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Assefa Hailemariam
Editors



The Demographic Transition and Development in Africa

The Unique Case of Ethiopia

 Springer

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Foreword by William Butz

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Cover image: Four different stages of the fertility transition in 24 sub-Saharan Africa countries with at least two comparable demographic and health surveys (DHSs), ca. 1990- ca. 2008. See Chapter 2 for further details and definitions

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Foreword

Ethiopia is indeed unique. Geographically and culturally diverse, this huge country displays among the best and the worst demographic and development outcomes in Africa. How can it be that all the health, nutrition, and education objectives in the Millennial Development Goals, save one (maternal mortality), appear to be on track (in 2010) for the year 2015 – among the best prospects in Africa – while the percentage of illiterate women and the number of food-insecure persons are the highest on the Continent? In the international setting, little about Ethiopia is average.

As a promising setting for research, Ethiopia also stands apart. The demographic transition's early and latest phases contrast starkly across rural and urban areas, as starkly as anywhere on the globe. The country has become a natural laboratory for studying how persons and families respond to this palpable disequilibrium. Looking beyond research toward policy, Ethiopia could also become a laboratory for realizing the human investment opportunities generated predictably during the demographic transition.

Ethiopia's uniqueness fascinates the authors of this timely book. From the first national census in 1984 through surveys of labor force, migration, health, gender, and development in the last decade, they document trends and highlight disparities in a broad array of outcomes: contraceptive prevalence; fertility trends and differentials; children's and women's nutritional status; food insecurity; child stunting; infant, under-five, and maternal mortality; temporary, circular, and rural-urban migration and urbanization; social and occupational mobility; unemployment; and poverty.

Beyond describing these characteristics and outcomes, these papers investigate correlates and causes of the documented trends and variations. This search for possible policy levers includes: place of residence; land tenure security; age at first marriage; household structