water Supply Programme (ARWSP)
4. Central Rural Sanitation Programme (CRSP)
5. Organisation of beneficiaries of anti-poverty programmes
6. IRDP
7. JRY consisting of watershed conservation and development programmes, village link roads, and rural housing and social forestry
8. Advancement of Rural Technology Scheme (ARTS)
9. Panchayati Raj (PR)
10. Rehabilitation of disabled people

Its funds mainly consist of grants from the Union Ministry of Rural Development. The council can also obtain grants from various central and state government departments, and accept donations and contributions from other sources. CAPART has set up six Regional Coordination Committees (RCCs) at Jaipur, Ahmedabad, Hyderabad, Bhubaneswar, Guwahati and Lucknow to decentralise its functioning. These committees have been given the mandate to sanction and monitor projects involving an outlay of Rs five lakh or less.

The 1990s have witnessed a proliferation of development initiatives taken by NGOs. It is no longer an issue of concern for the elite. Now, development action is perceived as an alternative career option even by the common person. The idea of undertaking socially meaningful activities as a full-time occupation is not an alien concept for a large majority of those working with NGOs. However, the ideological fervour, or a sense of nationalism in society as a whole, has been waning gradually over time.

Large-scale support from the government has also necessitated the routinisation of development interventions. This has also been encouraged by the fact that many common people, who are not innovators, are involved in delivery of goods and services, which are not adequately catered to by the state or market institutions.

Most new organisations that are coming up now are those promoted by the common people. They do not attract highly trained or highly competent personnel. Most old, large organisations, which attracted some of the best brains during the phase of innovation, are either saturated at the top (with a small group, if not one, of development innovators at the helm of affairs), or have routinised functions to an extent that they have ceased to remain attractive for the competent youth. However, the liberalised market economy now offers much more attractive opportunities to the talented youth, as compared to the development initiatives that they had even a few years ago.

The present generation of NGO workers has a very different set of aspirations and motivation from those of the leaders of the NGO sector a decade ago. Many of the norms of personal need (gratification, accountability and transparency) evolved around people of high social motivation. These norms need changes in the present context, with people having different sets of motivations and aspirations.

With development funding agencies refocussing their attention on supporting small organisations, small NGOs have received a boost. This has also made it necessary for funding agencies to take a more proactive role than they did earlier. Many of them now play the role of a resource centre, contributing to the planning and implementation of programmes and competence building of the NGO teams.

The known processes of development interventions have become more complex with enhanced understanding of the development process itself. Though in the 1950s, service delivery was the focus of development initiatives, by the 1960s, development activists were talking about transfer of technology. In the 1970s, it was recognised that technology transfer remained inadequate, unless backed with competence building. In the 1980s, the initiatives concentrated on multiple or comprehensive sets of services, backing up technology transfer with training, credit and market linkages. But in the 1990s, it was recognised that the development inputs, to be sustainable in an eco-friendly manner, have to have much more than this. The ability of the NGOs to deliver high quality development services had also been recognised by the state machinery. This had also led to fairly high expectations from these organisations.

But now most of the NGOs are left with poor quality manpower to address this even more complex task. This may have serious implications for the quality of services being delivered by these organisations. Though substantial weightage is being given to building the competence of development teams by various support agencies, developing human resources is also being seen as one more task by a large majority of these organisations. Further, most of NGOs are dominated by one person, often their founders, and there is lack of professionalism in their functioning and management, leading to the misuse of public money.

CORPORATIONS AND RURAL DEVELOPMENT

Corporations could make a significant contribution to rural development in India, through establishing and/or supporting institutions that bring corporate resources, new technologies, modern management and expertise to bear on the problems of rural development. There are, at least, the following four reasons why involvement of corporations in rural development is desirable (Raymond 1996):

1. *Win-win Outcome*: Promoting the involvement of corporations in rural development is a classic 'win-win' strategy. Corporations gain by demonstrating their commitment to rural communities, thereby building their credentials as good corporate citizens. This improves their image in the marketplace and contributes to their commercial success. The rural people benefit from new expertise and resources used by the corporations to solve their problems and fulfil their felt needs. The government wins because the corporations supplement the limited public resources available for rural development.
2. *Stable Democracy*: The involvement of business houses in rural development and the emergence of non-profit institutions, such as charitable trusts and societies boost institutional pluralism and people's participation in the policy-making process. Indeed, independent private institutions are vital to ensuring the stability of democratic processes in times of political change and economic crisis.
3. *Sustainability*: Government-funded rural development programmes are vulnerable to changes in policy and budgetary allocations. Involvement of private corporations

and their executives, who are not affected by political changes, in rural development projects could help make those projects sustainable. Sustainability depends on both the availability of funds as well as the commitment of institutions and their employees over the long term. Commitment of government employees to rural development is often short-lived, as compared to that of their counterparts in the private sector development organisations. How many Kuriens of Anand and Anna Hazares of Ralegon Siddhi can you find in government organisations?

4. *Locking-in Economic Reforms*: When economic reforms fail to bring any real benefits to rural people, rural voters may throw the political party which introduced the reform out of power. Cuts in subsidies on fertiliser, irrigation water, electricity and withdrawal of social welfare programmes can erode the electoral support for reforms. If policy makers respond by slowing down the process of reforms, the result may be a decline in investment and the rate of economic growth. In contrast, successful economic reforms make private corporations and enterprises more robust, and then corporate voluntarism delivers the benefits of growth and prosperity to the underprivileged and poor people.

In India, the government provides many incentives to the corporate sector for making contributions to the cause of rural development. Through the Finance Act 1978, two new Sections, 35 CC and 35 CCA, were added to the Income Tax Act 1961. These sections provide fiscal incentives to corporations and cooperatives to undertake rural development activities, directly as well as indirectly to promote such activities through rural development agencies approved by a prescribed authority notified by the Central Board of Direct Taxes (CBDT). These sections stipulate that the expenditure incurred by a corporation or a cooperative on rural development activities would be considered as normal expenditure, and would be deductible from the income of the tax payer (donor) to compute the taxable profit. The Finance Act of 1983 has amended Section 35 CCA to provide for the setting up of a National Fund for Agricultural Development (NFAD) for providing financial support to VAs to undertake rural development work. However, Section 35 CC has been retained, and private companies and business houses can avail the tax concession by undertaking rural development activities directly.

Fortunately, India's corporate sector, with its powerful economic status, is able to influence the policy makers in the country. However, most business houses in the past have confined their roles to their business and in maximising profits. Nevertheless, some business houses do make attempts to address the problems of the community. This is, however, in no way adequate. When the majority of India's population is struggling for survival, how can corporations turn a blind eye and plan for their progress and prosperity? The corporate sector cannot continue to prosper unless the economy and quality of life of our common people is improved.

In all the programmes implemented by both the governmental organisations and the NGOs, good management is the critical input for success. It is here that the corporate sector can play a major role. Transfer of management skills from business houses to the agencies in charge of rural development can easily enhance the productivity of natural resources.

Business houses like the Tatas, Godrej, Hindustan Unilever, Escorts, Lupin, Indian Petrochemicals Corporation Limited (IPCL), Usha Martin, Excel and Arvind Mills have established their own trusts to take up agricultural and rural development work in selected rural areas. There are other industrial houses, such as the Mafatlal Group, which have been funding professionally managed public trusts. The Confederation of Indian Industry (CII) is playing an important role by persuading medium-sized companies to undertake rural development work in their neighbourhoods, where basic facilities and amenities are lacking and the people are poor.

Business houses with experience in management can assist the rural people directly, or through local voluntary organisations, to generate employment and to improve the quality of life. Some of the important areas where industry can support the development of the rural areas are as follows:

1. Arranging financial assistance in the form of grants and loans to invest in various income and employment generating activities.
2. Direct procurement of produce as industrial raw material, or for the consumption of their employees; in this process, middlemen can be eliminated at various levels.
3. Imparting management skills to field workers and village leaders involved in rural development to improve their project management skills.

To begin with, a corporate house can start work in villages where its plants are located. By constructing roads, installing hand pumps, starting primary schools and a health centre, corporates can not only earn goodwill, but it will also help them in establishing good relationships with the people.

Subsequently, corporates can spread their work to nearby areas. A good example to emulate is furnished by the Tata Steel, which started rural development work in rural areas in Jamshedpur in erstwhile parts of Bihar (now Jharkhand). As a result, the company earned a lot of goodwill of the beneficiaries as well as of the government.

The private sector can also join hands with government agencies like the Khadi and Village Industries Commission (KVIC) and CAPART to develop rural areas. These agencies not only provide cheap funds, but their wide network can also prove useful to new entrants.

After having said this, we would like to highlight some points. First, corporations do not come forward spontaneously to take up rural development activities; public policy must create a congenial legal and policy environment for them to get into this arena. Tax relief and other incentives for rural development endeavours are pivotal. Second, both the corporations and the community must be partners in identifying the felt needs, and formulating programmes that are beneficial to both the parties involved. Third, socially oriented corporations having good credentials and hands-on experience will need to provide leadership and advice to other interested companies and enterprises. Last, leaders in the public and private sectors must support the establishment of well-managed non-profit rural development organisations. The GoI now encourages the private corporations to participate in many areas of rural development including creating basic infrastructure through public private partnership (PPP) arrangements.

MAIN POINTS

1. By 'organising for rural development', we mean: (a) designing appropriate, organisational structures; (b) facilitating desirable human behaviour within the organisation and (c) organising the clientele of a programme, such that the stated goals of the organisation and/or the programme under consideration are achieved as efficiently as possible.
2. The term 'organisation' is also used to refer to any government or governmental subdivision or agency, corporation, trust, estate, partnership, cooperative or association. In this sense, it connotes various forms of organisation. An organisation becomes an institution when nobody is indispensable for its survival and growth, that is, when it becomes self-sustaining, irrespective of its employees who leave it or who join it.
3. An organisation performs a variety of functions. The failure to organise properly can result in wasted energy and resources, the inability to accumulate knowledge, a dependency on the presence of certain people for existence and a failure to provide incentives for contribution by its members.
4. There are several organisational models developed in western countries to help guide managers in designing and managing organisations. The important models include the Rational Model, the Natural-System Model, the Classical Model, the Participative Model, the Socio-Technical Model and the Cognitive Model. These models have limited relevance in India's context because of its mixed economy and highly heterogeneous socio-economic conditions. In view of this, no single model is appropriate in India's context.
5. In India, there coexist many different forms of organisations in the rural sector. Of all the organisations, the government has been, still is, and will continue in the future to be the most important actor in the field of rural development. However, it alone cannot effectively tackle all the problems of rural development. Panchayati raj institutions (PRIs), cooperatives, voluntary agencies (VAs), and private companies and corporations can—and, in fact, most of them do—play important roles in the process of development by complementing and supplementing the functions and activities of the government.
6. The role of the government should be to define the roles of other agencies, coordinate, and, if necessary, regulate their activities, and provide such infrastructural facilities and services as cannot be provided by other agencies. Above all, the government should help organise the rural poor within an institutional framework that can give them access to the nation's economic and political systems.
7. PRIs can help achieve the goal of local self-governance, thereby realising Gandhiji's dream of *swaraj*. Cooperatives that are owned and controlled by their members and managed professionally can ensure to the producer a fair share in the consumer's price, and supply of good quality products at reasonable prices to the consumer. Non-governmental organisations (NGOs) have a special advantage over other forms of organisations in educating and training rural people, in enlisting their participation in rural development programmes, and in working closely with them.

Corporations could make a significant contribution to rural development through establishing and/or supporting institutions that bring corporate resources, new technologies, modern management and expertise to bear on the problems of rural development.

NOTES

1. For details of the classic prisoner's dilemma, see Singh and Shishodia (2007: 100–02).
2. <http://ncui.nic.in/stat.htm>. Accessed in March 2008.

QUESTIONS FOR DISCUSSION

- 13.1. Differentiate between an organisation and an institution, citing an example. Which one is better in India's context and why?
- 13.2. Drawing upon the theoretical organisational models presented in this chapter and using an eclectic approach, outline the salient features of an ideal organisational model for rural development in India.
- 13.3. Write a short critique of the following organisations vis-à-vis an ideal organisation of rural development:
 - (i) Government as an organisation
 - (ii) Panchayat raj institutions (PRIs)
 - (iii) Cooperatives
 - (iv) Non-governmental organisations (NGOs)/Voluntary Agencies (VAs)
 - (v) Private companies/corporations

14 Financing Rural Development

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

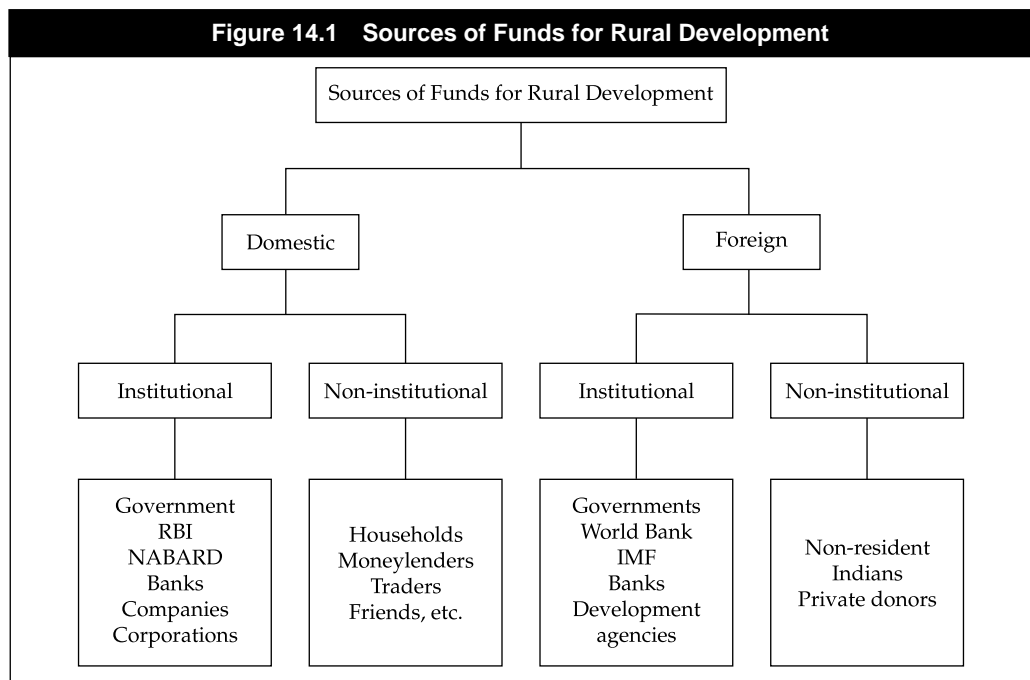
- list the purposes for which capital is required and the major sources of funds for rural development;
- list the various domestic institutional sources of financing rural development projects and critically examine their role;
- illustrate the role of non-institutional agencies in financing rural development projects;
- describe how deficit financing can help mobilise funds for rural development projects and
- critically examine the role of foreign sources of funds for rural development, especially, loans, grants and foreign direct investment.

INTRODUCTION

The capital requirements of agricultural and rural development are enormous. Capital is required not only for on-farm investment to improve the production apparatus and to provide various farm inputs and services, but also for a vast array of supportive infrastructural facilities, such as power, roads, transportation, communication, markets, storage, education, training, research and extension. Capital is also

required for the creation of non-farm jobs through the provision of factories and their complementary machinery and equipment. There are no precise estimates available about the capital requirements of agricultural and rural development in India. But the amount required is in thousands of crores of rupees. Funds for investment in rural development projects come from two main sources: domestic and foreign. Further, in each category, there are institutional and non-institutional sources (Figure 14.1). Domestic institutional sources include the government, government undertakings including public enterprises, the Reserve Bank of India (RBI), National Bank for Rural Agricultural and Development (NABARD), cooperative banks, commercial banks and Regional Rural Banks (RRBs), and private companies and corporations. Non-institutional sources include households, moneylenders, traders, and friends and relatives. Foreign institutional sources include foreign governments, development agencies, the World Bank, the Asian Development Bank (ADB), the International Monetary Fund (IMF), foreign banks, multinational corporations, and so on. Foreign non-institutional sources include Non-Resident Indians (NRIs) and foreign nationals.

In countries like India, which are both poor and nationalistic, neither sacrifices from current consumption nor heavy reliance on foreign aid and investment is popular with the political leaders and electorate as means of financing development. However, there are no other alternatives for the government but to follow these painful paths to development. Without a certain amount of national sacrifice, economic development will not occur. The sacrifice may take one, more or all of the following forms:



Source: Author.

1. Working harder and more efficiently.
2. Saving voluntarily to finance development investment, public or private.
3. Paying higher taxes to finance development investment.
4. Controlling inflation, with whatever hardships it may cause to the people (deficit financing).
5. Encouraging foreign investment, no matter what temporary sacrifices of opportunities for national businessmen may be involved.
6. Accepting foreign aid, with whatever commitment is required as a condition for receipt of such aid.
7. Changes in sectoral terms of trade.

Working harder and better is not 'finance' in the ordinary sense, and it will not raise standards of living very much unless accompanied by capital formation. Therefore, the government depends on the other six sources of financing development.

In this chapter, we briefly discuss the role of domestic and foreign sources of funds for rural development, and examine their suitability in the Indian context.

DOMESTIC INSTITUTIONAL SOURCES

Domestic institutional sources of rural credit include the government, the RBI, NABARD, cooperative banks, commercial banks (CBs), RRBs and Self Help Groups (SHGs). We now briefly discuss the role of each of these agencies.

Central and State Governments

The government in the past has been, still is, and in future will continue to be the most important source of funds for rural development in India. At the national level, the Union Ministry of Finance is responsible for the mobilisation and administration of financial resources for various purposes, including rural development. It also regulates the expenditure of the government, including transfer of resources to the states. Power to raise and disburse public funds has been divided under the Constitution of India between the Union and state governments. The sources of revenue for the Union and states are, by and large, mutually exclusive, if shareable taxes and duties between the two are excluded. The Constitution provides that: (a) no tax can be levied or collected except by the authority of law; (b) no expenditure can be incurred from public funds except in the manner provided in the Constitution; and (c) executive authorities must spend public money only in the manner sanctioned by the Parliament in the case of the Union and by the state legislatures in the case of states.

All receipts and disbursements of the Union are kept under two separate heads, namely, the Consolidated Fund of India (CFI) and the Public Account of India (PAI). All revenue received, loans raised and money received as the repayment of loans by the Union form

the Consolidated Fund. No money can be withdrawn from this fund except under the authority of an act of Parliament. All other receipts, such as deposits, service funds and remittances go into the PAI, and disbursements therefrom are not subject to the vote of the Parliament. To meet unforeseen needs not provided in the Annual Appropriation Act, a Contingency Fund of India has been established under Article 267(1) of the Constitution. The Indian Constitution provides for the establishment of a Consolidated Fund, a Public Account and a Contingency Fund for each state.

The main sources of the Union tax revenue are customs duties, Union excise duties, corporate and income taxes. Non-tax revenues largely comprise interest receipts, including the interest paid by the railways and telecommunications ministries, dividends and profits. The main heads of revenue in the states are taxes and duties levied by the respective state government, a share of taxes levied by the Union and the grants received from the Union. Property taxes, octroi and terminal taxes are the mainstay of local finance. Devolution of the resources from the Union to the states is a salient feature of the system of federal finance of India. Apart from their share of taxes and duties, state governments receive statutory and other grants, as well as loans for various development and non-development purposes.

An estimate of all anticipated receipts and expenditure of the Union for the ensuing year is laid before the Parliament. This is known as the Union Budget, and it covers the central government's transactions of all kinds in and outside India occurring during the preceding year, the year in which the statement is prepared, as well as the ensuing year, or the 'Budget Year', as it is known.

Government funds are made available in the form of investment, grants, subsidies and loans. Allocations are made through the annual budgetary process. The total public (government) sector plan outlay and expenditure on agriculture and allied activities, including rural development and special area programmes under the five year plans are presented in Table 14.1. As shown in the table, the total expenditure on agriculture and allied activities in the public sector since the beginning of the planning era (1951–52) until the Ninth Five Year Plan (1997–2002) aggregated to Rs 2,18,540 crore. As a percentage of the total plan expenditure in the public sector, it varied from around 12 per cent to 17 per cent, with an overall average of 15.22 per cent for the entire period. In the Ninth and Tenth Five Year Plans, the share of agriculture and allied activities, including rural development, of the total public sector Plan outlay was about 14 per cent and 13 per cent, respectively. In the Eleventh Five Year Plan, the total outlay for agriculture and allied activities, including rural development, was Rs 4,63,779, which accounted for 14.7 per cent of the total public sector Plan outlay (Government of India [GoI] 2008).¹

In India, the government is probably the oldest institutional source of rural credit. The government provides financial assistance by granting loans to the cultivator under: (a) the Improvements Loans Act of 1883 and (b) the Agriculturists' Loans Act of 1884. Such loans are known as *taccavi* loans. The act of 1883 authorises the grant of long-term loans by the taluka/tehsil level officers of the government for effecting permanent improvements on land, such as construction of wells, land levelling, protection of lands from floods or erosion, and so on. Such loans are generally granted for periods extending over 25 years, on the security of landed property at a relatively low rate of interest.

Table 14.1 Outlay and Expenditure in Public Sector on Agriculture and Allied Activities in India's Five Year Plans

Five Year Plan	Agriculture and rural development		Total		<i>(Rs in crore)</i> Share of agriculture and allied activities in total outlay and expenditure (%)	
	Plan outlay	Actual expenditure	Plan outlay	Actual expenditure	Plan outlay	Actual expenditure
	First Plan (1951–56)	354	290	2,378	1,960	14.9
Second Plan (1956–61)	510	549	4,500	4,672	11.3	11.7
Third Plan (1961–66)	1,086	1,089	7,500	8,577	14.5	12.7
Annual Plans (1966–69)	1,037	1,107	6,665	6,625	15.6	16.7
Fourth Plan (1969–74)	2,728	2,320	15,902	15,779	17.1	14.7
Fifth Plan (1974–79)	4,766	4,865	39,322	39,426	12.1	12.3
Annual Plan (1979–80)	1,815	1,996	12,601	12,176	14.4	16.1
Sixth Plan (1980–85)	12,539	15,201	97,500	1,09,292	12.9	13.9
Seventh Plan (1985–90)	22,233	31,509	1,80,000	2,18,730	12.3	14.4
Annual Plan (1990–91)	9,142	8,542	64,717	58,369	14.1	14.6
Annual Plan (1991–92)	10,058	9,060	72,317	6,475	13.9	14.0
Eighth Plan (1992–97)	63,642	23,251	4,34,100	1,60,933	14.7	14.4
Ninth Plan (1997–2002)	1,20,997	1,18,761	8,59,200	7,92,740	14.1	15.0
Tenth Plan (2002–07)	2,01,740	1,37,665	15,25,639	NA	13.2	NA
Eleventh Plan (2007–12)	4,63,779	NA	36,44,718	NA	14.7	NA

Source: GoI (2007a,² 2008³).

Note: Includes agriculture, animal husbandry and dairy research and education, forestry and wildlife, plantation, agricultural marketing and rural godowns, food storage and warehousing, rural development, cooperation and special area programmes.

Under the act of 1884, short- and medium-term loans are granted by the government to meet the current agricultural needs, such as the purchase of seeds, fertilisers, and small tools and implements. Such loans are repayable over a period of six months to one year, mostly after the harvest. The rate of interest charged on these loans is lower than the rate charged by CBs and cooperatives.

The record of *taccavi* loans has been rather poor. Some of the drawbacks are the inadequate amount, inordinate delays in sanctioning the loan, lack of supervision, poor recovery and lack of coordination. In view of the rapidly expanding role of cooperative credit institutions, CBs and RRBs in the sphere of rural credit, the relative importance of *taccavi* loans has been declining over the years.

With a view to encouraging individuals, corporate and non-corporate bodies to participate in the national effort of rural development, a National Fund for Rural Development (NFRD) was established by the Union Ministry of Rural Development in February, 1984. The fund is managed by a committee under the chairmanship of the Prime Minister. Donations made by all categories of taxpayers to the NFRD are deductible while computing taxable income, under Sections 35 CCA and 80 CCA of the Income Tax Act, 1961. The NFRD projects can be executed through an implementing agency, having the legal status of

1. an irrevocable public charitable trust registered under the Income Tax Act, 1961;
2. a society registered under the Societies Registration Act, 1860, or under any law corresponding to that act in force in any part of India;
3. a company incorporated under Section 25 of the Companies Act, 1956; and
4. a corporation established by or under a central/state act concerned with the development of rural areas.

Donors, while making donations, may recommend their preference for the area or locality and the rural development programmes for which the donations may be utilised, as also the implementing agency through which the programme may be undertaken and implemented. The recommendations, if any, of the donors, are given due consideration to the extent deemed appropriate by the government/management committee of the fund.

The Reserve Bank of India (RBI)

The RBI was established under the Reserve Bank of India Act, 1934, on 1 April 1935, and nationalised on 1 January 1949. The RBI is the sole authority for issue of currency in India, other than one rupee coins and subsidiary coins and notes. As the agent of the central government, the RBI undertakes distribution of one rupee notes and coins as well as small coins issued by the government. The RBI acts as the banker to the central government, state governments, CBs, state cooperative banks (SCBs), and some of the financial institutions. It formulates and administers monetary policy, with a view to ensuring stability in prices, while promoting higher production in the real sector through proper deployment of credit. The RBI plays an important role in maintaining the stability of the exchange value of the Rupee and acts as an agent of the government in respect of India's membership of the IMF. The RBI also performs a variety of developmental and promotional functions.

The RBI was a pioneer central bank in the sphere of rural credit. Its founding act of legislation and subsequent amendments entrusted to it the responsibility for enlarging

the availability of rural credit. The bank shouldered this responsibility rather reluctantly until 1947, when, after independence, this responsibility was reinforced and became a major responsibility of the bank. The activities of the RBI in the sphere of rural credit can be broadly divided into three categories: (a) financing functions; (b) promotional, advisory and coordinating functions; and (c) regulatory functions. The first category covers the provision of long-term loans to state governments from the National Agricultural Credit (Long-Term Operations) Fund to enable them to contribute to the share capital of the cooperative credit institutions, provision of medium-term loans to the SCBs to refinance the seasonal crop (short-term) loans of credit cooperatives, granting medium-term loans to the SCBs from the National Agricultural (Stabilisation) Fund to enable them to repay their short-term loans to the RBI under conditions of drought or famine, and short-, medium- and long-term loans to NABARD. Its promotional and coordinating functions include formulation of programmes for cooperative credit under the five-year plans, annual reviews of the progress of various credit schemes, and assistance to the central and state governments, and cooperative credit institutions in tackling their problems in implementing various credit schemes. The regulatory functions include establishing credit limits and credit norms for various purposes, and control of advances by commercial and cooperative banks.

Though the flow of credit to the agricultural sector has improved from Rs 11,202 crore in 1991–92 to Rs 1,57,500 crore in 2005–06, the RBI perceives that investment in agriculture, particularly non-farm investments in agriculture, has not kept pace with demand to encourage credit flow to the agricultural sector.

National Bank for Agricultural and Rural Development (NABARD)

A major landmark in the history of development of rural credit in India was the establishment of NABARD in July 1982, by merging the Agricultural Refinance and Development Corporation, the Agricultural Credit Department of the RBI, and the Rural Credit and Planning Cell of the RBI. The RBI owns 50 per cent of the share capital of NABARD, and the rest is held by the GoI. As on 31 March 2007, NABARD had a share capital of Rs 2,000 crore. Besides the share capital, the other major sources of funds of NABARD consisted of

1. reserve and surplus (Rs 7,208 crore);
2. National Rural Credit (Long-Term Operations) Fund (Rs 13,244 crore);
3. National Rural Credit (Stabilisation) Fund (Rs 1,533 crore);
4. borrowing from the GoI (Rs 382 crore); and
5. borrowing from CBs (Rs 2,500 crore).

Its total funds stood at Rs 81,220 crore, which is a lot of money by any standards (NABARD 2007). The main functions of NABARD include refinance (short-, medium- and long-term) to the cooperative banks and RRBs, refinance to CBs against term lending (medium- and long-term), short-term accommodation for special cases, and overall policy,

planning, coordination and monitoring of all agricultural and rural lending activities in the country. Besides, it also undertakes training, research and consultancy relating to rural credit. The sources of NABARD's funds mainly consist of the National Rural Credit (Long-Term Operations) Fund and the National Rural Credit (Stabilisation) Fund transferred to it by the RBI at the time of its establishment, and annual contributions from the RBI, and borrowings from the RBI, the GoI and the market. The GoI also provides to NABARD funds received from the World Bank and other external agencies under various credit projects.

The main objective of the establishment of NABARD was to provide institutional credit through banks for promotion of agriculture, small-scale industries, cottage and village industries, handicrafts and other rural crafts and allied activities in rural areas. NABARD provides refinance facilities to CBs, SCBs, State Land Development Banks (SLDBs, now known as State Cooperative Agricultural and Rural Development Banks [SCARDBs]) and RRBs, to enable them to advance short-, medium- and long-term loans for specified bankable projects. CBs and SLDBs are supported only for term (medium and long) loans. Financial assistance is also provided by NABARD to state governments to enable them to contribute to the share capital of cooperative credit institutions. From the financial year 1995–96, NABARD has also entered into the area of direct financing. Initially, it directly financed big hightech projects only.

Hitherto, the farm sector had been the major focus of rural development. The non-farm sector (NFS) has of late assumed importance in view of its potential for employment generation in rural areas. Several refinements in policies relating to credit for the farm sector, as well as new initiatives relating to the NFS have been introduced by NABARD. Even after considerable expansion of the network of the formal credit institutions, certain sections of the population have not been reached. The bank has actively supported innovations in credit delivery, to extend the outreach of credit to these sections.

NABARD works in close cooperation with various central government agencies to refinance various priority schemes, such as watershed development and management, dry land farming, wastelands development, forestry, aquaculture, the Integrated Rural Development Programme (IRDP) and other poverty alleviation programmes. Besides, it has made quite a few innovations in both the structures and methods of delivering rural credit. A few of its innovative schemes include Vikas Volunteer Vahini (VVV) programme, promotional grants to Voluntary Agencies (VAs) and NGOs, establishment of a cooperative development fund, establishment of a Rural Infrastructure Development Fund (RIDF), promotional schemes for NFSs and financing of rural health services.

In the Union Budget 2007–08, the government announced several measures to improve the resource base of NABARD. For example, NABARD is allowed to raise Rs 5,000 crore by issuing 'Rural Bonds', which will be guaranteed by the government and eligible for suitable tax exemptions. The corpus of the RIDF-XIII has been raised to Rs 12,000 crore for 2007–08 from Rs 10,000 crore for 2006–07. A separate window for rural roads is to continue under RIDF-XIII with a corpus of Rs 4,000 crore. In the Union Budget 2008–09, the corpus of the RIDF-XIV was further raised to Rs 14,000 crore. Besides, a fund of Rs 5,000 crore is to be created in the NABARD in 2008–09 to enhance its refinance capacity for the micro, small and medium enterprises.

A Financial Inclusion Fund (FIF) with a corpus of Rs 500 crore is to be set for meeting the cost of developmental and promotional interventions and a Financial Inclusion Technology Fund (FITF) with a corpus of Rs 500 crore to meet the cost of technology adoption with NABARD. The initial amount for these funds is to be contributed by GoI, RBI and NABARD (NABARD 2007: 22).

Cooperative Credit Agencies (CCAs)

Cooperative credit societies entered the field of rural finance with the adoption of the Cooperative Societies Act of 1904. Since then, the government has been making deliberate attempts to nurture the cooperative movement in the country in the larger interests of the rural people. Credit cooperatives have been recognised as the best institutions to provide rural credit to the farmer because they satisfy all the important criteria of sound agricultural credit.

Credit cooperatives have many advantages over other sources of credit. First, being located right in the rural areas where their borrowers reside, they are in close proximity to their clients. Second, they have more intimate knowledge of the character and abilities of their members than any other financial institution. Third, they can easily supervise the use of credit, so that it is used for productive purposes. Fourth, the credit provided by the cooperative societies is bound to be cheap, due to their lower administrative costs and lower cost of their funds. Last, the credit provided by the credit cooperatives is neither too rigid nor too elastic; it is also safe, as it assists, and does not hamper, the borrowers' stability and productive capacity.

Despite these positive aspects, cooperative credit suffers from the following weaknesses:

1. The tendency of cooperative credit has been to flow mainly towards larger cultivators. The small and marginal farmers have been handicapped in their access to cooperative credit, both for current inputs and viable investment.
2. The experience of cooperative credit in India shows that despite improvements over the years, the proportion of cooperative credit to total borrowings of cultivators has been declining in the last few years.
3. The orientation of cooperative credit to production needs has, by and large, been inadequate.
4. The cooperative credit system has been vulnerable to political interferences and rigid bureaucratic controls.
5. A large number (over 65 per cent) of primary agricultural credit societies are neither viable, nor even potentially viable, and must be regarded as inadequate and unsatisfactory agencies for dispensing production-oriented credit.
6. Cooperative credit has frequently fallen short of standards of promptness, adequacy and dependability. This has been due to various reasons, including paucity of

resources, lack of eligibility, time consuming and cumbersome procedures, poor management and efficiency in working methods.

7. Coordination between the authorities and agencies in charge of cooperative credit, and those in charge of supplies and extension under agricultural programmes, has generally been inadequate.

The cooperative credit system in the country comprises short-term and long-term credit structures. The short-term cooperative credit structure comprises 28 SCBs, 366 District Central Cooperative Banks (DCCBs) and over 92,000 Primary Agricultural Credit Societies (PACS, including Large-sized Adivasi Multi-Purpose Society [LAMPS] and Farmers Service Society [FSS]), operating at the apex, middle and ground levels, respectively.

The long-term cooperative credit structure in the country consists of 19 SCARDBs, originally known as Land Mortgage Banks/Land Development Banks, having a unitary structure in eight states and a federal/mixed structure in 11 states, operating through 2,960 units (including 733 Primary Cooperative Agricultural and Rural Development Banks [PCARDBs]). In Andhra Pradesh, there is an integrated structure, wherein the units of the short-term structure provide all types of agricultural credit under a 'single window' credit delivery system. In the north-eastern region, only three states are served by the long-term structure.

As far as the flow of ground level agricultural credit is concerned, the share of the cooperative banks was about 21 per cent in 2006–07, whereas the commercial banks accounted for about 69 per cent and RRBs for about 10 per cent (Table 14. 2). During the period, 2002–03 to 2006–07, the flow of credit to agriculture and allied activities in the country registered a growth of 32 per cent in crop loans and 46 per cent in terms loans. However, over the period 2002–03 to 2006–07, the share of cooperative banks in total ground level flow of credit declined from about 34 per cent to about 21 per cent (NABARD 2007: 25–26). As per the Union Budget 2008–09, the flow of institutional credit for agriculture was expected to reach the level of 2,40,000 crore by 31 March 2008.

Cooperative credit societies and cooperative banks suffer from several internal and external problems. There is no formal system of corporate governance extant in cooperative banks. As a result, a number of cooperative banks have come to be the hot bed of political patronage, unscrupulous financial practices and gross mismanagement. In certain cases, these have become private fiefdoms of individual political and other

Table 14.2 Flow of Institutional Credit to Agriculture and Allied Activities in India by Agency

Agency	(Rs Crore)				
	2002–03	2003–04	2004–05	2005–06	2006–07
Cooperative banks	23,636	26,875	31,231	39,404	42,480
RRBS	6,070	7,582	12,404	15,223	20,434
CBs	39,774	52,441	81,481	1,25,477	1,40,382
Other agencies	80	84	193	382	NA
All	69,560	86,981	1,25,309	1,80,486	2,03,296

Source: NABARD (2007: 26).

functionaries sustaining themselves on public money. In the past 15 years or so, over a dozen cooperative banks have been defrauded. On the financial landscape, cooperative banks, politicians and scamsters have come to form a destructive antisocial nexus, thanks to the bad governance (Law 2002: 46). Consequently, most of the cooperative credit societies and banks are not financially viable.

In view of all this, there is need for putting effective corporate governance in place in cooperative banks. The RBI has recently taken some steps to improve the governance in the cooperative sector (RBI 2000). In January 2006, the GoI announced a package for the revival of short-term rural cooperative credit structure involving financial assistance of Rs 13,596 crore. NABARD has been designated as the implementing agency for the purpose. A Department for Cooperative Revival and Reforms has been set up in NABARD for facilitating the implementation process. States are required to sign a Memorandum of Understanding (MoU) with NABARD, committing to implement the legal, institutional and other reforms as envisaged in the revival package. As of 2007, 21 states and three Union Territories had agreed to implement the package.⁴

Commercial Banks (CBs)

The commercial banking system in India consists of scheduled banks (including foreign banks) and non-scheduled banks. Most of the scheduled banks are in the public sector and they account for about 80 per cent of the deposits of all scheduled banks. In July 1969, 14 major CBs were nationalised and another six in 1980. Now there are 28 public sector banks having a mandate to provide credit to rural people. In addition, 246 private CBs are also operating in the country. These CBs provide short-, medium- and long-term credit for various agricultural and rural development activities. Until the nationalisation of major CBs in 1969, the official policy was to give a fillip to the cooperative system as the channel best suited for institutional credit for agriculture. Before their nationalisation, CBs supplied only a negligible share of rural credit: 0.9 per cent in 1951–52 and 0.6 per cent in 1961–62. Even after nationalisation, they were a bit hesitant in going full steam ahead in financing agriculture; four years after nationalisation, in 1973–74, their share in total rural credit was only 5 per cent.

However, since the mid-1990s, there has been a substantial increase in their involvement in agricultural lending. The total number of branches of all CBs in India in 2006 was 69,616 and their share in direct agricultural advances went up from 1.3 per cent of bank credit in July 1969, to 13.2 per cent in March 1984, to 33.2 per cent in March 1995 and 69 per cent in 2006–07.

In the years to come, the Indian banking system has a strategic role to play in increasing the national savings rate, in canalising the available savings to finance high priority investments, in better utilisation of available capacities both in agriculture and in industry through adequate supply of credit as working capital, and in promoting the cause of social justice by increased emphasis on the credit needs of the hitherto neglected sectors and sections of population, as also by providing finance for such anti-poverty programmes as the IRDP.

Regional Rural Banks (RRBs)

The RRBs were established consequent to the acceptance by the GoI of the recommendations of a Working Group on rural banks appointed by the Union Finance Ministry in July 1975, under the chairmanship of M. Narasimham. The first five RRBs were established on 2 October 1975, following the promulgation of the RRBs ordinance by the GoI on 26 September 1975. The ordinance was subsequently replaced by the Regional Rural Bank Act, 1976. The issued and paid up share capital of each RRB at Rs 25 lakh (subsequently raised to Rs 100 lakh in March 1996), is held by the GoI, the sponsor bank and the concerned state government in the proportion of 50:35:15. The management of each RRB is vested in a board of directors headed by a chairman (usually an officer of the sponsor bank and appointed by the GoI). As in March 2007, there were 196 RRBs, covering 436 districts, with a network of 14,500 branches in the country. Their loans and advances stood at Rs 20,434 crore in the year 2006–07, which was about 10 per cent of the total credit disbursed to the agriculture and allied activities in the year.

Initially, RRBs were mandated to cater to the credit needs of the weaker sections of the rural community comprising small and marginal farmers, agricultural labourers, artisans and small entrepreneurs. With effect from December 1993, their mandate has been expanded to include non-target group borrowers also. These RRBs were intended to be low-cost 'small man's banks', combining the advantages of cooperatives (close rapport with villagers) and CBs (business acumen). To enable RRBs to keep their costs down, the salary and perks of their staff were fixed at par with those of the comparable district level staff of the state government concerned. The Statutory Liquidity Ratio (SLR) was fixed at a lower level as compared to commercial banks, and low cost refinance from NABARD and sponsor banks up to prescribed levels was permitted.

The RRBs advance short-, medium- and long-term loans for various rural development activities, including crop production, purchase of tractors, setting up of small village industries, village crafts, various artisans' activities, retail trade, consumer durables, house construction, purchase of mini-buses, and so on.

The RRBs were established as a new set of state-sponsored, rural-oriented, region-based low cost banks, having the ethos of cooperatives and business acumen of CBs for providing credit in the rural areas, particularly to the relatively weaker sections of society. It would be fair to say that the RRBs have succeeded in spreading banking services to far flung rural areas, mobilising rural savings, opening up more avenues for rural poor through institutional credit and generating employment opportunities. However, their mandate of financing only the target group borrowers, coupled with an administered interest rate structure, poor recovery performance, increasing establishment costs and low level of operational efficiency have resulted in the RRBs incurring losses and losing their financial viability right from their inception (Deshpande et al. 1996: 22–23).

With a view to enabling the RRBs to achieve current and sustainable financial viability, several policy measures were initiated, including revamping of the RRBs by infusion of capital. The concept of Development Action Plans (DAPs) was initiated by NABARD, and the RRBs and sponsor banks signed a Memorandum of Understanding (MoU) for ensuring performance obligations/commitments. Initially, 49 RRBs and subsequently

another 53 were selected for restructuring during 1994–95 and 1995–96, respectively. Financial support aggregating Rs 747.14 crore was provided for the purpose. During 1996–97, an additional 36 RRBs were selected, and the central government provided Rs 149.77 crore for strengthening their financial position. Further, a second dose of assistance was also provided to 16 RRBs during 1996–97, aggregating Rs 50.23 crore. An equal amount is required to be contributed by the sponsor banks and state governments. The central government made a further provision of Rs 270 crore in the 1997–98 budget and Rs 265 crore in the 1998–99 budget to carry forward the process of rehabilitation and recapitalisation of the RRBs. As a result of all these measures taken under the direction of NABARD, perceptible improvement in the performance of the RRBs in all spheres has been observed (NABARD 1997: 47).

Self Help Groups (SHGs)

An SHG is a small group of individual members who voluntarily come together and form an association for achieving a common objective. In most cases, SHGs are constituted by persons known to one another and coming from the same village, community or neighbourhood, that is, SHGs are small in size with membership ranging from 10 to 25, are homogeneous and have certain pre-group social binding factors. The purpose for which SHGs are formed varies from managing a common pool resource (CPR), such as an irrigation facility and tree plantation on common land, to providing such basic amenities as a school, health centre, and so on. In the context of micro-finance, SHGs are formed around the theme of savings and credit. In February 1992, NABARD launched a pilot project on 'Linking SHGs with Banks' after consultations with the RBI, selected banks and NGOs. The main objective of the project was to develop innovative participatory and self-sustaining credit delivery systems for improving the access of the rural poor to institutional credit. The systems are intended to complement and supplement the role of the formal rural credit system. Under the project, credit is provided to SHGs by banks using a simplified procedure that requires minimum documentation.

Under the SHG-Bank Linkage Programme, three linkage models have broadly emerged: (a) SHGs formed and financed by banks; (b) SHGs formed by other agencies, including NGOs, but directly financed by banks; and (c) SHGs financed by banks using financial intermediaries. As on 31 March 2007, nearly 17 per cent of the total number of SHGs linked were under the first model, 75 per cent under the second model and 8 per cent under the third model. As on 31 March 2007, the total number of SHGs linked to banks under the three models numbered 29,24,973, of which nearly 30 per cent were women's groups. The number of banks participating in the linkage programme comprised 50 CBs, 96 RRBs and 352 cooperative banks. The programme covered 587 districts in the country. The average amount of new loans per SHG was Rs 44,342 and repeat loan of Rs 78,693, and the total amount of bank loan advanced was Rs 18,041 crore.⁵

NABARD has been networking with a large number of NGOs. These NGOs act either as facilitators, or both as facilitators and financial intermediaries, in effecting linkage of

SHGs with banks. With a view to increase the involvement of NGOs/SHGs in improving the outreach of credit to the rural poor, the RBI constituted a Working Group in November 1994, under the chairmanship of the Managing Director, NABARD. Based on the recommendations of the Working Group, banks were advised to consider lending to SHGs as a normal business activity under the priority sector, and internalise the training of their officers. As a follow-up measure, NABARD constituted, in each state, a State Level Review and Coordination Committee on Credit Delivery Innovations (SLRCCDI) comprising senior officials of the RBI, banks, prominent NGOs and a few state government departments, with the officer-in-charge of the bank's regional office acting as the chairman-cum-convener. These committees review the progress periodically in various credit delivery innovations to improve the access of the rural poor to credit.

THE ROLE OF NON-INSTITUTIONAL AGENCIES

Non-institutional agencies which supply credit to farmers and other rural people include professional moneylenders, agricultural moneylenders, landlords, traders, commission agents, and friends and relatives. Traditionally, these agencies have played an important role in meeting the credit requirements of villagers. Most of the money advanced by them used to be—and still is—spent on household consumption, and social and religious ceremonies, and very little, if any, on production activities. The interest rates were very high, usually ranging from 24 to 60 per cent per annum. The incidence of indebtedness was very high, and most of the rural poor were 'born in debt, lived in debt and died in debt'. According to the All-India Rural Credit Survey Committee Report (1951–52), non-institutional sources supplied 91.27 per cent of the total rural credit advanced in 1951–52. In 1961–62, their share had declined to 81.3 per cent and in 1995–96, it was estimated to be about 65 per cent. Although there has been a marked decline in the share of non-institutional sources in the total rural credit advanced over the period 1951–52 to 1995–96, due partly to growing competition from institutional sources and partly to various agrarian reforms implemented since independence, they still continue to be in business. Notwithstanding the criticism that has been levelled against them, these sources do provide valuable service, which is not available from any other alternative sources and for which they are amply rewarded.

DEFICIT FINANCING OR CONTROLLED INFLATION

Some economists have suggested that the simplest way to finance development in developing countries is to print money or borrow from the banking system; in short, by deficit financing or controlled inflation. In this fashion, it is maintained that the population will be 'forced' to save, since the rise in prices will necessitate a reduction in the volume of consumption of goods and services.

As we have already mentioned in Chapter 5, inflation is also a form of taxation. It is really a tax on cash balances, since those individuals and organisations in the economy who hold cash balances see their purchasing power eroded by inflation. There is, thus, a transfer of wealth from those who hold money in the form of cash balances to those who obtain the resources (in this case the government) through money creation. The government borrows heavily to finance spending, including that for rural development programmes. The GoI's Rupee debt as well as the payment of interest on the debt decrease due to inflation. Suppose inflation increases by three percentage points, then in real terms, the value of debt and interest decreases by 3 per cent, which is a whopping sum. Thus, inflation is an invisible tax on those the government borrows from, in the sense that it erodes the value of their capital and their interest payment. So, inflation tax affects hundreds of millions of people, yet very few of them realise it. Most people value their investment and income without adjusting it for inflation. This is what is called money illusion in economics. Hence, inflation is a politically easier way of taxing people than direct taxes.

According to Bronfenbrenner (1966: 465–66), there are two ways in which inflation may prove beneficial. First, it may permit the authorities to raise the relative prices of the types of labour and capital goods required for development projects without imposing on other sectors of the economy the reductions in money wages and prices which would otherwise be required. This device (which was deliberately used by the Canadian government in the first two years of World War II) permits re-allocation of resources, in a manner conducive to development, in relatively painless fashion. Second, and more important to Professor Bronfenbrenner's argument, is the money illusion.

A slow inflation, or even a rapid one, in its early stages, induces labourers to work more intensively for real incomes which are no higher and which may be lower than their previous level. To a lesser extent, owners of land and capital may be induced to put their property to work more intensively in the same way when money incomes rise. Thus, judicious inflation may result in increased output, which, if properly allocated, could significantly accelerate development. The accompanying forced saving helps to re-allocate demand from consumer goods to capital goods. Beyond a certain point, however, further inflation will reduce the output, partly because investment shifts to speculative hoarding of inventories, and partly because supply curves of various factors of production turn backwards as higher incomes are reached (workers prefer more leisure to more income, investors prefer more safety and liquidity to more income).

But we would like to mention that even controlled inflation can have grave consequences for a developing country like India, which still suffers from a tendency on part of the investors to go in for speculative holding of inventories, rather than for the establishment or expansion of productive enterprises. A constantly rising price level tends to aggravate this tendency, by making speculation all the more profitable. Moreover, export industries, whose prices are determined in the world market, are confronted with constantly rising costs, and thus, become increasingly unprofitable, leading to aggravation of balance of payments difficulties on one hand, and increasing demand for export subsidies on the other. In view of these probable adverse effects of inflation, the GoI and the RBI keep a close watch on the rate of inflation and take appropriate corrective measures, if and when, the inflation crosses a given limit.

Inflationary (deficit) financing of the regular budget in the hope that a rising price level will in itself provide incentive for private investment in development projects is unlikely to be successful. However, if the government undertakes a large-scale development programme, recognising that the level of deficit financing is in itself inflationary and mops up increases in income through tax policy, monetary policy and direct controls, then mild inflation can have a positive impact on economic development.

FOREIGN SOURCES OF FUNDS

As we mentioned earlier in this chapter, foreign sources of funds for rural development include a variety of institutional and non-institutional agencies. The funds are given in the form of grants, loans, and investment. Table 14.3 lists the major foreign development agencies/donors who provide assistance for rural development and other purposes.

Besides, there are four major international NGOs, namely, the Aga Khan Foundation, CARE India, the Ford Foundation and the Save the Children Fund (the UK), that provide substantial assistance to India for various rural development projects.

We now briefly discuss the role of foreign investment and foreign aid in rural development.

Table 14.3 External Sources of Development Assistance to India

<i>Bilateral partners</i>	<i>Multilateral partners</i>
1. Canada/Canadian International Development Agency (CIDA)	1. ADB
2. Canada/International Development Research Centre (IDRC)	2. European Union (EU)
3. Denmark	3. Food and Agriculture Organization (FAO)
4. France	4. International Fund for Agricultural Development (IFAD)
5. Germany	5. International Labour Organization (ILO)
6. Japan/Japan International Cooperation Agency (JICA)	6. United Nations International Children's Emergency Fund (UNICEF)
7. Japan/Overseas Economic Cooperation Fund (OECF)	7. United Nations Development Fund for Women (UNDFW)
8. Netherlands	8. United Nations Development Programme (UNDP)
9. New Zealand	9. United Nations Industrial Development Organisation (UNIDO)
10. Norway	10. United Nations Population Fund (UNDF)
11. Sweden	11. World Food Programme (WFP)
12. Switzerland	12. World Health Organization (WHO)
13. The United Kingdom (UK)	13. World Bank/International Bank for Reconstruction and Development (IBRD)
14. The United States of America (USA)	14. World Bank/International Development Association (IDA)

Source: UNDP (1996a).

The Role of Foreign Investment

Foreign investment is almost indispensable for promoting vigorous economic growth in developing countries. This is because many of them cannot raise the additional capital resources they need for the purpose. If a developing country wants to bring about economic development depending only on its own resources, it will have to wait for decades to be able to do so. Even if a country is fortunate enough to be able to meet its total capital requirements from domestic savings and taxes, it may nevertheless face a foreign exchange problem. As total outlays for development increase, foreign exchange requirements also go up.

In India, foreign exchange is mainly required to import modern technologies, heavy machinery and equipment, fertilisers, fighter planes, missiles, fossil fuels, pulses, wheat, vegetable oils, and so on. The foreign exchange needed for development must be obtained by (a) restricting imports of other goods and services; (b) increasing exports; and (c) obtaining loans and grants from foreigners. Reducing imports, in and of itself, is inflationary; it reduces the availability of goods and releases cash to be spent in other ways. Therefore, whereas it is good for a poor, developing country to have an austere import policy, it offers no panacea for financing its development.

There can be no argument against a policy to increase exports. However, four observations may be made about the role of expanding exports in financing development. First, the volume of exports depends very much on the world market conditions, on which individual developing countries have little control. Second, measures to increase exports are for the most part likely to operate rather slowly. Third, an export surplus, no less than a cut in imports, involves sacrifices; an export surplus means sending more goods abroad than one gets in return. Last, an export surplus is in itself inflationary; it reduces the supply of goods and services and increases the supply of money. It is not, therefore, a substitute for increased savings/taxes at home.

The third alternative for a developing country to secure needed foreign exchange is obtaining loans or grants from foreigners—foreign private investors, foreign governments, or international agencies. It is better for a developing country to obtain part of its additional requirements from each of the three sources, rather than from only any one of them. Certain development projects can be more easily organised and more efficiently managed if carried out on a private enterprise basis, with assistance from a foreign private investor. Other development projects which are highly beneficial to the country, but which do not attract any private investors, may be better handled through government channels, either on a bilateral basis or on a multilateral basis through an international agency like the World Bank.

Many people in developing countries still believe that a huge flood of foreign capital is waiting to inundate their lands if only the gates were opened. This is very far from the truth. There is a lot of competition for capital amongst both the developed as well as developing countries. Furthermore, the prospective investor wants to be sure about the climate for foreign investments in the receiving countries. In Box 14.1, we list the elements that constitute just such a favourable climate from the investor's point of view (Economic Commission for Asia and the Far East [ECAFE] 1950: 4–5).

Box 14.1 Certain Elements of a Favourable Environment for Foreign Investment

1. Political stability and freedom from external aggression
2. Security of life and property
3. Availability of opportunities for earning profits
4. Prompt payment of fair compensation and its remittance to the country of origin in the event of compulsory acquisition of a foreign enterprise
5. Facilities for the remittance of profits, dividends, interest, and so on
6. Facilities for the immigration and employment of foreign technical and administrative personnel
7. A system of taxation that does not impose a crushing burden on private enterprise
8. Freedom from double taxation
9. Absence of vexatious controls
10. Non-discriminatory treatment of foreigners in the administration of controls
11. Absence of competition of State-owned enterprises with private capital
12. A general spirit of friendliness for foreign investors

Source: ECAFE 1950: 4–5.

It is unlikely that even highly favourable laws governing foreign investment will encourage sufficient inflow of private capital to meet a large share of the requirements of developing countries, including India. Therefore, foreign investment has a substantial role to play in financing economic development in India. Foreign direct investment (FDI) has been increasing over the period, thanks largely to the opening up of India's economy in the wake of its new economic policy.

The Role of Foreign Aid

The so-called aid for development is provided by the so-called donors to the so-called recipients. Perhaps it would be appropriate to refer to 'aid' as 'involvement' of the more developed countries in the economic, political, military and social sectors of developing countries, either directly or through international agencies.

Donors' may be foreign governments, corporations, individuals, international organisations or private foundations. 'Aid' may be people serving as actual workers, or just advisors endeavouring to impart knowledge, techniques and institutions in the form of commodities, tools and machines. These items may be provided as gifts, loans or investments. Loans and investments comprise the great bulk of 'aid'.

What are the objectives of the aid policies of donors? They are a mixed bag, mainly economic and political, with a dash of the humanitarianism. One of the most general facts of human nature and conduct is a 'tendency to assume that things which are associated in the society we know must necessarily be associated in all other societies.'

The United Nations Panel on Foreign Investments in Developing Countries in its meeting in Amsterdam in February 1969, called for a massive increase in the flow of

foreign capital to developing countries, in order to provide a reasonable rate of per capita growth (Society for International Development [SID] 1969). These conclusions, though they may be false, have been accepted—more or less voluntarily—by many of the developing countries, resulting in heavy obligations not only to foreign governments and international lending agencies, but also to private investors who have acquired the privilege of exploiting mineral, forest and land resources to produce commodities for export and the privilege of building electric power, communication and transportation facilities and industrial plants. In this way, the ‘donors’ promote their own exports, obtain raw materials and make very substantial profits. These operations are assumed to be in the national interest of both the ‘donors’ and the ‘recipients’. What is good for the donors must be good for the recipients! This concept of the national interest rests on the further assumption that the way to better living for the people of all nations is in the direction of integrating their economies with those of other countries, so that they can maximise their access to the markets and resources of the world.

The governments of developed countries, in order to protect their foreign loans and the investments of their citizens, help recipient governments stay in power by strengthening their military and police forces. This arrangement leaves the large landowners, the military, the industrial and mining interests, the traders and the government bureaucracy, in firm control of a country. Any change—social, economic or political—which threatens this power structure is deemed ‘subversive’ and dealt with accordingly. Should a government which attempts significant reforms come into power, there is always a military coup at hand to remove it from the scene.

As a consequence of a mutuality of interests between the dominant power groups in the donor and recipient countries, substantial ‘aid’ and indigenous resources have been used for the construction of luxury hotels, apartments and office buildings, and for the manufacture of luxury consumer goods and services, as well as for obtaining resources for the establishment of capital intensive industries. In agriculture, the more affluent landowners have been the first to obtain the benefits accruing from the introduction of high yielding varieties (HYV) of rice and wheat. However, foreign aid has undeniably contributed substantially to present and potential progress in some sectors of the India’s economy, including the agricultural sector (Box 14.2). Most of the infrastructural projects, such as roads, dams, electric power generation and transmission facilities, and some of the education programmes, such as the strengthening of medical, engineering and technology, agricultural, business management and public administration schools, have furnished a foundation for further economic and social progress.

Nevertheless, certain major aspects of foreign aid have helped create conditions which give little promise of dealing effectively with the need to advance a technology which will be suited to small farms, and the need to create non-farm employment opportunities for a rapidly growing rural labour force. In so far as aid is responsible for maintaining governments in power, which are unwilling to carry through meaningful land tenure reforms, or devise a tax system which provides sufficient revenue to support really adequate education and health programmes, or accept responsibility for the creation of sufficient employment opportunities in rural areas is concerned, then aid has been inimical to agricultural development.

Box 14.2 Financing of the Operation Flood (OF) Programme

India's Operation Flood (OF) was the world's biggest dairy development programme. An ingenious method of financing was used for financing Phase I of the programme. It was financed by the funds generated from the sale of 1,26,000 tonnes of skimmed milk powder and 42,000 tonnes of butter oil donated to India by the WFP, an agency of the FAO of the United Nations (UN). The original 1970 allocation for OF-I was Rs 95.40 crore for a period of five years, 1970-71 to 1974-75. This was subsequently revised to Rs 116.40 crore. The funds generated from the sale of donated dairy commodities since the inception of the programme till 31 March 1981 amounted to Rs 114.68 crore and the actual disbursements over the same period of time were Rs 116.55 crore. The donated commodities were received, and sold, on behalf of the GoI, by the Indian Dairy Corporation (IDC), which was the financing agency for the programme. The funds were disbursed by the IDC as 30 per cent grant and 70 per cent loan to the implementing agencies nominated by the participating state governments. This method of financing through aid was innovative in the sense that the sale proceeds of the donated dairy commodities were used as investments to create the basic infrastructure needed for modernising India's dairy industry, and the donated dairy commodities were used in such a way as to stabilise the domestic price of milk at a level which was fair to the consumer and remunerative enough for the producer to provide him the needed incentive to increase his milk production. OF enabled India not only to be self-sufficient in milk production but also to be able to export some dairy products.

Source: Singh (1999: 209-10).

In so far as aid has contributed to an emphasis on the expansion of capital intensive industries in urban areas, and has given priority to the larger landowners in programmes to increase the output of food and export products, it has served to create islands of affluence, still leaving the bulk of the people with a traditional technology and at a subsistence level of well-being. A country with a dual society of this nature can never build a domestic consumption base to ensure the full realisation of its technological potential, either in agriculture or in industry. It leaves a major portion of its human resources untapped.

Rising pressures to produce for export distorts the allocation of resources in agriculture, causing production to increase regardless of export prices. The terms of trade worsen for the recipient, making still greater production for export imperative. More and more resources, which might have been used to produce for domestic consumption, must be allocated to produce for export, as debt and profit service requirements grow. Food production may have to be sacrificed to produce exportable products. Existing land tenure systems will remain entrenched because they will most effectively produce surplus for export. Unless there are drastic changes in the concept and direction of foreign aid and in the strategy for achieving goals in the developing nations, the standard of living of cultivator families will not be improved much.

It is intriguing to contemplate what might have happened if these poor countries with colonial and feudal backgrounds had been permitted to exercise a greater measure of responsibility for the development of their respective societies without external intervention or, indeed, what could happen even now, if they relied more on themselves.

A very minimal amount of loan and investment and a very minimal number of 'technicians' from external sources would best serve the national interest of these countries. In discussing the contribution of 'aid' to development, Mikesell (1968) concludes that

... as a general proposition, external capital or aid is neither a necessary nor a sufficient condition for development... By and large, countries that are not making satisfactory progress, regardless of their per capita income, have failed to realise the potential returns from their own resources. What is required are policies and programs for mobilising, adapting and re-allocating those resources, including the training of human resources for the operations of modern economy.

The foreign aid which a developing nation needed, and still needs, is the kind that would enable its citizens to utilise their own natural resources, accumulate their own capital and operate their own economy by themselves, and exclusively for themselves, even though the process would be gradual, over a considerable period of time.

Table 14.4 presents data on the inflow of foreign aid in the form of loans and grants to India for selected years from 1980–81 to 2005–06. As shown in the table, the amount of both loans and grants has been increasing over time; the amount of foreign loans increased from about Rs 3,771 crore in 1980–81 to about Rs 17,309 crore in 2005–06, registering an average increase of about 14 per cent per annum and the amount of foreign grants increased from about Rs 76 crore to about Rs 1,629 crore at an average annual rate of about 82 per cent over the same period of time. However, it is noteworthy that most of the foreign aid has been in the form of loans, which accounted for about 90 per cent of the total foreign aid in 2005–06.

Besides, foreign loans and grants, FDI is also an important source of financing development projects. Thanks to the steady liberalisation of FDI policy, on a gross basis, the inflow of FDI in India has been increasing at a rapid rate in the recent years. For example, it had increased from US\$ 6.2 billion in 2001–02 to US\$ 23.0 billion in 2006–07. However, there has also been a rapid increase in the outflow of FDI from India. Consequently, the net FDI inflow in India in 2006–07 was only US\$ 8.5 billion (GoI 2008).⁷

India's total outstanding foreign debt has been increasing over time. As shown in the Table 14.5, in 1991, it was estimated to be around Rs 95,997 crore, increased to Rs 3,33,080 crore in 2002, and to Rs 3,69,613 crore in 2006. At the end of March 2007, India's external debt stock stood at Rs 7,40,099 crore (GoI 2008).⁹ All these trends indicate that we

Table 14.4 Inflow of Foreign Aid in the Form of Loans and Grants in India

Year	Loans	Grants	(Rs crore)
			Total
1980–81	3,771.20	75.80	3,847.00
1990–91	7,601.30	522.10	8,123.40
1995–96	10,833.20	1,330.00	12,163.20
2000–01	17,184.10	940.60	18,124.70
2005–06	17,309.10	1,628.80	18,937.90

Source: GoI (2007a).⁶

Table 14.5 India's External Debt Outstanding as on End of March of Selected Years

Source of debt	(Rs Crore)				
	1991	1997	2000	2005	2006
1. Multilateral	40,386	1,05,066	1,37,132	1,38,915	1,45,503
2. Bilateral	22,378	62,891	79,278	74,174	70,272
3. IMF	5,132	4,714	143	0	0
4. Export credit	8,374	21,044	29,564	21,798	24,075
5. Commercial borrowing	19,727	51,454	86,963	1,18,243	1,19,763
Total	95,997	2,45,169	3,33,080	3,53,130	3,69,613

Source: GoI (2007a).⁸

have yet to go a long way before we reach our proclaimed goal of self-reliance. Another important observation which we would like to make in this connection is that the bulk of the foreign debt is on account of multilateral sources and commercial borrowings.

MAIN POINTS

1. The capital requirements of agricultural and rural development are enormous. Capital is required not only for on-farm investment to improve the production apparatus and to provide various farm inputs and services, but also for a vast array of supportive infrastructural facilities.
2. Funds for investment in rural development projects come from two main sources: domestic and foreign. Further, in each category, there are institutional and non-institutional sources. Domestic institutional sources include the government, the Reserve Bank of India (RBI), National Bank for Agricultural and Rural Development (NABARD), cooperative banks, commercial banks (CBs) and Regional Rural Banks (RRBs), and private companies and corporations. Non-institutional sources include households, moneylenders and traders, and friends and relatives. Foreign institutional sources include foreign governments, development agencies, the World Bank, the Asian Development Bank (ADB), the International Monetary Fund (IMF), foreign banks, multinational corporations, and so on. Foreign non-institutional sources include Non-Resident Indians (NRIs) and foreign nationals.
3. The government in the past has been, still is, and in future will remain the most important source of funds for rural development in India. Government funds are made available in the form of investment, grants, subsidies and loans, called *taccavi*. Allocations of funds are made through the annual budgetary process. The total public (government) sector plan expenditure on agriculture and allied activities, including rural development programmes, under the First Five Year Plan to the Ninth Five Year Plan was Rs 2,18,540 crore, which accounted for nearly 16 per cent of the total plan expenditure for the entire period.

4. The RBI was a pioneer central bank in the sphere of rural credit. Its founding act of legislation and subsequent amendments entrusted to it the responsibility for enlarging the availability of rural credit. The bank shouldered this responsibility rather reluctantly until 1947, when, after independence, this responsibility was reinforced and became a major responsibility of the bank.
5. A major landmark in the history of development of rural credit in India was the establishment of the NABARD in July 1982, by merging the Agricultural Refinance and Development Corporation, the Agricultural Credit Department of the RBI, and the Rural Credit and Planning Cell of the RBI. The main functions of NABARD include the provision of refinance facility to the cooperative banks and RRBs, CBs against term lending, and overall policy, planning, coordination and monitoring of all agricultural and rural lending activities in the country. Besides, it also undertakes training, research and consultancy relating to rural credit.
6. Although both the RBI and NABARD have played important roles in making cheap credit available to rural people through cooperative banks, CBs and RRBs, the needs of the rural poor still continue to be unfulfilled.
7. Cooperative credit societies entered the field of rural finance with the adoption of the Cooperative Societies Act of 1904. Since then, the government has been making deliberate attempts to nurture the cooperative movement in the country in the larger interests of the rural people. Credit cooperatives have been recognised as the best institutions to provide rural credit to the farmer because they satisfy all the important criteria of sound agricultural credit. They have many advantages over other sources of credit. In 2006–07, cooperative banks accounted for about 21 per cent of the total agricultural credit disbursed in the country. Their share in the total agricultural credit has been declining over time.
8. Cooperative credit societies and cooperative banks suffer from several internal and external problems. There is no formal system of corporate governance extant in cooperative banks. As a result, a number of cooperative banks have come to be the hot bed of political patronage, unscrupulous financial practices and gross mismanagement. Most of the cooperative credit societies and banks are not financially viable.
9. CBs are now playing a strategic role in increasing the national savings rate, in canalising the available savings to finance high priority investments, in better utilisation of available capacities both in agriculture and in industry through adequate supply of credit as working capital. They also provide finance for such anti-poverty programmes as the Integrated Rural Development Programme (IRDP). In July 1969, 14 major CBs were nationalised and another six in 1980. Before their nationalisation, CBs supplied only a negligible share of rural credit: 0.9 per cent in 1951–52 and 0.6 per cent in 1961–62. But as of 2006–07, their share in the total rural credit was as high as 69 per cent and it has been increasing over time.
10. The RRBs were established consequent to the acceptance by the Government of India (GoI) of the recommendations of a Working Group on rural banks. Initially, they were mandated to cater to the credit needs of the weaker sections of the rural community comprising small and marginal farmers, agricultural labourers, artisans

and small entrepreneurs. With effect from December 1993, their mandate has been expanded to include non-target group borrowers also. They were intended to be low-cost 'small man's banks', combining the advantages of cooperatives (close rapport with villagers) and CBs (business acumen).

11. Most of the RRBs have been incurring losses and losing their financial viability right from their inception. This is due to several reasons including their mandate of financing only the target group borrowers, coupled with an administered interest rate structure, poor recovery performance, increasing establishment costs and low level of operational efficiency. Their performance has improved slightly after certain corrective measures had been taken by NABARD. In 2006–07, their share in the total rural credit was 10 per cent and it has been increasing over time.
12. Self Help Groups (SHGs) have emerged as an important source of microfinance. They are formed around the theme of savings and credit. In February 1992, NABARD launched a pilot project on 'Linking SHGs with Banks' after consultations with the RBI, selected banks and non-governmental organisations (NGOs). The main objective of the project was to develop innovative, participatory and self-sustaining credit delivery systems for improving the access of the rural poor to institutional credit. The systems are intended to complement and supplement the role of the formal rural credit system. Under the project, credit is provided to SHGs by banks using a simplified procedure that requires a minimum of documentation.
13. Non-institutional agencies which supply credit to farmers and other rural people include professional moneylenders, agricultural moneylenders, landlords, traders and commission agents, and friends and relatives. Traditionally, these agencies have played an important role in meeting the credit requirements of villagers. But now their relative importance has been declining.
14. Deficit financing or controlled inflation is one of the ways to finance development in developing countries. It is maintained that due to inflation, the population will be 'forced' to save, since the rise in prices will necessitate a reduction in the volume of consumption of goods and services. Inflationary (deficit) financing of the regular budget in the hope that a rising price level will in itself provide incentive for private investment in development projects is unlikely to be successful. However, if the government undertakes a large-scale development programme, recognising that the level of deficit financing is in itself inflationary and mops up increases in income through tax policy, monetary policy and direct controls, then mild inflation can have a positive impact on economic development.
15. Many people in developing countries still believe that a huge flood of foreign capital is waiting to inundate their lands if only the gates were opened. This is very far from the truth. There is a lot of competition for capital amongst both the developed as well as developing countries. Furthermore, the prospective investor wants to be sure about the climate for foreign investments in the receiving countries.
16. The amount of foreign aid in the form of both loans and grants has been increasing over time; the amount of foreign loans increased from about Rs 3,771 crore in 1980–81 to about Rs 17,309 crore in 2005–06, and the amount of foreign grants increased

from about Rs 76 crore to about Rs 1,629 crore over the same period of time. The foreign aid which a developing nation needed, and still needs, is the kind that would enable its citizens to utilise their own natural resources, accumulate their own capital and operate their own economy by themselves, and exclusively for themselves, even though the process would be gradual, over a considerable period of time. An exemplary way of using this mode of foreign aid was demonstrated by the Operation Flood (OF) programme.

17. Technical assistance is the most productive form of external aid. Transfer of knowledge, skills and productive knowhow from a developed to a developing country can permanently raise the productivity of labour, and make land and capital fruitful. This is evident from India's experience with establishing land grant pattern universities with the technical and financial assistance provided by the United States Agency for International Development (USAID), the Rockefeller Foundation and the Ford Foundation.
18. The amount of foreign debt of India has been increasing over time; in 1991, it was estimated to be around Rs 95,997 crore, it increased to Rs 3,69,613 crore in 2006 and to Rs 7,40,099 crore in 2007. All these trends indicate that we have yet to go a long way before we reach our proclaimed goal of self-reliance.

NOTES

1. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
2. <http://dacnet.nic.in/eands/agStat06-07.htm>. Accessed in March 2008.
3. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
4. <http://indiabudget.nic.in>. Accessed in March 2008.
5. [http://www.NABARD.org/pdf/highlights 06-07](http://www.NABARD.org/pdf/highlights%2006-07). Accessed in March 2008.
6. <http://indiabudget.nic.in/es2006-07>. Accessed in March 2008.
7. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
8. <http://www.indiabudget.nic.in/es2006-07>. Accessed in March 2008.
9. <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.

QUESTIONS FOR DISCUSSION

- 14.1. India's rural sector is starved of capital and, consequently, it has low resources productivity, low incomes, and higher incidence of poverty and unemployment. Outline a strategy for increasing the flow of funds to the rural sector.
- 14.2. Discuss how inflation can help the government mop up funds for rural development.
- 14.3. Compare and contrast the roles of the Reserve Bank of India (RBI) and the National Bank for Agricultural and Rural Development (NABARD) in increasing the flow of credit to the rural sector.

- 14.4. Cooperative credit societies were intended to be an appropriate institutional structure for meeting the credit requirements of rural people. But our experience with them shows that they have failed to play their intended role. Discuss the reasons why has it been so.
- 14.5. What are the strengths and weaknesses of Self Help Groups (SHGs) vis-à-vis cooperative credit societies?
- 14.6. Identify a few areas/projects in the rural sector where foreign investment could be very useful and why.
- 14.7. How can the Government of India (GoI) attract more foreign investment to the rural sector?
- 14.8. Discuss the pros and cons of foreign aid as a means of financing rural development in India.

15 Implementation, Monitoring and Evaluation

LEARNING OUTCOMES

After having gone through this chapter, students should be able to

- define the terms, 'project planning', 'project monitoring' and 'project evaluation';
- describe the major elements of project planning;
- explain why project control is necessary;
- examine the role of 'Integration and Coordination' in rural development planning;
- explain why people's participation in implementation is necessary;
- describe the main functions of project monitoring with reference to a rural development project;
- define and differentiate between '*Ex-ante* Evaluation', 'Concurrent Evaluation' and '*Ex-post* Evaluation' and
- explain the 'With and Without' and 'Before and After' approaches to evaluation, their merits and demerits, and how to use them.

INTRODUCTION

Implementation, monitoring and evaluation are all subsumed in the broader function of project management. Implementation may be regarded as a process by which a set of predetermined activities is carried out in a planned manner, with a view to achieving

certain established objectives. As we mentioned in Chapter 12, a programme is usually implemented through a series of well-defined projects. This means that a programme usually consists of a number of projects, the implementation of which is supposed to eventually culminate in its execution. The scope of a plan is still broader, in the sense that it usually comprises a number of programmes. Thus, for its implementation, a plan has to be broken down into a number of programmes, each of which in turn is broken down into a number of projects. A project treats the questions: 'what, who, when and how', more specifically than does a programme.

Monitoring is a process of keeping a watch on the progress of a project vis-à-vis its targets and time schedule. The main objective of monitoring is to find out whether there are any deviations of actual physical and financial achievements from the planned/targeted ones, and to help the project authority take necessary corrective measures in time. Evaluation of a project is concerned with the assessment of its the impact (s).

The failure of agricultural and rural development programmes in India, as also in other developing countries, can, in large measure, be traced to the difficulties which hinder their effective implementation. Clearly, a programme is no better than its implementation. Emphasising the importance of implementation, the late Prime Minister Jawaharlal Nehru, who had an unusual grasp of planning problems, once pointedly remarked, 'We in the Planning Commission and others concerned have grown more experienced and more expert in planning. But the real question is not planning, but implementing the plans.... I fear we are not quite so expert at implementation as at planning' (quoted in Waterston 1970: 403). This statement is notable because it recognises that the problems of plan implementation are more difficult than those of plan formulation. But the statement seems to imply that planning and implementation are two different and unrelated functions. As a matter of fact, they are highly interrelated and, therefore, should be considered as an integral whole. Planners cannot limit themselves to saying *what* is to be achieved, without showing *how* and by *whom* it is to be done. Every target must be accompanied by policies and measures which have been devised specifically to fulfil it, otherwise it becomes only a forecast or projection.

Monitoring is an important aid to effective and smooth implementation of a project. Concurrent evaluation can help the implementing agency make mid-course corrections in the project, and thereby enhance its positive impacts and minimise its (unintended) negative effects. Therefore, both monitoring and evaluation are necessary for the success of rural development projects.

Massive investments have been made in rural development programmes since the beginning of the planning era, and will continue to be made in the near future. Apart from several flaws in planning, there have been numerous operational problems in the implementation, monitoring and evaluation of the programmes. This has adversely affected the efficiency and effectiveness of the programmes. The policy makers, the implementing agencies and the beneficiaries have all to be constantly vigilant and watch closely the progress of implementation of rural development projects. This can be done through an appropriate system of monitoring built into the project design itself. Effective monitoring can cut down the wastage of a lot of resources and help achieve project

objectives more effectively and efficiently. The Percentage Progress Technique (PPT) is a commonly used approach adopted to assess the progress of a project. In this approach, the percentage of physical work completed and the percentage of project outlay expended are used to review the progress of the project. The other aids to monitoring include (a) Network Analysis; (b) Objective-Oriented Project Planning (OOPP), also known as ZOPP (*Zielorientierte Projektplanung*); (c) Master Schedule and (d) Management Summary Reports (Gopalakrishnan and Ramamoorthy 1993: 332–37).

This chapter is devoted to an elaboration and discussion of the methods and processes of implementation, monitoring and evaluation of rural development programmes.

PROJECT IMPLEMENTATION

We can distinguish between two approaches to implementation, namely, the traditional (blueprint) approach and the open (people-centred) approach. The traditional approach is characterised by a mechanical view of planning and development, in which implementation is simply a tool of the powerful (donors, planners, politicians). Employees are seen variously as cogs in a machine, or troublesome but necessary raw materials. Project beneficiaries are seen either as clients (to be ‘sold’ an idea) or employees (to be instructed).

On the other hand, the open approach attempts to make people important, thinking in terms of ‘instigators’ and ‘actors’, rather than as planners and clients. It recognises that implementation is about the communication of meaning, and that it is concerned with power and influence. Implementation becomes more important and is seen as the education of both planners and clients to their mutual benefit. It is still a means of getting things done, but it is also concerned with how things are done and the desirable and undesirable consequences that accrue. As a result, it becomes much more an integral part of the planning process and influences the technical, financial and economic aspects of the process.

In the context of rural development, an approach is needed which encourages and fosters decreasing dependence and increasing self-reliance, and the open approach is suited to this. The traditional approach, on the other hand, can cause dependence and alienation, rather than reducing it. But it is still the predominant approach to implementation and is used by the majority of rural development agencies. The open approach is pragmatic and flexible, and is suited to learning and adapting from experience. It leans heavily on the one great resource which the traditional approach has ignored, which is, the people themselves, their motivation, experience and common sense. Furthermore, the open view would suggest that implementation cannot be separated from politics. To think of implementation purely in terms of the acquisition of finance, planning of expenditure, acquisition of inputs, budgetary control and other mechanics of management,

is to miss the basic point. Implementation is concerned with action—who plans it, who does it, whom it is done to and why, who has the power and how the power is organised for action.

Now, we briefly discuss the major components of the implementation process.

Planning for Implementation

Some planning is required for plan implementation as well. A plan for implementation should, at the minimum, specify what is to be done, who is to do it, when it is to be done and how it is to be done. To begin with, the plan should be broken up into a number of projects and then for every project an implementation system should be developed. Clearly, every project will require a unique implementation system tailor-made to suit its peculiar requirements and characteristics. It is not possible to develop universally applicable implementation systems. But a broad frame for implementation systems can be specified as follows (Kohli 1979: 13–17).

Plan for Physical Work

The plan for physical work should include the following:

1. Estimation of requirements of supplies, equipment and implements, labour, power, credit, managerial and technical staff.
2. Recruitment, orientation and posting of the staff.
3. Surveys, studies, investigations and reports.
4. Procurement of supplies, equipment and implements, credit, and so on.
5. Arrangements for marketing the produce of the target beneficiaries.
6. Allocation and distribution of supplies, equipment, credit, and so on.
7. Physical works.
8. Arrangement for decision-making and performing administrative functions at different levels and stages.

All these activities should be clearly defined along with their sequence and interdependence.

Time Plan

First, the estimated time required for each activity, assuming the availability of staff and other resources as planned, should be decided, as also the dates when each item of work should begin and finish. Techniques such as bar charts, flow charts, Programme Evaluation and Review Technique (PERT) and Critical Path Method (CPM) could be used to develop a time plan for the project (Gopalakrishnan and Ramamoorthy 1993:

Chapters Five and Six). Care should be taken to match the requirement with the availability in each time period, both in terms of quantum and pattern.

Input Resource Planning

Input resource planning should include the following:

1. Identification of scarce inputs, which would require detailed planning and matching with availability.
2. Determination of total requirement of each category of inputs.
3. Breaking the total requirement into period-wise components, inline with the time plan formulated.
4. Realistic forecasts of likely availability of inputs for each period and specification of assumptions underlying these forecasts.
5. Comparison of requirements with availability for each period.
6. Reworking of the time plan, whenever necessary, so that the revised requirements correspond to the availability.

After the time plan and the input resource plan have been thus integrated, the resultant implementation plan can be termed as realistic or implementable, depending upon how realistically the future conditions have been foreseen.

Equipment Order Planning

Separate lists of equipment and other items to be purchased should be prepared and orders placed accordingly. The purchase plan and the implementation plan should be synchronised.

Project Organisation

Both for preparing the implementation plan, as well as for executing the project, an appropriate project organisation has to be developed, responsibilities for various tasks clearly assigned, and proper use of scientific equipment and tools ensured. Filling key positions with adequately skilled and experienced persons on time is also important. It is also better to spell out the monitoring and management information systems to be used during the implementation and to develop the necessary report formats.

Building Interlinkages

This is necessary to complete the project in time and to derive full benefits from the interrelated projects, such as bridges and roads, irrigation and crop development projects,

production, processing and marketing projects, power and industry, and so on. Both backward and forward linkages with other projects should be built and strengthened.

Drawing eclectically on several sources of ideas, Robert Chambers and his colleagues have developed a system for programming and controlling the implementation of rural development programmes and projects. It is called the Programming and Implementation (PIM) system. The pilot system has been tested in the Special Rural Development Programme (SRDP) in Kenya. The system has the following three main components (Chambers 1974: Chapter 2):

1. A programming exercise, which in the SRDP was annual and held just before or just after the beginning of the financial year. This is a meeting attended by all those directly concerned with implementation, at which they jointly and freely draw up a phased work programme for the year.
2. A management meeting, which in the SRDP was usually monthly. At this meeting, attended by those concerned directly with implementation, progress is reviewed against the phased work programme, bottlenecks are identified and remedial action agreed upon.
3. An action report, which in the SRDP was described as a monthly management report, summarising briefly the progress made and the problems encountered, naming those responsible for action, and is sent quickly and simultaneously to those concerned at different levels in the government.

The main principles incorporated in the system are as follows:

1. A procedure requiring joint programming by all those responsible for implementation.
2. Staff taking part in setting their own work targets.
3. Collegial sanctions against poor work.
4. Lean and functional reports.
5. Communication direct from the implementer to the point of bottleneck or delay.
6. Functional meetings used sparingly.
7. Sophistication in simplicity.

These principles might be used in devising other implementation and management systems for other situations, in India and other developing countries. A number of technical, economic, financial, commercial, socio-cultural and institutional-organisational factors affect the implementation of a rural development programme. Knowledge about the nature and magnitude of the effect of each of these factors is necessary for rural development managers to be able to implement and manage the programme efficiently and effectively. Similar knowledge is also essential for rural development policy makers and planners in order to formulate realistic policies and plans for rural development. It is the lack or inadequacy of knowledge about some or all of these factors, on the part of both development policy makers and administrators, that explains, to a large extent, the failure of India's development programmes.

PROJECT CONTROL

The functions of management and control are linked together because there is no generally agreed definition of them. Indeed, the words are often used interchangeably. However, we prefer to regard them as separate, though linked, functions. Control is concerned with maintaining project operations to meet changing circumstances, particularly those exogenous to the project, such as markets, input and product prices, government policy changes, and so on.

In practice, the control function of rural development projects is frequently so pre-occupied with financial accountability, the prevention of fraud and the policing of project activities, that it tends towards a centralised, rigid and non-motivating structure. This preoccupation reflects the attitude of the operating ministries—which are spending—and not that of business institutions. The result is that project control is seen as a major function at the cost of project management, and this accounts for the inflexibility of project operations observed so frequently. Rural development projects rarely operate under static circumstances and, therefore, project management should have the capacity to adjust project operations to change.

The management structures and methods of control should be closely related to the basic physical, technical, social and economic characteristics of a project. In the early stages of project operation, strong technical and administrative control is likely to be beneficial, but over time, increasing benefits are likely to come from the decentralisation of decision-making and greater farmer participation.

Project management performance depends not only on a staffing structure appropriate to the type and size of the project, but also on the quality of staff; this refers to all levels of management. A shortage of high quality, well-motivated manpower is a common characteristic of developing countries, but it is particularly marked in the rural sector, where projects are often isolated and sometimes located in unattractive situations, which makes it difficult to attract people to work on them. Perhaps, even more important is the fact that the wages and salaries of project employees as well as access to urban amenities, are often unattractive and inadequate when compared with other sectors.

INTEGRATION AND COORDINATION

Given the multidisciplinary nature of rural development, and the multitude of governmental and non-governmental agencies engaged in the implementation of diverse agricultural and rural development programmes with different—and often conflicting—objectives, it is absolutely essential that the different development programmes under operation in an area be integrated and coordinated for optimum results. In the absence of requisite integration and coordination among various development programmes, as it is at present in India, there is a great deal of unnecessary overlapping, duplication and wastage of scarce resources. The main reason for the lack of integration and coordination among various development agencies can be traced to India's Constitution, which, until

the 73rd Amendment to it in 1992, did not define the relationship between the state, and the district and other lower tiers, with reference to planning.

A review of the experience of panchayati raj institutions (PRIs) prior to the 73rd Amendment reveals that they had not been successful in achieving the desired integration of the political and administrative systems, and in enlisting people's participation in development plans and programmes. The development administration at the district and tehsil/taluka levels still faces the twin problems of horizontal and vertical coordination, and integration of the political and administrative systems. In order to solve these problems and to bring together all the administrative operations under the effective control of a single agency, it would be necessary to evolve a unified administrative structure at the district level, integrating the functions of the Zila Parishad and the District Rural Development Agency (DRDA).

The unified organisational structure may have the Collector, or some other generalist functionary, acting as the overall coordinator, whose authority should be reinforced through local people's institutions brought into the administrative process, with adequate powers and well-defined functions, and which can enforce their policy decisions on the functionaries operating within their jurisdiction.

PEOPLE'S PARTICIPATION IN IMPLEMENTATION

The implementation of any rural development project on a national scale cannot be possible without the active and widespread participation of its clientele. This is why a rural development project authority, to be effective, must know how to make the project's clientele see themselves as partners in the effort, and how to encourage the individual initiative dormant in the people. In other words, the project authority must be capable of maintaining a proper balance between public intervention and private initiative; the former will be greater in the early stage of development and the latter in the advanced stage of development.

It is the task of the project authority to discover the active elements in the local population, to awaken their interest and to mobilise their initiative. The active elements may be found in the educated middle class, rural leaders, political parties or in other groups. Their successful activation requires the first hand knowledge of the population, their customs and traditions, and is often based more on perceptiveness and intuition than on direct rules and principles.

Many different factors may motivate people to participate or refrain from participating in a rural development project. Therefore, it is necessary for those responsible for project implementation to find out the factors that motivate the local people to participate in a project and to formulate, on the basis of this first hand knowledge, a specific strategy to enlist their participation. A review of India's past efforts in involving people in the processes of plan formulation and implementation would reveal that the decentralisation of planning and administrative functions through the PRIs has not brought about the desired results. After the introduction of the 73rd Constitution Amendment Act, 1992,

people's participation in planning and implementation of rural development projects was expected to improve. But the experience to date indicates that it has not improved significantly. Most of the rural poor still do not participate, due to a variety of reasons, in decision-making processes that affect them.

In a few areas, some voluntary agencies (VAs) have been successful in enlisting the support and participation of the local people in the implementation of their development projects. But that is more because of the charismatic personality of the project leader, and less because of any institutional innovations that can be replicated on a large scale elsewhere in the country. The Anand-pattern cooperative structure seems to be an appropriate instrument for enlisting people's participation in rural development projects. This has been amply demonstrated under the Operation Flood (OF) programme.

Weitz (1971: Chapter 9) has distilled, from the experience with various development projects, the following simple rules of thumb for enlisting people's participation in development projects:

1. Create a human relationship on the basis of equality between the project clientele and the project employees, and institutionalise it.
2. Know the traditions and social customs of the project's clientele.
3. Introduce programmes gradually and adapt them to the ability of the target population, to enable it to absorb the changes involved.
4. Get yourself a partner from amongst the local leaders.
5. Encourage and promote development leadership among both the project employees and the local people.

PROJECT MONITORING

Monitoring is undertaken to fulfil the following purposes:

1. Provide the information required for improving the selection, performance and cost-effectiveness of projects.
2. Provide the information required by the funding agencies and local level agencies interested in the project.
3. Ensure effective vertical and horizontal information flows between different levels and agencies associated with the projects.

The major components of project monitoring are as follows:

1. Project Progress Reports
 - (i) Summary
 - (ii) Progress of physical implementation compared to targets
 - (iii) Financial performance compared to targets
 - (iv) Performance of principal inputs and services

2. Special Diagnostic Studies
3. Project Completion Reports
4. Project Sustainability

Practically every major agricultural and rural development programme provides for monitoring of both the achievement of its physical and financial targets, and the benefits actually accruing to its target group. Usually, a family-based approach is used for monitoring the impact of a programme on its clientele. For example, the Integrated Rural Development Programme (IRDP) provides for the monitoring of incremental income of its beneficiary families and for comparing it with their baseline incomes as assessed at the time of conducting household surveys for selection of beneficiaries. For this purpose, an identity-cum-monitoring card is issued to each beneficiary family.

From the management perspective, it is necessary to differentiate between the information needed for control and the information needed for purposes other than control. Therefore, the management needs two types of reports: a control report and an information report. For the purpose of control, what is needed is essentially a comparison of actual performance with planned performance and reasons for the deviations, if any. Therefore, a control report should be very brief and precise. The information report tells the management what is going on in the organisation. Such reports may or may not lead to action.

The format and frequency of a monitoring or control report will depend on the nature, size, complexity and structure of the organisation/programme which is to be monitored and controlled. But, in general, a monitoring system should be linked with the responsibility centres in the organisation concerned. A responsibility centre is simply a unit or a subsystem in an organisation headed by a responsible manager, who is accountable for the work done by his unit. The manager in charge of a responsibility centre should be provided with the information which is relevant for his needs of planning, decision-making, control and remedial action. The relevant information should, therefore, be identified for each responsibility centre and the control report format designed accordingly.

The Union Ministry of Rural Development lays special emphasis on monitoring and evaluation of rural development programmes in general, and poverty alleviation programmes in particular, being implemented in various states. To ensure this, the Ministry has evolved a comprehensive system of monitoring and evaluation, the salient features of which are as follows (GoI 1997b: 101):

1. Periodical progress reviews and reports
2. Financial returns/audit reports
3. Intensive inspections
4. Area officers scheme
5. Review by various committees
6. Concurrent evaluation studies and reports

Monitoring of rural development programmes at the state level is the responsibility of the State Level Coordination Committee (SLCC) for rural development programmes.

A representative of the Union Ministry of Rural Development is also invited to participate in the meetings of the SLCC. The chief ministers of the states also review, from time to time, the progress of various programmes with Members of Parliament (MPs), Members of Legislative Assemblies (MLAs) and senior officers of the state governments concerned. At the central level, sanctioning and screening committees critically review the overall performance of rural development programmes and suggest necessary measures to effect improvements in their implementation.

Apart from the monitoring mechanisms stated above, the standing committees and the consultative committees of the Parliament also take stock of the implementation of various rural development programmes at periodical intervals. The shortcomings/lacunae observed by the local MPs in the implementation of the programmes are looked into, and quick remedial measures taken to improve the programme, wherever required.

Besides the government agencies, other organisations, such as the funding agencies/donors and non-governmental organisations (NGOs) also undertake monitoring of the projects supported by them. This is normally done by external agencies/consultants on their behalf.

PROJECT EVALUATION

By evaluation we mean assessment. We distinguish between three types of evaluation, namely, *ex-ante* evaluation, concurrent evaluation and *ex-post* evaluation. In *ex-ante* evaluation, a project is assessed before it is executed; in concurrent evaluation, assessment is made while the project is underway; in *ex-post* evaluation, assessment is made after the project is completed. This section is confined to concurrent and *ex-post* evaluation.

Objectives of Evaluation

The main objectives of *ex-post* evaluation are to find out whether, and to what extent, the programme has been successful in achieving its objectives and at what cost, to investigate the reasons of both good as well as bad performance, and to bring out the lessons learnt. A secondary objective of evaluation could be to suggest appropriate measures to improve the performance of the programme. The main objective of concurrent evaluation is to find out whether the programme is progressing as per the plan (and if not, why) and what its impacts are.

Methodological Issues

Evaluation of a rural development programme is beset with a number of conceptual and empirical problems. First, there are conceptual problems of devising a composite index

of rural development, which can capture its multidimensional nature. Then, there are problems of quantifying all the programme interventions and measures that directly and/or indirectly seek to promote rural development, and recording and monitoring their values at the beginning, at the end, as also during the course of the programme. These problems are further complicated by the fact that the causal variables or determinants of development keep changing simultaneously, rendering it very difficult to isolate and measure the effect of any one of them. It is difficult—and if at all possible, extravagant in resources—to apply a Classical experimental design of studies with random samples, controls, treatments, measurement of effects and attribution of effects, to programme measures. Also, a long period may be needed to identify and observe the ‘after’ effects of a rural development programme, given the slow diffusion of its effects.

Setting targets is an important management tool, which is commonly used in rural development programmes to control and improve the performance, and evaluation is invariably geared towards measuring achievement against the targets. This form of evaluation is liable to bias activity and effort towards achieving outputs which are quantifiable and measurable, to the neglect of those which may be more important, but which are less easy to quantify and measure. For instance, the eradication of poverty is the ultimate goal of IRDP, but its performance is evaluated in terms of achievement of its physical and financial targets. This is mainly because monitoring changes in the magnitude of poverty is more difficult than reporting the progress achieved in fulfilling the physical (number of beneficiaries covered) and financial (amount of subsidy and loans disbursed) targets. It is important, therefore, that programme administrators and evaluators take care in choosing evaluation criteria and see the causal links between the programme measures, sub-goals and main goals.

Rural development projects and their outcomes can be seen as long, causal chains of the following type.

Inputs and activities → Production targets → Products (outputs) → Sub-goals → Main goals

An evaluation system has to select points along the chain at which observations and measurements can be carried out. Evaluation could be done at any or all the points along the chain.

Rural development programmes usually have multiple effects, only a few of which are usually specified in an evaluation plan. While some of the effects may be anticipated, others may be unanticipated or spillovers. Of the unanticipated effects, some may be harmful and some may be beneficial. For instance, a shortage of good quality milch animals, and the consequent hike in their price, may be an unanticipated harmful effect of provision of milch animals to selected beneficiaries under IRDP, and enhancing of managerial capacity of the beneficiaries may be an unanticipated beneficial effect of the same programme. Unless an evaluation design is open to change, and unless perceptive and open-ended research is undertaken concurrently with evaluation, significant unanticipated effects may be missed.

Evaluation is also vulnerable to political insecurity and pressures. External evaluation is usually called upon for three reasons, or for combinations of them: to be quasi-judicial; to be supportive; or to improve performance. Consequently, the evaluator may be regarded

as a spy, an investigator or an enemy; but it is quite likely that he will be co-opted into the system. Co-opted evaluators resemble parasites in their concern not to kill their hosts, and there is a danger that their reports will be muted in criticism and over-lavish in praise, in order to secure their continued employment or the chance of another job.

Besides external evaluation, much informal and unsystematic evaluation takes place within departments/organisations, through the experience gained with implementation, through personal impressions and through the feedback of internal reporting systems. An external evaluator may contribute a lot by examining the reporting and evaluation systems which already operate within the organisation, and trying to improve them and link them up functionally with remedial action and with future resource allocations.

Criteria for Evaluation

The criteria for evaluation of a programme should be related to the major goals of the programme and should be operational. For example, a simple criterion for evaluating the IRDP could be the number of people helped to rise above the poverty line on a sustained basis. To operationalise this criterion, we will need to define a poverty line for each state, district or may be for the block also, separately at some base year's price, and then keep updating this, year after year, to neutralise the effect of inflation. Once this is done, the next thing required is to develop a system to determine and report the annual per capita income for each beneficiary household every year. This way, we may, at the end of each year, see how many poor families have been helped to rise above the poverty line.

Determining the area-specific poverty line, updating it and assessing per capita income for each and every beneficiary household are all very difficult tasks, and require the expertise and resources that are not available at present at the block and district levels anywhere in the country. Unless requisite resources and expertise are made available, nothing more or better than the existing system of reporting progress in terms of physical and financial targets can be expected. Universities and research institutes could help in determining poverty lines, updating these and assessing per capita incomes in a few blocks and districts, but the major brunt of the task will have to be borne by the programme itself. Recently, state-wise rural and urban poverty lines for 2004–05 have been determined on the basis of consumption expenditure data collected in the sixty-first round of the National Sample Survey Organisation's (NSSO) survey (see, for details, Chapters 3 and 10). They are estimated using the original state-specific poverty lines identified by the Expert Group (EG) and updating them to 2004–05 prices using the Consumer Price Index of Agricultural Labourers (CPIAL) for rural poverty lines and Consumer Price Index for Industrial Workers (CPIIW) for urban poverty lines (*Kurukshetra* 2007: 44).

Approaches to Evaluation

Most evaluation studies have used either the 'Before and After' or 'With and Without' approach to isolate and measure programme impacts. Ideally, both these approaches

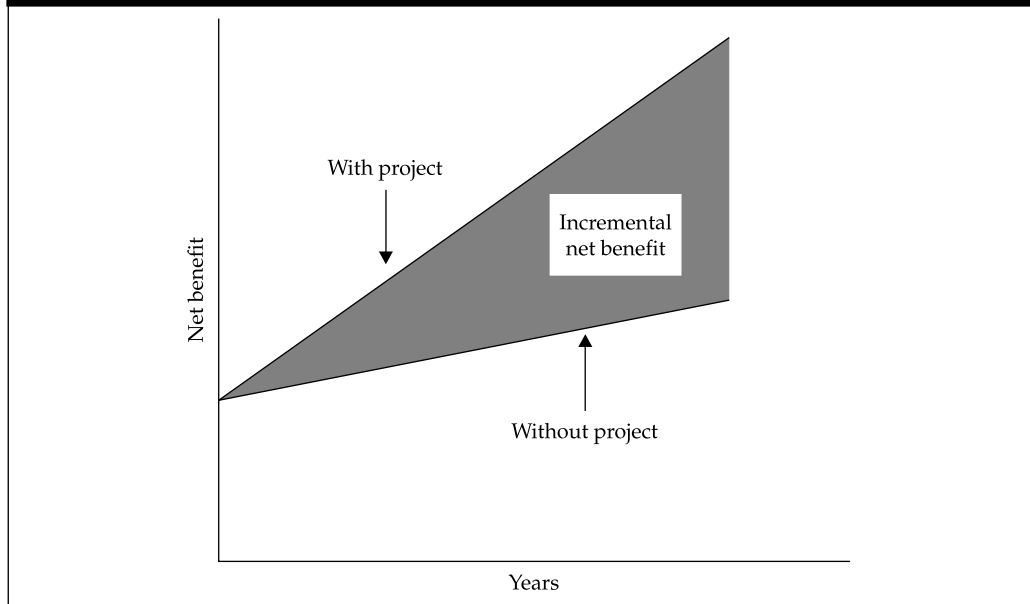
should be used together. The 'Before and After' approach purges the programme impact of the cumulated effect of past programmes, and the 'With and Without' approach eliminates the effects of the natural process of development, as well as of other development programmes underway in the area of study. But the 'Before and After' approach can be used only when the baseline data for the year immediately preceding the year when the programme to be evaluated was launched are available.

Under IRDP, baseline household surveys were conducted in all the villages selected for the programme, and the incomes of the eligible beneficiaries are determined. Assuming that this information is readily available at the block headquarters, one could use both these approaches to evaluate the impact of IRDP. For the 'With and Without' approach, the households that are otherwise eligible for assistance under the programme, but were excluded because of the limited target, constitute the 'control' (without programme) group, and the beneficiaries would constitute the 'project' (with programme) group.

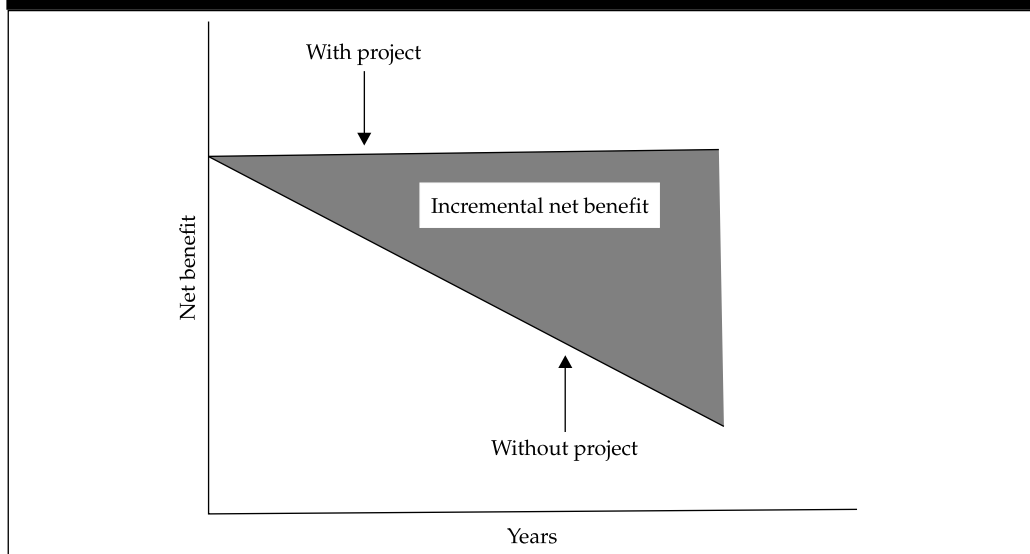
In the 'With and Without' method, an attempt is made to identify and value the costs and benefits that have arisen from the programme, and to compare them with the costs and benefits in the situation which would have prevailed without the programme. The difference is the incremental net benefit that can be attributed to the programme. The 'Before and After' method, if used alone, fails to take into account the changes in income, employment or any other performance indicator that may occur autonomously without the programme, and thus may lead to an erroneous estimate of the benefits attributable to the programme.

Generally speaking, one may encounter one of three situations in which the programme, which is to be evaluated may be operating (Gittinger 1982: 47–50):

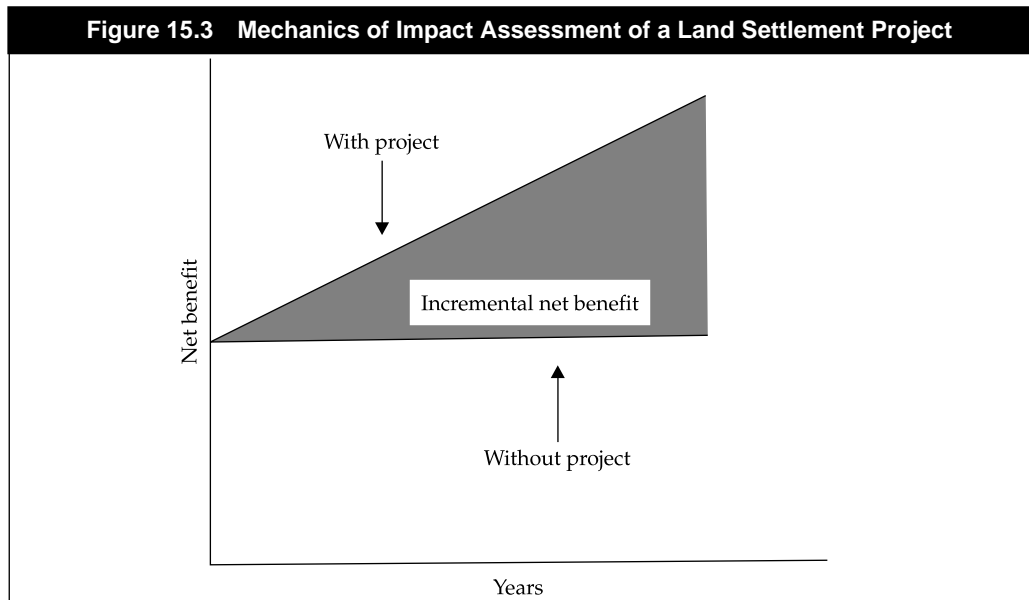
1. A situation in which output or income, or any other performance indicator has been growing, but at a slow rate, say, 5 per cent per annum, even without the programme. With the programme, the rate of growth may increase to, say, 10 per cent per annum. So, the incremental effect is $10 - 5 = 5$ per cent per annum. This situation is represented in Figure 15.1. This kind of situation prevailed in India in the dairy sector before OF-I was launched.
2. A situation in which the output has been declining, say, at a rate of 5 per cent per annum naturally, but with the programme, the decrease in output may be checked and output may be stabilised at the normal level. In this case, the benefit from the programme is in the form of prevention of loss in output. In agriculture, this kind of situation may arise in areas which are prone to droughts, floods and wind erosion. This situation is represented in Figure 15.2.
3. A situation in which no change in output is expected without the programme, but with the programme the output is expected to increase, say, at the rate of 5 per cent per annum. In this case, all the increase (5 per cent) may be attributed to the programme. In this situation, the use of 'Before and After' and 'With and Without' methods would yield the same results. In this kind of situation, one may use either of these methods. This situation (depicted in Figure 15.3) may prevail in the new settlement project areas where, without the project, the productivity of land and other resources is almost stagnant or negligible, but after the project it starts increasing.

Figure 15.1 Mechanics of Impact Assessment of a Programme like Operation Flood

Source: Gittinger (1982).

Figure 15.2 Mechanics of Impact Assessment of a Flood Control Project

Source: Gittinger (1982).



Source: Gittinger (1982).

A conceptual design that we can use for impact evaluation of a project could be presented as is done in Table 15.1.

Table 15.1 A Conceptual Design for Impact Measurement		
<i>Type of group</i>	<i>Before the adoption of a project</i>	<i>After the adoption of a project</i>
Beneficiary	I_{PB}	I_{PA}
Non-beneficiary	I_{CB}	I_{CA}

Source: Author.

- Notes: 1. I_{PB} = level of a selected impact indicator for the beneficiary group before the project was launched;
 2. I_{PA} = level of a selected indicator for the beneficiary group after the project is over or is still underway;
 3. I_{CB} = level of a selected impact indicator for the non-beneficiary group before the project was launched; and
 4. I_{CA} = level of a selected impact indicator for the non-beneficiary group after the project is over or is still underway.

The net effect of the project is given as:

$$\text{Net Effect} = (I_{PA} - I_{PB}) - (I_{CA} - I_{CB})$$

Or, alternatively,

$$\text{Net Effect} = (I_{PA} - I_{CA}) - (I_{PB} - I_{CB})$$

$(I_{PA} - I_{PB})$ gives an estimate of the gross effect on the level of an impact indicator over the duration of the project due to the project and non-project activities and $(I_{CA} - I_{CB})$ indicates the change in the level of an impact indicator due to the non-project activities alone.

Uses of Evaluation

The results of evaluation studies should be used as feedback to policy makers, planners, administrators, implementers, bankers, researchers and to other agencies directly or indirectly associated with the programme. Evaluation could make policy makers and implementers aware of the inadequacies of the 'blueprint' approach to planning and implementation of rural development programmes. To be of any use, the results of evaluation should be presented in simple and non-technical language, and should be made available to the potential users in time.

The lessons derived from evaluation studies, including the reasons for good and bad performance, should be discussed with both the programme planners and administrators, as well as with the beneficiaries.

Any systematic but simple procedure requiring the staff to evaluate the projects on which they are working is likely to be beneficial in heightening their awareness and in communicating their problems to levels at which some of them can be tackled. In the context of IRDP, this means that the assistant project officers, extension officers and even village level workers (VLWs) should be encouraged to undertake some simple but systematic evaluation of their activities, and present their findings at annual staff meetings at the block and district levels. Of course, some training in how to conduct scientific evaluation would be necessary before they are asked to do the job.

At the end, we would like to caution that it is asking a lot of a social scientist, whether he be in a university or in the government, to make programme recommendations which require an assessment of the organisational and management aspects of implementation unless he is trained in management also, or has relevant managerial experience. This is perhaps one reason why so many of the proposals which are made by social scientists not trained/experienced in management are never implemented. One way of improving the chances of recommendations being implementable is to give priority to discussion and exchange of ideas between the evaluator who will make the recommendations, and the manager who will be faced with implementing them (Chambers 1974: 124).

In order to assess the impact of various rural development programmes, the Union Ministry of Rural Development undertakes concurrent evaluation studies from time to time with the help of reputed and independent research institutions/organisations. The main aim of the evaluation studies is to identify the strengths and weaknesses of various programmes, to enable the Ministry to apply corrective measures for improving their implementation. The evaluation studies are quite comprehensive and the survey schedules designed for the purpose cover a wide range of questions for eliciting information from the sample respondents. So far, several rounds of concurrent evaluation of the IRDP, the Jawahar Rozgar Yojana (JRY), the Million Wells Scheme (MWS) and the Indira Awas

Yojana (IAY) have been completed. The findings of the reports of all concurrent evaluation studies are sent to state governments, asking them to take suitable remedial actions to remove the bottlenecks/weaknesses as revealed in the findings of the studies. Besides regular concurrent evaluation of programmes, the monitoring division of the Ministry also carries out research studies from time to time (GoI 1997a: 101–03).

Also, the Union Ministry of Statistics and Programme Implementation has developed computer based systems for monitoring the progress of selected development programmes in the country and monitors their progress regularly.

MAIN POINTS

1. Implementation, monitoring and evaluation are all subsumed in the broader function of project management. Implementation may be regarded as a process by which a set of predetermined activities is carried out in a planned manner, with a view to achieving certain established objectives. Monitoring is a process of keeping a watch on the progress of a project vis-à-vis its targets and time schedule. Evaluation of a project is concerned with the assessment of the impact(s) of the project.
2. Massive investments have been made in rural development programmes since the beginning of the planning era and will continue to be made in the near future. Apart from several flaws in planning, there have been numerous operational problems in the implementation, monitoring and evaluation of the programmes. This has adversely affected the efficiency and effectiveness of the programmes.
3. There are two approaches to implementation, namely, the traditional (blueprint) approach and the open (people-centred) approach. The former is characterised by a mechanical view of planning and development, in which implementation is simply a tool of the powerful (donors, planners, politicians) and the latter places people at the centre of the entire process of implementation.
4. Some planning is required for plan implementation as well. A plan for implementation should, at the minimum, specify what is to be done, who is to do it, when it is to be done and how it is to be done. To begin with, the plan should be broken up into a number of projects, and then, for every project, an implementation system should be developed.
5. Both for preparing the implementation plan and for executing the project, an appropriate project organisation has to be developed, responsibilities for various tasks clearly assigned and the proper use of scientific equipment and tools ensured. Filling key positions with adequately skilled and experienced persons on time is also important.
6. Building interlinkages is necessary to complete the project in time and to derive full benefits from the interrelated projects, such as bridges and roads, irrigation and crop development projects, production, processing and marketing projects, power and industry, and so on. Both backward and forward linkages with other projects should be built and strengthened.

7. Given the multidisciplinary nature of rural development, and the multitude of governmental and non-governmental agencies engaged in the implementation of diverse agricultural and rural development programmes with different, and often conflicting, objectives, it is absolutely essential that the different development programmes in operation in an area be integrated and coordinated for optimum results.
8. The implementation of any rural development project on a national scale cannot be possible without the active and widespread participation of its clientele. This is why a rural development project authority, to be effective, must know how to make the project's clientele see themselves as partners in the effort and how to encourage the individual initiative dormant in the people.
9. We could distinguish between three types of evaluation, namely, *ex-ante* evaluation, concurrent evaluation and *ex-post* evaluation. In *ex-ante* evaluation, a project is assessed before it is executed; in concurrent evaluation, assessment is made while the project is underway; in *ex-post* evaluation, assessment is made after the project is completed. Both concurrent and *ex-post* evaluations are necessary for efficient and effective implementation of a rural development programme.
10. There are two commonly used approaches to evaluation: 'With and Without' and 'Before and After'. Ideally, both the approaches should be used to assess the impacts of a project on its clientele and other persons.
11. An external evaluator can contribute a lot by examining the systems of reporting and evaluation which already exist within the organisation, and trying to improve them and link them functionally with remedial action.
12. An internal evaluation based on personal impressions and the feedback of internal reporting systems can also be very useful, if it is done objectively and used constructively. Internal evaluation should not be used as an espionage system, and the internal evaluator should not be allowed to become a power-wielding centre.
13. The results of evaluation studies should be used as feedback to policy makers, planners, administrators, implementers, bankers, researchers and to other agencies directly or indirectly associated with the programme.
14. To be of any use, the results of evaluation should be presented in simple and non-technical language, and should be made available to the potential users in time.

QUESTIONS FOR DISCUSSION

- 15.1. Most of the rural development projects in India fail to achieve their objectives efficiently mainly because of lax implementation. Outline a strategy for improving the implementation of rural development projects.
- 15.2. What are the advantages of involving people/stakeholders in the process of implementation of rural development project?

- 15.3. Why are the government officers reluctant to involve people in implementation of rural development projects?
- 15.4. Illustrate with an example the differences between monitoring and evaluation.
- 15.5. Which one of the 'With and Without' and 'Before and After' approaches to evaluation is suitable in India and why?
- 15.6. What are the pros and cons of external evaluation and internal evaluation?

References and Select Bibliography

- Acharya, S.S. 1997. 'Agricultural Price Policy and Development: Some Facts and Emerging Issues', in the *Indian Journal of Agricultural Economics*, 52(1): 1–47.
- Adelman, Irma and C.T. Morris. 1967. *Society, Politics and Economic Development*. Baltimore: Johns Hopkins University Press.
- Agrawal, A.N. and S.P. Singh (eds). 1975. *The Economics of Under Development*. New Delhi: Oxford University Press.
- Aiyar, Ankleshwar and S. Swaminathan. 1995. 'Encouraging News About Poverty', *The Economic Times*, 14 December.
- Alavi, Hamza and Teodar Shanin (eds). 1982. *Introduction to the Sociology of 'Developing Societies'*. London: Macmillan.
- Alderman, Harold, George Merges and Roger Slade. 1987. 'Cooperatives and the Commercialisation of Milk Production in India: A Literature Review', IFPRI Working Paper on Commercialisation of Agriculture and Nutrition, No. 2, Washington, D.C.
- Alex, Alexander V. 1983. *Human Capital Approach to Economic Development*. New Delhi: Metropolitan.
- Alvares, Claude. 1985. *Another Revolution Fails*. New Delhi: Ajanta Publications.
- Anderson, Terry L. 1982. 'The New Resource Economics: Old Ideas and New Applications', *American Journal of Agricultural Economics*, 64: 928–34.
- (Anonymous). 1968. *Webster's Dictionary*, Third New International Edition, Springfield (Massachusetts): G. & C. Merriam Co.
- . 1978. 'Mahatma Gandhi on Rural Development', *Indian Farming*, October–November.
- . 2007. 'Poverty in India', *Kurukshetra*, 55(4): 44.
- Ansoff, Igor H., Roger P. Declerck and Robert L. Hayes (eds). 1976. *From Strategic Planning to Strategic Management*. London: John Wiley and Sons.
- Atkinson, Anthony B. 1970. 'On the Measurement of Equality', *Journal of Economic Theory*, 2(February): 253–54.
- . 1987. 'On the Measurement of Poverty', *Econometrica*, 55: 749–64.
- Balooni, Kulbhushan and Katar Singh. 2003. 'Institutional Financing of Wastelands Afforestation in India: Some Issues and Options', *Natural Resources Forum*, 27.
- Bandyopadhyay, D. 1988. 'Direct Intervention Programmes for Poverty Alleviation: An Appraisal', *Economic and Political Weekly*, 25 June: A77–A88.
- Barbier, Edward B. 1997. 'Introduction', *Environment and Development Economics*, Special Issue on Environmental Kuznets Curve, 2(4): 357–67.
- Barnett, T. 1988. *Sociology and Development*. London: Hutchinson.
- Bartelmuus, Peter. 1997. 'Whither Economics? From Optimality to Sustainability'. *Environment and Development Economics*, 2(3).
- Basu, D.N. and G.S. Guha. 1996. *Agro-Climatic Regional Planning in India, Vol. I: Concepts and Application*. New Delhi: Concept Publishing Co.

- Basu, D.N. and S.P. Kashyap. 1996. *Agro-Climatic Regional Planning in India, Vol. II: Themes and Cases*. New Delhi: Concept Publishing Co.
- Bauer, Peter. 1991. *The Development Frontier*. Cambridge: Harvard University Press.
- Berger, Peter L. and Richard John Neuhaus. 1977. *To Empower People: The Role of Mediating Structures in Public Policy*. Washington, D.C.: American Enterprise Institute for Public Policy Research.
- Boeke, J.H. 1953. *Economics and Economic Policy of Dual Societies*. New York.
- Bromley, D.W. 1991. *Environment and Economy: Property Rights and Public Policy*. Oxford: Basil Blackwell.
- Bronfenbrenner, Martin. 1966. 'The High Cost of Economic Development', in *Land Economics*, August 1953, quoted in Benjamin Higgins, *Economic Development: Principles, Problems and Policies*. Allahabad: Central Book Depot.
- Brown, Lester R., Alan Durning, Christopher Flavin, Hilary French, Jodi Jacobson, Nicholas Lenssen, Marcia Lowe, Sandra Postel, Michael Renner, Linda Starke, Pater Weber and John Young. 1993. *State of the World 1993*, London and New York: W.W. Norton.
- Bryant, Coralee and Louise G. White. 1980. *Managing Rural Development: Peasant Participation in Rural Development*. New Hartford (Connecticut): Kumarian Press.
- Buckley, Walter. 1967. *Sociology and Modern Systems Theory*. Englewood Cliffs (New Jersey): Prentice Hall, Inc.
- Central Statistical Organisation (CSO). 2004. *National Accounts Statistics*. New Delhi: Central Statistical Organisation, Ministry of Statistics and Programme Implementation, Government of India.
- . 2006. *National Accounts Statistics*. New Delhi: Central Statistical Organisation. Ministry of Statistics and Programme Implementation, Government of India.
- Centre for Science and Environment (CSE). 2001. *Down to Earth: Survival Primer, Society for Environmental Communications*, Centre for Science and Environment, New Delhi.
- Centre for Monitoring Indian Economy (CMIE). 1997. *Approach Paper to Ninth Five Year Plan*. Mumbai, February.
- Ciriacy-Wantrup, S.V. 1968. *Resource Conservation: Economics and Policies, 3rd Ed.* Berkeley: Division of Agricultural Sciences, University of California.
- Chambers, Robert. 1974. *Managing Rural Development, Ideas and Experience From East Africa*. Uppsala: Scandinavian Institute of African Studies.
- . 1983. *Rural Development: Putting the Last First*. London: Longman.
- . 1987. 'Sustainable Rural Livelihoods: A Strategy for People, Environment and Development', Commissioned Study No. 7, Institute of Development Studies at the University of Sussex, Brighton, England.
- Chand, Ramesh. 1997. 'Import Liberalisation and Indian Agriculture: The Challenge and Strategy'. New Delhi: National Centre for Agricultural Economics and Policy Research, Policy Paper 6.
- Cochrane, Willard W. 1969. *The World Food Problem: A Guardedly Optimistic View*. New York: Thomas Y. Crowell Company Inc.
- Daly, Herman E. 1990. 'Toward Some Operational Principles of Sustainable Development', *Ecological Economics*, 2: 1–6.
- Dandekar, V.M. 1972. 'Effectiveness in Agricultural Planning', *Teaching Forum: Development Processes and Planning*, 19 July. New York: The Agricultural Development Council.
- Dandekar, V.M. and Nilakanth Rath. 1971. *Poverty in India*. Pune: Indian School of Political Economy.
- Dantwala, M.L. 1970. 'From Stagnation to Growth', *Indian Economic Journal*, 18, October–December: 165–92.
- Dasgupta, A.K. 1978. 'Plan Priorities: Some Basic Issue', *Yojana*, 12(26 January): 16–18.
- Desai, D.K. 1983. *Management in Rural Development*. New Delhi: Oxford and IBH.
- Deshpande, D.V., M.K. Mudgal and K.K. Gupta. 1996. 'Regional Rural Banks at Cross Roads', Working Paper 9. Lucknow: Bankers Institute of Rural Development.
- Doornbos, Martin and Liana Gertsch. 1994. 'Sustainability, Technology and Corporate Interest: Resource Strategies in India's Modern Dairy Sector', in *Journal of Development Studies*, 30(3): 918.
- Doornbos, Martin Pietrvan Stuijvenberg and Piet Terhal. 1987. 'Operation Flood: Impact and Issues', in *Food Policy*, 12(4): 376–83.
- Doornbos, Martin, Frank van Dorsten, Manoshi Mitra and Piet Terhal. 1990. *Dairy Aid and Development: India's Operation Flood*, Indo-Dutch Studies on Development Alternatives, 3. New Delhi/Newbury Park/London: Sage Publications.
- Dorner, Peter. 1973. 'Institutions as Aids to Development', paper presented at the 15th International Conference of Agricultural Economists, Sao Paulo (Brazil), 19–30 August.
- Dulfer, E. 1974. 'Operational Efficiency of Agricultural Cooperatives in Developing Countries', Food and Agriculture Organisation (FAO) Development Paper No. 96. Rome: Food and Agriculture Organisation, United Nations Organisation.

- Dunn, Edgar S. 1971. *Economic and Social Development: A Process of Social Learning*. Baltimore: The Johns Hopkins University Press.
- Economic Commission for Asia and the Far East (ECAFE). 1950. *Foreign Investment Laws and Regulations in the ECAFE Region*. Bangkok: United Nations Economic Commission for Asia and the Far East, Committee on Industry and Trade.
- Ekaus, Richard S. and Kirit S. Parikh. 1968. *Planning for Growth: Multisectoral, Intertemporal Models Applied to India*. Cambridge (Massachusetts): The MIT Press.
- Ekins, Paul. 1991. 'A Strategy for Global Environmental Sustainability', *Development*, 2.
- Ensminger, Douglas. 1968. *An Evolving Strategy for India's Agricultural Development*. New Delhi: The Ford Foundation.
- . 1972. *Rural India in Transition*. New Delhi: All-India Panchayat Parishad.
- Fan, Shenggen, Peter, B.R. Hazell and T. Haque. 1998. 'Role of Infrastructure in Production Growth and Poverty Reduction in Indian Rainfed Agriculture', Project Report submitted to the Indian Council of Agricultural Research (ICAR), New Delhi; the World Bank, Washington; and the International Food Policy Research Institute, Washington.
- Food and Agriculture Organisation (FAO). 1989. *The State of Food and Agriculture 1989*, FAO Agriculture Series No. 22. Rome: Food and Agriculture Organisation.
- . 1996. *Production Year Book, 1995, Vol. 49*. Rome: Food and Agriculture Organisation, United Nations Organisation.
- . 2001. *Global Forest Resources Assessment 2000. Main Report*. FAO Forestry Paper 140. Rome: Food and Agriculture Organisation.
- Forest Survey of India (FSI). 2001. *State of Forest Report 2001*. Dehradun: Forest Survey of India, Government of India, India.
- Foster, J. 1984. 'On Economic Poverty: A Survey of Aggregate Measures', *Advances in Econometrics*, 3: 215–51.
- Foster, John, Joel Greer and Erick Thorbecke. 1984. 'A Class of Decomposable Poverty Measures', *Econometrica*, 52: 761–66.
- Fox, Karl A., Jati K. Sengupta and Erik Thorbecke. 1966. *The Theory of Quantitative Economic Policy with Applications to Economic Growth and Stabilisation*. Amsterdam: North Holland Publishing Company.
- Fei, John C.H. and Gustay Ranis. 1964. *Development of the Labour Surplus Economy: Theory and Policy*. Homewood (Illinois): Richard D. Irwin Inc.
- Gaikwad, V.R., Gunvant M. Desai, Paul Mampilly and V.S. Vyas. 1977. *Development of Intensive Agriculture: Lessons from IADP*. Ahmedabad: Centre for Management in Agriculture, Indian Institute of Management.
- Gangrade, K.D. 1997. 'Power to Powerless: A Silent Revolution through Panchayat Raj System', *Journal of Rural Development*, 6(4): 755–56.
- Ghosh, A. 1968. *Planning, Programming, and Input-Output Models: Selected Papers on Indian Planning*. Cambridge: Cambridge University Press.
- George, Shanti. 1987. 'Stemming Operation Flood: Towards an Alternative Dairy Policy for India', *Economic and Political Weekly*, 26 September.
- . 1988. 'Cooperatives and Indian Dairy Policy: More Anand than Pattern', in D.W. Attwood and B.S. Baviskar (eds), *Who Shares? Cooperatives and Rural Development*. New Delhi: Oxford University Press.
- Gibbons, David. 1997. 'Targetting the Poor and Covering Costs', paper presented at the Micro-Credit Summit and communicated to the author via e-mail by Robert Gailey, Research Director, Micro-Credit Summit Secretariat, under the auspices of the 'Poverty Discussion Group' programme.
- Gittinger, J. Price. 1982. *Economic Analysis of Agricultural Projects, 2nd edition*. Baltimore: The Johns Hopkins University Press.
- Government of India (GoI). 1961. *Towards a Self Reliant Economy: India's Third Plan, 1961–66*. New Delhi: Planning Commission, Government of India.
- . 1963. *Intensive Agricultural District Programme: Report (1961–63)*. New Delhi: Expert Committee on Assessment and Evaluation, Ministry of Food and Agriculture, Government of India.
- . 1968. *Modernising Indian Agriculture (1960–68)*, Vol. 1. New Delhi: Expert Committee on Assessment and Evaluation, Ministry of Food and Agriculture, C. D. and Cooperation, Government of India.
- . 1975. *Report on Evaluation Study of Small Farmers, Marginal Farmers and Agricultural Labourers Project, 1974–75*, Chapter 6. New Delhi: Planning Commission, Government of India.
- . 1976. *Report of the National Commission on Agriculture 1976, Part II: Policy and Strategy*. New Delhi: Ministry of Agriculture and Irrigation, Government of India.

- Government of India (GoI). 1977. *Report of the Review Committee on Pilot Intensive Rural Employment Project (PIREP)*, pp. 11–19. New Delhi: Ministry of Irrigation and Agriculture, Government of India.
- . 1978a. *Report of the Finance Commission*. New Delhi: Government of India.
- . 1978b. *Report of the Working Group on Block Level Planning (1978)*. New Delhi: Planning Commission, Government of India.
- . 1979. *Study of CSRE 1971–74*. New Delhi: Planning Commission, Government of India.
- . 1980. *Manual on Integrated Rural Development Programme*. New Delhi: Ministry of Rural Reconstruction, Government of India.
- . 1984. *Report of the Evaluation Committee on Operation Flood II*. New Delhi: Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation.
- . 1987. *National Water Policy 1987*. New Delhi: Government of India, Ministry of Agriculture, Department of Agriculture and Cooperation.
- . 1988. *National Forest Policy 1988*. New Delhi: Ministry of Environment and Forests, Government of India.
- . 1997a. *Annual Report 1996–97*. New Delhi: Ministry of Rural Areas and Employment, Government of India.
- . 1997b. *Economic Survey 1996–97*. New Delhi: Ministry of Finance, Government of India.
- . 1997c. *Agricultural Statistics at a Glance*. New Delhi: Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India.
- . 1998a. *India 1998*. New Delhi: Ministry of Information and Broadcasting, Publications Division.
- . 1998b. *Economic Survey 1997–98*. New Delhi: Ministry of Finance, Government of India.
- . 1999. 'Integrated Water Resources Development: A Plan for Action', Report of the National Commission for Integrated Water Resources Development, Volume I. New Delhi: Ministry of Water Resources, Government of India.
- . 2000. *The National Policy on Agriculture* Department of Agriculture and Cooperation. New Delhi: Ministry of Agriculture, Government of India.
- . 2002a. *Annual Report 2001–02*. New Delhi: Department of Rural Development, Ministry of Rural Development, Government of India.
- . 2002b. *Tenth Five Year Plan (2002–2007), Volume III: State Plans, Trends, Concerns and Strategies*. New Delhi: Planning Commission, Government of India.
- . 2002c. *National Water Policy 2002*. New Delhi: Ministry of Water Resources, Government of India.
- . 2002d. *National Policy on Cooperatives*. New Delhi: Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India.
- . 2004a. *Agricultural Statistics at a Glance 2004*. New Delhi: Department of Agriculture and Cooperation, Government of India.
- . 2004b. *Marine Fishing Policy 2004*. New Delhi: Department of Animal Husbandry and Dairying, Ministry of Agriculture, Government of India.
- . 2005a. *Seventeenth Livestock Census, 2003*, Department of Animal Husbandry and Dairying, Ministry of Agriculture, Government of India, New Delhi. Available on <http://dahd.nic.in/Census.htm>. Accessed in March 2008.
- . 2005b. *National Rural Employment Guarantee Act 2005*. New Delhi: Ministry of Rural Development, Government of India.
- . 2006a. *Agricultural Statistics at a Glance 2006*. Ministry of Agriculture, Department of Agriculture and Cooperation, Government of India, New Delhi. Available at <http://dacnet.nic.in/eands/agStat06-07htm>. Accessed in March 2008.
- . 2006b. *Report of the XI Plan Working Group on Poverty Elimination Programmes*, Planning Commission (Rural Development Division), Government of India, New Delhi.
- . 2006d. *Serving Farmers and Saving Farmers*. Fifth and Final Report, National Commission on Farmers, Ministry of Agriculture, Government of India, New Delhi.
- . 2007a. *Agricultural Statistics at a Glance 2006*. Department of Agriculture and Cooperation, Government of India, New Delhi.
- . 2007b. *Union Budget and Economic Survey*, Ministry of Finance, Government of India, New Delhi.
- . 2008. *Union Budget and Economic Survey*, Ministry of Finance, Government of India, New Delhi. Available on <http://www.indiabudget.nic.in/es2007-08>. Accessed in March 2008.
- Gopalakrishnan, P. and V.E. Ramamoorthy. 1993. *Text Book of Project Management*. New Delhi: Macmillan India Ltd.
- Gould, Julius and W.L. Kolb. 1967. *A Dictionary of Social Sciences*, 4th Printing. UNRS. Co. Paris: UNESCO.
- Gouldner, Alvin. 1959. 'Organisational Analysis', in Robert K. Merton (ed.), *Sociology Today*. New York: Basic Books Inc.
- Grafton, R. Quentin, Linwood H. Pendelton and Harry W. Nelson. 2001. *A Dictionary of Environmental Economics, Science, and Policy*. Cheltenham, UK: Edward Elgar.

- Gran, Guy. 1983. *Development by People: Citizens Construction of a Just World*. New York: Praeger.
- Gulati, Ashok. 1989. 'Input Subsidies in Indian Agriculture: A State-wise Analysis', *Economic and Political Weekly*, 24(25, June): A57-65.
- Gulati, Ashok and A.N. Sharma. 1992. 'Subsidising Agriculture: A Cross Country View', *Economic and Political Weekly*, 27(39, September): A106-11.
- Gupta, K.R. 1976. *Economics of Development and Planning*. New Delhi: Atma Ram and Sons.
- Gupta, S.P. 1995. 'Economic Reform and its Impact on Poor', *Economic and Political Weekly*, 3 June: 1295-1313.
- Halite, Graham. 1968. *The Economics of Agricultural Policy*. Oxford: Basil.
- Hamza, Alavi and Teodor Shanin (eds). 1982. *Introduction to the Sociology of Developing Societies*. London: Macmillan.
- Haque, M.S. 1997. 'Development of India's Wastelands through Institutional Credit: A 15-Year Plan', in T.K. Sarkar, R.C. Vaish, V. Verma and S.P. Gawande (eds), *Advances in Wastelands Development*. New Delhi: Soil Conservation Society of India.
- Hardin, G. 1968. 'The Tragedy of the Commons', *Science*, 162: 1143-1248.
- Harold, Alderman, George Mergos and Roger Slade. 1987. 'Cooperatives and the Commercialisation of Milk Production in India: A Literature Review', IFPRI Working Paper on Commercialisation of Agriculture and Nutrition, No. 2, Washington DC.
- Hayami, Yujiro and V.W. Ruttan. 1970. 'Agricultural Productivity Differences among Countries', *The American Economic Review*, 60(5, December): 895-911.
- . 1971. *Agricultural Development: An International Perspective*. Baltimore: The Johns Hopkins University Press.
- Heady, Earl O. 1965. *Agricultural Policy Under Economic Development*. Ames (Iowa): Iowa State University Press.
- Hickman, Bert G. (ed.). 1965. *Quantitative Economic Policy*. Washington: The Brookings Institution.
- Higgins, Benjamin. 1966. *Economic Development: Principles, Problems and Policies*. Allahabad: Central Book Depot.
- Hirway, Indira. 1988. 'Reshaping IRDP: Some Issues', *Economic and Political Weekly*, 25 June: A89-95.
- Honadle, George and Rudi Klauss (eds). 1979. *International Development Administration: Implementation Analysis for Development Projects*. New York: Praeger Publishers.
- Hunter, Guy. 1970. *The Administration of Agricultural Development: Lessons from India*. London: Oxford University Press.
- Ickis, John C. 1983. 'Structural Response to New Rural Development Strategies', in David C. Korten and Felipe B. Alfonso (eds), *Bureaucracy and the Poor: Closing the Gap*. West Hartford (Connecticut): Kumarian Press.
- Indian Dairy Corporation. 1982. *Eleventh Annual Report, 1980-81*.
- Jena, A.C. 1998. 'PDS: An Overview of Policies and Programme Implementation', in R.C. Choudhury and S. Rajakutty (eds), *Fifty Years of Rural Development: Retrospect and Prospect*, Vol. II. Hyderabad: National Institute of Rural Development.
- Jesus, Ed C. De. 1984. 'Learning about Bureaucratic Reorientation', paper presented at the 4th International Conference of Management Institutes Working Group on Social Development Management, Ahmedabad, 23-27 January.
- Johnston, Bruce F. and William C. Clark. 1982. *Redesigning Rural Development: A Strategic Perspective*. Baltimore: The Johns Hopkins University Press.
- Joshi, P.K. and D. Jha. 1991. 'Farm Level Effects of Soil Degradation in Sharda Sahayak Irrigation Project', Working Paper on Future Growth in Indian Agriculture, Washington, D.C.: Central Soil Salinity Research Institute, Indian Council of Agricultural Research, and the International Food Policy Research Institute.
- Kakwani, N.C. and N. Poddar. 1976. 'Efficiency Estimation of the Lorenz Curve and Associated Inequality Measures From Grouped Observations', *Econometrica*. 44(1): 137-48.
- Kanwar, Rakesh. 2001. 'Disaster Management', *The Administrator*, XLIV(December): 96-110.
- Katiha, Pradeep K. 2006. 'The Status of and Prospects for Inland Aquaculture and Culture-based Fisheries in India', Unpublished paper included in the *Compendium of Abstracts: Water and Equity*, presented at the 5th IWMI-Tata Annual Partners Meet, Institute of Rural Management, Anand, 8-10 March.
- Khera, S.S. 1977. *Government in Business*. New Delhi: National Publishing House.
- Kirschen, E.S., J. Benard, H. Besters, F. Blackaby, O. Eckstein, J. Faaland, F. Hartog, L.L. Morissons and E. Tosco. 1964. *Economic Policy in Our Time*. I. Amsterdam: North Holland Publishing Company.
- Kohli, Uddesh. 1979. 'Implementation Planning', *Yojana*, 23(11, June): 13-17.
- Korten, David C. (ed.). 1980. 'Community, Organisation and Rural Development: A Learning, Process Approach', *Public Administration Review*, September-October.
- . 1981. 'The Management of Social Transformation', *Public Administration Review*, November-December: 610.
- Korten, David C. and Felipe B. Alfonso (eds). 1983. *Bureaucracy and the Poor: Closing the Gap*. West Hartford (Connecticut): Kumarian Press.

- Korten, David C. and Rudi Klaus (eds). 1984. *People Centred Development*. West Hartford (Connecticut): Kumarian Press.
- Krishnaji, N. 1997. 'Human Poverty Index: A Critique', *Economic and Political Weekly*, 30 August: 2202–05.
- Kumar, Nalini. 1997. 'Operation Flood: Literature Review and Reconciliation', Occasional Publication No. 13. Anand: Institute of Rural Management.
- Kumar, Pradeep and S.P. Pal. 1998. 'Delivery Makes the Difference', *The Economic Times*, 16 May.
- Kundu, Amitabh. 1980. *Measurement of Urban Process: A Study in Regionalisation*. Mumbai: Popular Prakashan.
- Kurien, V. 1978. 'Food Aid in the Form of Dairy Products', speech delivered at the 20th International Dairy Congress, Paris, 26–30 June. Anand: National Dairy Development Board.
- . 1992. 'Food Aid for Dairy Development', *Dairy India 1992*, 4th Annual Edition. New Delhi.
- Kuznets, Simon. 1955. 'Economic Growth and Income Inequality', *American Economic Review*, 49: 1–28.
- Law, Vivek. 2002. 'Banking on Fraud', *India Today*, June 10.
- Leibenstein, Harvey. 1957. *Economic Backwardness and Economic Growth*. New York: John Wiley.
- Lewis, W. Arthur. 1954. 'Economic Development with Unlimited Supplies of Labour', *The Manchester School*, 22 May: 139–92.
- . 1955. *The Theory of Economic Growth*. London: George Allen and Unwin Ltd.
- Littrell, W. Boyd. 1980. 'Bureaucracy in the Eighties: Introduction', *The Journal of Applied Behavioural Science*, 16(3, July–September): 560–61.
- Lorsch, Jay W. and Paul R. Lawrence. 1972. *Organisation Planning: Cases and Concepts*. Homewood (Illinois): Richard D. Irwin Inc.
- Mathur, Ashok. 2005. 'Rural Development: Indices and Linkages', in National Institute of Rural Development (NIRD), *India: Rural Development Report-Rural Institutions, 2005*. Hyderabad: National Institute of Rural Development, Ministry of Rural Development, Government of India.
- MIT. 1957. *The Objectives of United States Economic Assistance Programmes*. Washington: Massachusetts Institute of Technology, Centre for International Studies.
- Macy, Joanna. 1983. *Dharma and Development: Religion as Resource in the Sarvodaya Self-Help Movement*. West Hartford (Connecticut): Kumarian Press.
- Maheshwari, Shriram. 1987. 'Voluntary Action in Rural Development in India', *Indian Journal of Public Administration*, July–September: 560–61.
- March, James G. and Herbert A. Simon. 1958. *Organizations*. New York: John Wiley and Sons Inc.
- Mascarenhas, R.C. 1988. *A Strategy for Rural Development: Dairy Cooperatives in India*. New Delhi: Sage Publications.
- McKay, John. 1990. 'The Development Model', *Development, Journal of the Society for International Development*, 33(3/4): 55.
- Meadows, Donella H., Dennis L. Meadows, Jørgen Randers and William W. Behrens III. 1972. *The Limits to Growth*. New York: Universe Books.
- Mehta, Shiv R. 1984. *Rural Development Policies and Programmes*. New Delhi: Sage Publications.
- Meier, Gerald M. 1976. *Leading Issues in Economic Development*, 3rd Edition. New York: Oxford University Press.
- Meier, Gerald M. and R.E. Baldwin. 1957. *Economic Development: Theory, History, and Policy*. New York: Wiley.
- Mellor, John W. 1966. *The Economics of Agricultural Development*. Ithaca: Cornell University Press.
- Mergos, George and Roger Slade. 1987. 'Dairy Development and Milk Cooperatives: The Effect of a Dairy Project in India', World Bank, Discussion Paper No. 15, Washington DC.
- Mikesell, Raymond F. 1968. *The Economics of Foreign Aid*. Chicago: Aldine Publishing Company.
- Minhas, B.S. 1974. *Planning and the Poor*. New Delhi: S. Chand and Company Limited.
- Minhas, B.S., L.R. Jain and S.D. Tendulkar. 1991. 'Declining Incidence of Poverty into the 1980s: Evidence vs Artefacts', *Economic and Political Weekly*, July.
- Mishra, S.N. and Ramesh Chand. 1995. 'Private and Public Capital Formation in Indian Agriculture: Comments on Complementarity Hypothesis and Others', *Economic and Political Weekly*, 30(24): A64–79.
- Moench, Marcus and Dinesh Kumar. 1997. 'Distinction between Efficiency and Sustainability: The Role of Energy Prices in Groundwater Management', in Anil Agarwal (ed.), *The Challenge of the Balance: Environmental Economics in India*, Proceedings of a National Environment and Economics Meeting, Centre for Science and Environment, New Delhi.
- Morgan, Theodore and George W. Betz (eds). 1970. *Economic Development: Readings in Theory and Practice*. Belmont (California): Wadsworth Publishing Company Inc.
- Moris, Jone. 1981. *Managing Induced Rural Development*. Bloomington: Indiana University, International Development Institute.
- Morris, David and Michelle B. McAlpin. 1982. *Measuring the Condition of India's Poor: The Physical Quality of Life Index*. New Delhi: Promilla and Company Publishers.

- Mosher, A.T. 1966. *Getting Agriculture Moving*. New York: Frederick A. Praeger Inc.
- . 1976. *Thinking About Rural Development*. New York: Agricultural Development Council.
- Murdick, Robert G. and Joel E. Ross. 1971. *Information Systems for Modern Management*, 2nd Edition. New Delhi: Prentice-Hall of India Pvt Ltd.
- Muthalagu, K. 2007. 'Poverty Eradication in India under Anti-poverty Programmes: Some Observations', *Kuruksheetra*, 56(2): 4.
- Myrdal, Gunnar. 1957. *Economic Theory and Under-developed Regions*. Mumbai: Vora and Co. Publishers Pvt Ltd.
- National Bank for Agricultural and Rural Development (NABARD). 1997. *Annual Report 1996–97*. Mumbai: NABARD.
- . 2007. *Annual Report 2006–07*. Mumbai: NABARD.
- National Dairy Development Board (NDDB). 1997. *Annual Report 1996–97*. Anand: NDDB.
- . 2007. *Annual Report 2006–07*. Anand: NDDB.
- National Institute of Rural Development (NIRD). 1996. *Rural Development Statistics 1994–95*. Hyderabad: NIRD.
- . 2005. *India Rural Development Report 2005–06*. Hyderabad: NIRD.
- National Sample Survey Organisation (NSSO). 2006. *61st Round Report, July 2004-June 2005*, Report No.508 (61/1.0/1), NSSO. New Delhi: Ministry of Statistics and Programme Implementation, Government of India.
- Owens, Edgar and Robert Shaw. 1972. *Development Reconsidered*. New Delhi: Oxford and IBH Publishing Company.
- Pal, Suresh and Alka Singh. 1997. 'Agricultural Research and Extension in India: Institutional Structure and Investments', Policy Paper 7. New Delhi: National Centre for Agricultural Economics and Policy Research.
- Panda, Snehlata. 1997. 'Political Empowerment of Women: A Case of Orissa', *Journal of Rural Development*, 6(4): 663.
- Patel, Amrita. 1996. 'Operation Flood: The Next Step', *Dairy India* 1997. New Delhi.
- Paul, Samuel. 1982. *Managing Development Programs: The Lessons of Success*. Boulder, Colorado: Westview Press.
- Pigou, A.C. 1962. *The Economics of Welfare*, 1920 Reprint, London: The English Language Book Society and Macmillan.
- Postel, Sandra. 1990. 'Toward a New ECO-nomics', *World-Watch*, September–October.
- Prasad, Brahmanand. 1968. 'Foreign Technology and India's Economic Development', *International Development Review*, June. Washington: Society for International Development.
- Pursell, G. and Ashok Gulati. 1993. 'Liberalising Indian Agriculture: An Agenda for Reform', Policy Research Working Papers, Working Paper Series 1172, International Economic Department, The World Bank, Washington, DC.
- Radhakrishna, R. (ed.). 2008. *India Development Report 2008*. Mumbai: Indira Gandhi Institute of Development Research, and New Delhi: Oxford University Press.
- Radhakrishna, R. and Shovan Ray (eds). 2005. *Handbook of Poverty: Perspectives, Policies and Programmes*. New Delhi: Oxford University Press.
- Ramakrishnaiah, D. 1980. 'Area Development Planning for Agriculture in Naurai Watershed, Almora (U.P): A Multi-period Programming Approach', Unpublished Ph.D. Thesis, G.B. Pant University of Agriculture and Technology, Pantnagar, Nainital, Uttar Pradesh, pp. 90–131.
- Ranis, Gustav and John C.H. Fei. 1970. 'A Theory of Economic Development', in Theodore Morgan and George W. Betz (eds), *Economic Development: Readings in Theory and Practice*. Belmont (California): Wadsworth Publishing Company Inc.
- Rath, Nilakanth. 1985. 'Garibi Hatao: Can IRDP Do It?', T.A. Pai Memorial Lecture-2. Also in *Economic and Political Weekly*, 9 February: 20–21.
- . 1989. 'Agricultural Growth and Investment in India', *Journal of Indian School of Political Economy*, 1(1).
- Raymond, Susan. 1996. 'Corporate Voluntarism: Private Support for Social Policy', in *Economic Reform Today*, 4. Washington: Centre for International Private Enterprise.
- Reserve Bank of India (RBI). 2000. *Report of the High Power Committee on Urban Cooperative Banks*, RBI Bulletin, January. Mumbai: RBI.
- Rosenstein-Rodan, P.N. 1970. 'Notes on the Theory of the "Big Flush"', in Theodore Morgan and George W. Betz (eds), *Economic Development: Readings in Theory and Practice*. Belmont (California): Wadsworth Publishing Company Inc.
- Rostow. 1960. *The Stages of Economic Growth: A Non-Communist Manifesto*. London: Cambridge University Press.
- Satish, P. 2007. 'Rural Infrastructure and Growth: An Overview', *Indian Journal of Agricultural Economics*, 62(1).
- Schickele, Rainer. 1954. *Agricultural Policy: Farm Programmes and National Welfare*. Lincoln: University of Nebraska Press.
- Schultz, W. Theodore. 1964. *Transforming Traditional Agriculture*. Ludhiana: Lyall Book Depot.
- Schumpeter. 1949. 'Economic Theory and Entrepreneurial History', *Change and Entrepreneur*.
- Seers, Dudley. 1969. 'The Meaning of Development', paper presented at the Eleventh World Conference of the Society for International Development, New Delhi.

- Sehgal, J. and I.P. Abrol. 1994. *Soil Degradation in India: Status and Impact*. New Delhi: Oxford and IBH.
- Sen, A.K. 1976. 'Poverty: An Ordinal Approach to Measurement', *Econometrica*, 44: 219–31.
- Shah, Dilip R. 1992. *Dairy Cooperativisation: An Instrument of Social Change*. New Delhi and Jaipur: Rawat Publications.
- Sharma, Miriam and Urmila Vanjani. 1993. 'When More Means Less: Assessing the Impact of Dairy Development on the Lives and Health of Women in Rural Rajasthan (India)', *Social Science Medicine*, 37: 11.
- Shetty, S.L. 1990. 'Investment in Agriculture: Brief Review of Recent Trends', *Economic and Political Weekly*, 25(7 and 8).
- Society for International Development (SID). 1969. *United Nations Panel on Flow of Foreign Capital to Developing Countries*. Washington DC: Society for International Development.
- Simon, Julian L. and Herman Kahn. 1984. *The Resourceful Earth: A Response to Global 2000*. New York: Basil Blackwell.
- Singh, Hoshiar (ed.). 1985. *Rural Development in India: Evaluative Studies in Policies and Programmes*. Jaipur: Printwell Publishers.
- Singh, Katar. 1973. 'The Impact of New Agricultural Technology on Farm Income Distribution in the Aligarh District of Uttar Pradesh', *Indian Journal of Agricultural Economics*, 28(2, April–June): 4.
- . 1994. *Managing Common Pool Resources: Principles and Case Studies*. Delhi: Oxford University Press.
- . 1995. 'The Watershed Management Approach to Sustainability of Renewable Common Pool Natural Resources: Lessons of India's Experience', Research Paper 14, Institute of Rural Management, Anand.
- . 1997. 'Property Rights and Tenures in Natural Resources', in John Kerr, Dinesh K. Marothia, Katar Singh, C. Ramasamy and William R. Bentley (eds), *Natural Resource Economics: Theory and Application in India*. New Delhi: Oxford and IBH Publishing Co.
- . 1998. 'Cooperative Property Rights as an Instrument of Managing Groundwater', in Marcus Moench (ed.), *Groundwater Law: The Growing Debate*. Ahmedabad: Vikram Sarabhai Centre for Development Interaction-VIKSAT, and Nehru Foundation for Development.
- . 1999. *Rural Development: Principles, Policies and Management*, 2nd edition. New Delhi: Sage Publications.
- Singh, Katar and Anil Shishodia. 1992. 'Irrigation Management in India: Need for Reforms', *Indian Economic Panorama*, 2(1): 39–41.
- . 2007. *Environmental Economics: Theory and Applications*. New Delhi: Sage Publications.
- Singh, Katar and J. Acharya. 1986. 'The Impact of the Madhya Pradesh Dairy Development Project', Research Report. Anand: Institute of Rural Management.
- Singh, Katar and V. Mukunda Das. 1982. 'Impact of Operation Flood at the Village Level', IRMA Research Report I. Anand: Institute of Rural Management.
- Singh, Katar and Vishwa Ballabh (eds). 1996. *Cooperative Management of Natural Resources*. New Delhi: Sage Publications.
- Singh, Katar, P. Durgaprasad and K. Vengama Raju. 1985. 'Impact of Milch Animals Programme of IRDP in Sabarkantha District, Gujarat', Research Report. Anand: Institute of Rural Management.
- Society for Promotion of Wastelands Development (SPWD). 1984. *Society for Promotion of Wastelands Development*. Monograph. New Delhi: Society for Promotion of Wastelands Development.
- Somjee, Geeta and A.H. Somjee. 1989. *Reaching Out to the Poor: The Unfinished Rural Revolution*. London: Macmillan.
- Stern, David I. 1998. 'Progress on the Environmental Kuznets Curve?', *Environment and Development Economics*, 3(2): 173–96.
- Stoltenberg, Thorvald. 1989. 'Devising World Policy Options for Sustainable Development', *Development*, 1.
- Swaminathan, M.S. 1996. 'Science and Technology for Sustainable Food Security', *Indian Journal of Agricultural Economics*, 51(1 and 2).
- The Times of India*. 1998. 'Alarming Rise in Salinity', 22 May.
- . 1997. 'Ground Realities: Soil Degradation', 25 August.
- Tinbergen, Jan. 1952. *On the Theory of Economic Policy*. Amsterdam: North Holland Publishing Company.
- . 1966. *Economic Policy: Principles and Design*. Amsterdam: North Holland Publishing Company.
- . 1968. *Central Planning*. New Haven: Yale University Press.
- Tadaro, Michael P. 1977. *Economic Development in the Third World*. London: Longman.
- . 1995. *Economic Development*, 5th Edition. New York and London: Longman.
- Toffler, Alvin. 1980. *The Third Wave*. New York: William Morrow and Company Inc.

- United Nations (UN). 1992. *Energy Statistics Year Book*, quoted in Katar Singh (1999), 'Sustainable Development: Some Reflections', *Indian Journal of Agricultural Economics*, 54 (1).
- . 1998. *Framework Convention on Climate Change*. New York: United Nations Organisation.
- UN/FAO. 1972. *Interim Evaluation Report of the Inter-Agency (FAO/WFP 1972) Mission on Operation Flood (India-618)*.
- . 1976. Detailed Report of the Second UN/FAO World Food Programme Evaluation Mission on Operation Flood (India-WFP-618).
- UN/FAO World Food Programme. 1981. 'Milk Marketing and Dairy Development', (Operation Flood-I), Terminal Evaluation Report on Project India 618, prepared by an Inter-Agency Mission which visited India from 9 February to 8 March 1981.
- United Nations Development Programme (UNDP). 1990. *Human Development Report 1990*. New York: Oxford University Press.
- . 1991. *Human Development Report 1991*. New York: Oxford University Press.
- . 1994. *Human Development Report 1994*. New York: Oxford University Press.
- . 1996a. *Human Development Report 1996*. New York: Oxford University Press.
- . 1996b. *India's External Development Partners; Profiles of Cooperation Programmes*. New Delhi: UNDP.
- . 1997. *Human Development Report 1997*. New York: Oxford University Press.
- . 2003. *Human Development Report 2003*. New York: Oxford University Press.
- . 2008. *Human Development Reports-2007/2008 Report-Indicators*. New York: Oxford University Press.
- Uphoff, Norman T. (ed). 1983. *Rural Development and Local Organisations in Asia-3: South East Asia*. New Delhi: Macmillan India Limited.
- Uphoff, Norman T. and Milton J. Esmen. 1983. *Local Organisation for Rural Development: Analysis of Asian Experience*. Ithaca (New York): Cornell University, and Rural Development Committee, Centre for International Studies.
- Vaishnav, P.H. and K.V. Sundaram. 1978. 'Integrating Development Administration at the Area Level', a note incorporated in the *Report of the Working Group on Block Level Planning*. New Delhi: Planning Commission, Government of India.
- Vyas, V.S. 1998. *Agricultural Trade Policy and Export Strategy*, Presidential Address, XII Annual Conference on Agricultural Marketing, Institute of Development Studies, Jaipur.
- Waterston, Albert. 1965. *Development Planning: Lessons of Experience*. Baltimore: The Johns Hopkins University Press.
- . 1970. 'A Hard Look at Development Planning', in Theodore Morgan and George W. Betz (eds). *Economic Development, Readings in Theory and Practice*. Belmont (California): Wadsworth Publishing Company Inc.
- Water Supply and Sanitation Collaborative Council, (WSSCC). 1999. 'Vision 21: Water for People in the 21st Century', paper presented at the 25th Water Engineering Development Centre (WEDC) Conference, 'Integrated Development for Water Supply and Sanitation', Addis Ababa, Ethiopia, 18–22 May.
- World Commission on Environment and Development (WCED). 1987. *Our Common Future. Report of World Commission on Environment and Development*. New Delhi: Oxford University Press.
- Weitz, Raanan. 1971. *From Peasant to Farmer: A Revolutionary Strategy for Development*. New York: Columbia University Press.
- World Food Programme (WFP). 1981. *UN/FAO World Food Programme Terminal Evaluation Report on Project India 618-'Milk Marketing and Dairy Development' (Operation Flood I)*. Rome: World Food Programme, FAO.
- Wharton Jr, Clifton, R. 1970. 'Stages in Agricultural Development', in Theodore Morgan and George W. Betz. (eds), *Economic Development: Readings in Theory and Practice*. Belmont (California): Wadsworth Publishing Company Inc.
- World Bank. 1988. *India: Wasteland Development Review*. Washington, DC: World Bank.
- . 1996. *Staff Appraisal Report: India Ecodevelopment Project*, Report No. 14914-IN, South Asia Department II, Agriculture and Water Division. Washington, DC: The World Bank.
- . 1997. *World Bank Development Report 1997*. New Delhi: Oxford University Press.
- World Resources Institute (WRI). 1992. *World Resources 1992–93: A Report by the World Resources Institute*. Oxford: Oxford University Press.
- . 1998. *World Resources 1998–99: A Guide to Global Environment*. Oxford: The World Resources Institute, Oxford University Press.
- Yotopoulos, Pan A. and J.B. Nugent. 1976. *Economics of Development: Empirical Investigation*. New York: Harper and Row Publishers.

Index

- Aam Admi Bima Yojana (AABY) 199, 217, 218, 219
Accelerated Rural Water Supply Programme (ARWSP) 236
adult literacy 44
afforestation 108, 224
Aga Khan Foundation 298
agrarian economy 109
agriculture(al),
contribution to GDP 26,103
 credit needs 33, 35, 283, 292
 policies 113
 development 100
 employment in 27, 206
 exports 27, 28
 foreign exchange earnings from 27–28
 imports 27
 inputs and outputs from 19–21
 institutional credit to 20
 investments in 22, 24, 162
 modernisation of 67
 neglect of 66
 policies 32, 106
 processing 31
 production 21, 101–02, 128, 149
 programmes, failure of 310
 raw materials for 27
 research 91–92
 subsector, role of 25–28
 surplus 95
 sustainable 144
Agricultural Cooperative Marketing Federation 150
Agricultural Insurance Company of India (AIC) 231
Agricultural Prices Commission 111
Agricultural Price Policy (APP) 110–12, 129
Agricultural and Rural Debt Relief Scheme 1990 113
agricultural scientists, technical 248, 249
Agriculturalists Loan Act 1884 113
agro-based industries 229
Agro-Climatic Regional Planning (ACRP) 248
All-India Credit Review Committee (1969) 113, 183, 184
All India Rural Credit Review Committee 196
All-India Rural Credit Survey Committee (1954) 113, 296
air pollution 84
AMUL 275
Anand Dairy Cooperative 94, 98
Anand-pattern dairy cooperatives (APDC) 192, 275
animal husbandry 224
animal species 139
Applied Nutrition Programme (ANP) 143
Arabari experiment 226
area planning 245
Asian Development Bank (ADB) 89, 284, 304

basic infrastructure, in rural areas 102–03
Behavioural Theory of Decision Making 265
Bharat Nirman Programme (BNP) 25, 103, 163, 235, 240
Bharatiya Agro-Industrial Foundation (BAIF) 276
Big Push theory 64, 65, 75
biodiversity, loss of 139–40
block-level planning, methodology for 244, 250–57
Boek's theory 73
Brayne, F.L. 179
Brundtland Commission, report of 132
Bureaucratic Re-Orientaion (BRO) 269, 270

calorie intake 51
Canada, human development index of 46
capital-labour ratio 22–23

- capital formation in rural sector 65, 66, 69, 87–89, 97, 161, 162
- carbon dioxide concentration 140
- CARE India 298
- casual employment 206
- Central Board of Direct Taxes (CBDT) 279
- Chambers, Robert 314
- Charter Policy of 1981 12, 195
of 1986 12
- class struggle 62, 74
- climate change 140
- Coastal Regulation Zone (CRZ) 123
- Cold War 61
- commercial banks 293, 304, 305
- commercial energy, consumption of 21
- Commission for Agricultural Costs and Prices (CACP) 111
- Committee to Review Arrangements for Institutional Credit for Agricultural and Rural Development, 1981 (CRAFICARD) 113
- Common Pool Resources (CPRs) 85, 145, 295
- Composite Rural Development Index (CRDI) 41–42, 96
- community development programme (CDP) 141–42, 153, 179–83, 196, 237–38, 270
at district level 182
at village level 182
financing 183
- Companies Act 1956 288
- Confederation of Indian Industry (CII) 94, 280
- Consolidated Fund of India (CFI) 285, 286
- Constitution of India 270, 285, 286
73rd Amendment to 271–73, 316
- cooperatives 273–75
and rural development 278–80
- cooperative credit societies 113, 291–93
- Cooperative Credit Societies Act 1904 113, 118, 291
of 1912 118
- cottage and village industries 29, 30
- Cotton Cooperation of India (CCI) 111
- Council of People's Action and Rural Technology (CAPART) 276–77, 280
- Crash Scheme of Rural Employment (CSRE) 213
- Critical Minimum Effort Thesis 64–65, 75
- Critical Minimum Effort Thesis of Harvey Leibenstein 64–65
- crop
production 21
yield 32
- customs duties 166
- cyclones 145
- dairy cooperatives and Operation Flood 192
- Dantwala, M.L. 91, 250, 246
- decentralisation 65, 70
planned approach to 245, 246–47
- Deep Sea Fishing Policy (DSFP) 1991 121, 195
- deficit financing 296–98, 306
- deforestation 139
- Department of Agriculture and Cooperation 106, 225, 226
- Department of Land Records 224, 225
- Dependency Theory 62–63, 74, 75
- Desert Development Programme (DDP) 223–25, 241
- devaluation 170, 171
- developing countries and globalisation 127
- development
constraints to 64, 253–54
management of 176
measures of 37–57
projects formulation of 254–55
identification and selection of 243
optimal mix of 256–57
planning 257
theories of 73–74
- Development Action Plan (DAPs) 294
- Development of Women and Children in Rural Areas (DWCRA) 210–11
- Differential Rate of Interest (DRI) Scheme 1972 113
- direct controls, instruments of 160, 171–73
- direct taxes 166
- Directive Principles of State Policy 103, 128
- disasters, management of natural 145–46
- disguised unemployment 66
- District Central Cooperative Banks (DCCB) 292
- District Planning Board 234
- district level planning 244, 250–57
- District Rural Development Agency (DRDA) 184, 209, 238, 316
- domestic savings 88
- drinking water supply in rural areas 236
- Drought Prone Area Programme (DPAP) 209, 222–23, 224, 225, 241
- droughts 18, 21, 145, 223
- Durkheim, Emile 62
- earthquakes 145
- East Asian Tigers 63
- ecology(ical) security 144
sustainability 132
- Economic Development Model of W. Arthur Lewis 65–67
- economy/economic
backwardness 64–65
development 65–67, 90, 145
and demand for food 28
growth 40, 60, 79

- and human development 43
- policy 104, 160
- and political environment, international 150–52
- progress 48
- in rural sector 25, 26
- sustainability 132
- ecosystem 139
- education
 - attainment of 43
 - deprivation of 56
 - investments in 86
- electrification, rural 224, 237
- elementary education programmes 232
- employment 24, 26–27
 - in organised sector 206
 - and population growth 86
 - problems of 101
- Employment Assurance Scheme (EAS) 214
- Empowered Committee 239
- energy
 - agricultural development and 148
 - consumption of 138
 - depletion of 138
 - needs, forests and 18
 - resources, use and management of 148–49
 - use for rural development 20–21
- Engels, Friedrich 62, 74
- environment(al) 35, 250
 - degradation of 84
 - and economic growth 33
 - pollution 123
- Environmental Kuznets Curve (EKC) hypothesis 83, 84
- equity-oriented and growth-oriented programmes 178–95, 196
- European Economic Community (EEC) 73
- exchange rates, instruments of 160, 170–71
- Exclusive Economic Zone (EEZ) 19, 120, 195
- expenditure instruments 161–65
 - government investments 161–63
 - subsidies and capital transfers 163–65
- exports 299
- Exported Oriented Units (EOU) 121, 195
- farm management/plans 249–50
- farmers
 - cooperatives of 150
 - credit needs of 35
 - rehabilitation programmes for 32
 - poverty among 22
 - suicides by 32, 35
- Farmers Service Society (FSS) 292
- Federation of Indian Chambers of Commerce and Industry (FICCI) 94
- fertiliser
 - consumption 19
 - use 91
- Finance Act of 1983 279
- Finance Commissions, State 272
- financing for rural development 283–307
- Fish Farmer Development Agency (FFDA) 120, 185, 194–95, 196
- fish/fishery
 - contribution to GDP 194
 - development policies of 120–22
 - policy 194
 - production of 19, 20, 194
 - resources 19
 - trade in 151
- Five Year Plan,
 - First 179, 180, 189, 196, 207, 304
 - Second 184, 207
 - Fourth 183, 223
 - Fifth 196, 207, 228, 231, 237, 246
 - Sixth 207, 231
 - Seventh 193, 207, 228, 231
 - Eighth 191, 193, 207, 304
 - Ninth 207, 225, 226, 286
 - Tenth (2002–07) 108, 204, 208, 238, 239
 - Eleventh 208, 286
- floods 18, 21
 - control of 323
- food/food grain,
 - demand for 28
 - production 20, 32, 85, 302
 - security 32, 35, 144, 149
- Food and Agricultural Organization (FAO) 73, 132, 302
- Food Corporation of India (FCI) 111, 150
- Food for Work (FFW) programme 212, 213, 247
- Ford Foundation 142, 184, 188, 190, 298
- foreign aid 298, 300–04
- foreign investments 299–300
- foreign exchange from agriculture 27–28
- forest(s)
 - based industries 229
 - contribution to GDP 18
 - degradation of 18, 137–38
 - income from 19
 - policy 106–08
 - products 18
 - resources 18–19
- Forest Development Agencies (FDAs) 226, 227
- foreign aid 89, 298, 303
- foreign exchange, control of 171–72
- foreign trade, control of 171–72
- Forest Resource Accounting (FRA) system 107, 108
- Frank, Andre Gunder 63
- free market 62

- fresh water availability 18
 full employment 206
- Gandhi, Mahatma 69, 147, 179, 270
 Gandhian model of rural development 69–72, 76
 Ganga Kalyan Yojana (GKY) 164
 Ganga river 137
 gender in development strategy 150
 General Price Index (GPI) 38, 39
 Gini Concentration Ratio (GCR) 46, 48–49, 57
 global warming 135, 140
 globalisation 35, 72, 127
 and rural development 125–28, 130
 government intervention
 in agricultural markets and marketing 149
 in rural sector 106, 128, 129
 government organisations 268–70
 and rural development 278
 Green Revolution 73, 91, 92, 118, 183, 184, 190–91, 196
 rice production under 191
 wheat production under 191
 greenhouse gases 140
 gross domestic product (GDP) 26, 34
 gross investment 81
 gross national product (GNP) 38–40, 46, 57, 80, 96
 groundwater table 137
 Grow More Food Campaign 180
 Grow More Food Inquiry Committee 180
 growth-oriented strategy 142–43, 178, 184–89
 Gujarat, cooperatives in 275
- Hagen, Everett 73
 Halse, Michael 192
 Hanumantha Rao Technical Committee 225
 Harrod-Domar model 87
 Hatch, Spencer 179
 head count measure 52, 53–54
 health service, access to 56
 in rural areas 232
 High Yielding Variety (HYV), Programme 32, 142, 196, 222, 301
 Housing Index 55
 rural 236
 human capital model of development 68–69, 76
 human development, definition of 43
 human development index (HDI) 42–46, 57, 81, 96
Human Development Report, 201
 1990 42–43
 1997 55
 human freedom index 44
 human poverty index (HPI) 55–56
 human resource(s) 86–87
 development 33, 69, 146–47
 role of 96
- Hume, Allan Octavian 275
- import duties 128
 Improvement Loans Act 1883 113, 286
 income 44, 49, 54
 family 41
 India's 44–46
 distribution of 46–49, 147
 inequality in 43, 48–49, 143
 personal 80
 poverty 201
 in rural areas 24
 and sustainable development 147
 see also per capita income
- Income Tax Act 1961 288
 Indian Council of Agricultural Research (ICAR) 92, 106, 194
 Indian Dairy Cooperation (IDC) 192, 302
 Indira Awaas Yojana (IAY) 236, 237–38, 241, 325–26
 Indira Gandhi National Old Age Pension Scheme (IGNOAPS) 217
 infant mortality 40
 inflation 88, 297–98, 206, 306
 infrastructure
 development of 123–24, 221, 231–40
 lack of 25, 31
 institutions/institutional, credit 293
 and organisations 97
 framework, changes in 160, 173–76
 Integrated Rural Development Programme (IRDP) 142, 164, 209–11, 219, 223, 227, 247, 290, 293, 305, 320–22, 325
 Integrated Tribal Development Projects (ITDP) 229
 Integrated Wasteland Development Programmes (IWDP) 224–25, 241
 Intensive Agricultural District Programme (IADP) 142, 184–89, 196
 farm planning under 187
 training programmes under 187–88
 Intensive Cattle Development Programmes (ICDPs) 142, 184, 189–90, 196
 International Cooperative Alliance (ICA) Congress 1995 119, 273
 International Energy Agency 138
 International Maize and Wheat Improvement Centre (CIMMYT) 190
 International Monetary Fund (IMF) 151, 170, 173, 284, 288, 304
 International Rice Research Institute (IRRI) 190
 International Union for Conservation of Nature and Natural Resources (IUCN) 132
 irrigation 136, 227, 235

- Jawahar Rozgar Yojana (JRY) 212, 213–14, 227, 272, 325
Jhum, *see* shifting cultivation
 Joint Forest Management (JFM) 108, 226–27
- Kaira District Cooperative Milk Producers' Union *see* AMUL
- Karnataka, implementation of WBCIS in 231
 Key Village Schemes (KVS) 189
 Keynesianism 62
 Khadi and Village Industries (KVIC) 29, 70–71, 280
 Kisan Credit Cards (KCC) 20
 Kurien, V. 275
 Kuznets, Simon 84
 Kyoto Agreement 1997 140
- labour
 -capital ratio 223
 productivity 65, 66
- land
 degradation of 135–36
 holdings 22–23, 33
 inheritance laws 22
 ownership 85
 reform policy 108–09
 settlement projects 324
 tenure system 106, 129, 302
- Land Mortgage Banks 292
 landslides 145
 Large-sized Adivasi Multipurpose Society (LAMPS) 292
 liberalisation 33, 35, 72, 114, 126, 277
 life expectancy 40, 41, 44
 livelihood and employment 26–27
 livestock 20, 22
 feed 19
- Lorenz Curve 46, 47, 48, 57
- March, James 265
 Marginal Farmers and Agricultural Labourers (MFAL) Scheme 184, 196
 marine fisheries 121
 Marine Fishing Policy (MFP) 2004 121, 195
 Marine Fishing Regulation Acts (MFRA) 122
- market(s) 93
 imperfection and process 149–50
 for industrial goods and services 28
- Market Intervention Scheme (MIS) 112
 Marx, Karl 60, 62, 74, 92
 Marxist School 61
 Mayer, Albert 179
 McClelland, David 73, 74, 76
 Mehta Committee Scheme 271
 micro-level planning 244–45, 247–48, 258
 micro and small enterprises (MSEs) 30, 31, 35
- Mid-day Meals Programme (MMP) 143, 218
 milk
 production of 20, 192
 yield 23, 24
- Mill, John Stuart 60, 73
 Million Wells Scheme (MWS) 164, 227, 241, 325
 Minimum Needs Programme (MNP) 25, 52, 103, 143, 207, 231–33, 241
 minimum support prices (MSPs) 111, 112
 Ministry of Agriculture 120, 195
 Ministry of Environment and Forests 108, 226
 Ministry of Rural Areas and Employment 105
 Ministry of Rural Development 182, 216, 223, 224, 225, 239, 247, 277, 288, 318, 325
 mixed economy 265
 Mixed Recall Period (MRP) consumption 201
 Modernisation Theory 61–62, 74–75
 failure of 62
- money, and credit, instruments of 160, 169–70
- Myrdal, Gunnar thesis of Spread and Backwash Effects 67–68, 75
- Mysore Resettlement and Development Agency (MYRADA) 276
- Nai Taleem* 71, 72
 Narasimham Committee 1975 113
 Nariman Committee 1971 113
 National Afforestation Programme (NAP) 108, 226–27
 National Agricultural Credit (Long-Term Operation) Fund 289
 National Agriculture Insurance Scheme (NAIS) 230–31, 241
 National Agriculture Policy, 2000 109, 112, 114–18, 195, 121, 241
 of 2004 125, 129
 National Agricultural (Stabilisation) Fund 289
 National Agricultural Technology Project (NATP) 92
 National Bank of Agriculture and Rural Development (NABARD) 31, 33, 36, 113, 120, 163, 209, 226, 234, 235, 241, 284, 285, 289–91, 293–95, 304–06
 National Bureau of Soil Survey and Land Use Planning, survey (NBSSLUP) 136, 224
 National Commission on Agriculture (NCA) 107, 184, 226
 National Commission on Farmers (NCF) 124
 National Commission on Minimum Programme (NCMP) 235–37, 241
 National Cooperative Agricultural Marketing Federation of India (NAFED) 111
 National Cooperative Development Corporation (NCDC) 120
 National Dairy Development Board (NDDB) 120, 192, 275
 National Development Council (NDC) 228, 271

- National Fund for Agricultural Development (AFAD) 279
- National Fund for Rural Development (NFRD) 288
- National Extension Service 181
- National Family Benefit Scheme (NFBS) 216, 217
- National Food Security Mission (NFSM) 33, 36
- National Food for Work Programme (NFFWP) 212, 214–15
- National Forest Policy (NFP) 18, 106–08, 129, 226
- National Horticulture Mission (NHM) 193
- National Housing and Habitat Policy (NHHP) 237
- national income 80, 81, 96
- National Maternity Benefit Scheme (NMBS) 216, 217, 219
- National Old Age Pension Programme (NOAPP) 143, 216, 217, 219
- National Policy on Cooperatives 129
- National Policy for Farmers (NPF) 124–25
- National Pulses Development Project (NPDP) 193
- National Rain-fed Area Authority (NRAA) 225
- National Rural Credit (Long-Term Operations) 289, 290
- National Rural Credit (Stabilisation) Fund 289, 290
- National Rural Employment Guarantee (NREG) Scheme 212, 215–16, 219
- NREG Act 2006 216
- National Rural Employment Programme (NREP) 142, 213, 227, 237
- National Rural Health Mission (NRHM) 25
- National Rural Roads Development Agency (NRRDA) 240
- National Sample Survey (NSS) 24, 102, 200, 204
- National Sample Survey Organisation (NSSO) 39, 51, 201, 219, 321
- National Social Assistance Programme (NSAP) 199, 216–17, 218, 219
- National Social Welfare Programme (NSWP) 165
- National Water Policy (NWP) 109–10
- National Watershed Development Programme for Rain-fed Areas (NWDPR) 225–26
- National Wasteland Development Board (NWDB) 109, 224
- nationalisation 293
of banks 113, 175
- natural cooperatives, policy on 118–20
- natural resources 82–86, 222–30
infrastructure development programmes 221–41
lack of 96
management of 145–46
non-renewable 82
renewable 82
- natural system model 262–63
- nature, dependence on 21–22
- Nayak Committee 30
- Need-for-Achievement Motivation Theory 73–74, 76
- Nehru, Jawaharlal 72, 180, 270, 310
- neo-Malthusian hypothesis 83
- net national product (NNP) 80, 96
- New Economic Policy (NEP) 1991 125, 129
- New International Economic Order 62
- non-agricultural sector 29–32, 34, 35
- non-farm sector 35, 290
- non-governmental organisations (NGOs), role of 94, 211, 247, 267, 275–78, 281
- non-institutional agencies 296, 306
- non-sustainable development, indicators of 135–41
- non-tax revenue 286
- non-timber forest products 139
- nutritional status 41
- nutritionally adequate diet 51
- open access resources (OAR) 136, 145
- Operation Flood (OF) 71, 143–44, 185, 191–93, 196, 275, 302, 307, 322, 323
- organisations
designing 267
forms of 93, 261
functions of 261, 281
and institutional framework 92–94
participatory models of 261, 262–65
see also government organisations
- ozone layer, depletion of 35, 140–41
- Package Programme 142, 184
see also Intensive Agricultural District Programme
- panchayati raj institutions 71, 72, 182, 208, 267, 270–73, 281, 316
- Pareto optimality, concept of 134
- Participatory Rural Appraisal (PRA) method of wealth 55
- per capita income 28, 86
as measure of rural development 39
- per capita consumption, rural and urban 24
- pest control 144
pesticide use for 19
- physical quality of life index (PQL) 40–41, 57
- Pilot Weather-based Crop Insurance Scheme (WBCIS) 231
- planned/planning
decentralised 258
development 101
rural development 243–57
levels and functions of 244–46
- Planning Commission 51, 52, 105, 184, 189, 201, 209, 214, 228, 246, 247, 310
Working Group 250, 251
- policy
definition of 128
goals 157–58
instruments of rural development 100, 155–76

- pollution
 court orders on prevention of 175
 tax 167
- population growth 146
 in rural areas 5, 12, 15
- poverty 24, 50, 101, 201
 alleviation programmes 50, 147, 207–16, 199, 218, 219
 decline in 200
 eradication programme 198–200
 gap index 52, 54, 57
 incidence of 214, 218
 line, definition of 50, 51, 53, 321
 population living below 202, 203, 209
 Task Force recommended 51, 52
 state-wise 52
 measuring of 50–53
 and unemployment 196, 218
- PRADAN, Delhi 94
- Pradhan Mantri Gram Sadak Yojana (PMGSY) 238–40, 241
- Prebisch, Raul 63
- price control 172–73
- Primary Agricultural Credit Societies (PACS) 292
- Primary Cooperative Agricultural and Rural Development Banks (PCARDB) 292
- primary sector, employment in 205
- Prime Minister's Gramodaya Yojana Rural Drinking Water (PMGY-RDW) 236
- privatisation 72, 114
- processing industries 29
- Programme Evaluation Organisation (PEO) 189, 209
- Programme and Implementation (PIM) system 314
- projects
 control of 315
 evaluation of 309, 319–26, 325–26
 implementation of 311–14
 integration and coordination of 315–16
 monitoring of 309–11, 317–19
 peoples participation 316–17
- property rights, creation of 174
- property taxes 286
- Public Accounts Committee (PAC) report 209
- Public Accounts of India (PAI) 285, 286
- public distribution system (PDS) 111, 112, 145, 199, 207–08, 218, 219, 231
- public finance 160–69
 constraints on use of 167–69
- public health facilities 41
- public interest litigation (PIL) 174, 176
- public policy 100–01
- purchasing power parity (PPP) 43, 44
- quantitative restrictions, removal of 126, 127
- Rajiv Gandhi Grameen Vidyutkaran Yojana (RGGVY) 237
- Rajiv Gandhi National Drinking Water Mission (RNDWM) 236
- Rao, C.H. Hanumantha 223, 224, 241
- Rashtriya Krishi Vikas Yojana (RKVY) 33, 36
- Rashtriya Swastha Bima Yojana (RSBY) 199, 217–18, 219
- real income 40
- Recursive Linear Programming (RLP) 256
- refugees, rehabilitation of 237
- Regional Coordination Committees (RCCs) 277
- Regional Fisheries Management Bodies (RFMB) 123
- Regional Rural Banks (RRBs) 284, 288, 290, 294–95, 304–06
- Regional Rural Bank Act 1976 294
- Reserve Bank of India 113, 169, 188, 209, 284, 288–89, 285, 293, 304, 305
 Agricultural Credit Department of 305
- Reserve Bank of India Act 1934 288
- resource
 appraisal and constraints to 253–54
 management 64, 122–23
- revenue instruments 166–67
- Revolution of Rising Expectation 7
- Right to Information (RTI) Act 216
 rural roads 238
- Rockefeller Foundation 190
- Rosentein-Rodan, 'Big Push' theory of 64, 75
- Royal Commission on Agriculture (RCA) 1926 106
- Rural Bonds 290
- Rural Credit Policy 113–14, 129
- rural development 37–46, 48, 50, 56
 determinants of 78–98
 failure of programmes 310
 Gandhian model of 69–72
 organising 260–82
 paradigm of 59–76
 policies 103–06
 programmes and policies 99–130, 153, 155–76, 304
 at state level 41
- Rural Development Management Programme (RDMP) 269
- rural economy
 of India 14–36
 size and structure of 15–21
- rural employment scenario 204–06
- rural enterprise 34, 102
- Rural Group Insurance Scheme (RGIS) 217
- Rural Infrastructure Development Fund (RIDF) 234–35, 241
- Rural Landless Employment Guarantee Scheme (RLEGP) 213, 227, 237
- rural poverty 102, 143
 causes of 85
 concepts and measures of 50–56
- rural sector, characteristics of 21–25
- Rural Works Programme (RWP) 212, 219, 222, 223

- Sadguru Water and Development Foundation (SWDF) 94, 276
- Sampoorna Grameen Rozgar Yojana (SGRY) 212, 214
- Sarva Shiksha Abhiyan (SSA) 25
- Save the Children Fund, UK 298
- Scheduled Castes
- benefits to 215
 - construction of houses for 237, 238
 - employment for 210
 - reservations in panchayats 271, 273
- Scheduled Tribes,
- benefits to 215
 - construction of houses for 237, 238
 - employment for 210
 - reservations in panchayats 271, 273
- self-employment programmes 199, 208–12, 218
- self-help groups (SHGs) 216, 295–96, 306
- Bank Linkage Programme 295
 - of women 211, 212
- Sen's Index 52, 54, 57
- sericulture 31
- SEWA, Gujarat 94
- Shastri, Lal Bahadur 275
- shifting cultivation 228
- Sivaraman Committee 31
- Small Farmer Development Agency (SFDA) 183–84, 196
- Small Farmers, Marginal Farmers and Agricultural Labourers Project (SFMFALP) 196
- Small Industries Development Bank of India (SIDBI) 31
- small-scale industries (SSI) 29
- institutional credit to 30
- Smith, Adam 60
- social forestry 108
- social security contributions 166
- social welfare-oriented programmes (SWOP) 199, 216–18
- social welfare programmes 157
- socialist pattern of society 101
- Societies Registration Act 1860 288
- socio-economic development 19, 24
- socio-technical models of organisations 264–65
- Special Central Assistance (SCA) 230
- Special Rural Development Programmes, Kenya 314
- Squared Poverty Gap (SPG) 52, 54, 57
- State Agricultural Marketing Boards 150
- state agricultural universities 92
- State Cooperative Agricultural and Rural Development Banks (SCAEDBs) 290
- State-level Coordination Committee (SLCC) 318–19
- Statutory Liquidity Ratio (SLR) 294
- structural adjustments programme 62
- succession duties and inheritance duties 167
- sugar cooperatives 94
- surface water resources 137
- sustainable development 82, 83, 96, 132, 145, 152
- strategies for 132–53
 - sustainability and 132–35
- sustainable livelihood, concept of 133
- Swarnajayanti Gram Swarozgar Yojana (SGSY) 211–12
- swaraj 270, 281
- Tagore, Rabindra Nath 179
- target groups, identification of 252–53
- Task Force on Development of Shifting Cultivation Areas, report of 228
- tax/taxation 88, 166, 167
- and conservation policy 168
 - revenues 167
- Technical Cooperation Mission (TCM) 185, 188, 193–94
- Technical Cooperation Programme Agreement (TCPA) 182
- technology 90–92, 148
- transfer of 278
- Technology Mission 193
- Technology Mission on Dairy Development (TMDD) 193
- Technology Mission on Oilseeds 196
- telephony, rural 237
- Thakurdass Committee 180
- Tinbergen, Jan 156, 175
- Tobacco Board 111
- Total Literacy Programmes 72
- Training of Rural Youth for Self Employment (TRYSEM) 142, 210
- Tribal Area Development Programme (TADP)/Tribal Sub Plan 229–30, 241
- Tropical Forest Resources Assessment 138
- Trusteeship 71–72
- Twenty Point Programme (TPP) 103, 233–35, 241
- underdevelopment
- in developing countries 63
 - in rural areas 34
- unemployment
- rural 24, 48, 205–06
 - alleviation of 207–16
 - eradication programme of 198–200
- Uniform Recall Period (URP) 201
- Union Budget 286, 290, 292
- Union tax revenue 286
- United Nations Conference on Environment and Development (UNCED) 132, 152
- United Nations Development Programme (UNDP) 42, 173, 201

- United Nations Panel on Foreign Investments in Developing Countries 300
- United Progressive Alliance (UPA) 240
 - National Common Minimum Programme of 163, 235
- United States Agency for International Development (USAID) 73, 188, 307
- Universalisation of Elementary Education 72
- unskilled workforce 24–25
- Uruguay Round General Agreement on Trade and Tariffs (GATT) 125

- Vikas Volunteer Vahini (VVV) 290
- Village Housing Scheme (VHS) 237
- voluntary agencies (Vas) 275–79, 281, 290, 317

- Wage-Employment Generating Schemes (WEGS) 212–16
- wage-employment programmes 199, 219

- water
 - access to safe drinking 56
 - pollution of 84
 - resources, degradation and depletion of 136–37
 - scarcity 18
- waterborne diseases 137
- water-harvesting 224
- Watershed Development for Shifting Cultivation (WDPSCA) 228–29, 241
- welfare-oriented strategy 143
- White Revolution 191
- World Bank 89, 194, 284
- World Commission on Environment and Development (WCED) 132, 133, 152
- World Conservation Strategy (WCS) 132
- World Trade Organization (WTO) 127, 173
 - India in 125

- Zila Parishad 182, 271, 316

About the Author

Professor Katar Singh is currently Honorary (Founder) Chairman, India Natural Resource Economics and Management (INREM) Foundation, Anand which is a non-governmental academic organisation committed to promoting teaching, training and research in natural resource economics and environment management, and improving natural resource management policies and programmes. He holds a Ph.D. in agricultural economics from the University of Illinois, Urbana-Champaign, USA, and has done post-doctoral research and advanced course work in natural resource economics from the Department of Agricultural and Resource Economics, Oregon State University, Corvallis, USA and from the Workshop in Political Theory and Policy Analysis, Indiana University Bloomington, USA.

He has over 45 years of teaching, training, research and consulting experience in the areas of agricultural and rural development, and natural resource economics and management. He was Director and RBI Chair Professor in the Institute of Rural Management, Anand (IRMA), India, and has also had a short stint as Director, Bankers Institute of Rural Development, Lucknow. He has also taught at the GB Pant University of Agriculture and Technology, Pantnagar, India.

He has coordinated and conducted several research and consultancy projects funded by national and international agencies. A prolific writer, he has published over 120 articles and papers in professional journals of repute and authored/coauthored nine books, including a textbook *Rural Development: Principles, Policies and Management*, Second Ed. (SAGE, 1999), and another entitled *Environmental Economics: Theory and Applications* (SAGE, 2007), coauthored with Dr Anil Shishodia. He has also coedited three books, namely, *Co-operative Management of Natural Resources* (SAGE, 1996), *Natural Resource Economics: Theory and Application in India* (Oxford & IBH, 1997), and *Designing and Managing Rural Development Organisations* (Oxford & IBH, 2000).

Professor Singh is a life member of numerous bodies including the Indian Society of Agricultural Economics (ISAE) and the Indian Association of Public Administration (IAPA). He has been recipient of several awards and honours, including Rathindra Puraskar 2003, awarded by Visva Bharati University, Santi Niketan, in recognition of his significant contribution to education in rural development and Sir Chhotu Ram National Award for the year 1996–97, awarded by CSS Haryana Agriculture University, Hisar, in recognition of his outstanding research work in the field of agriculture and rural development.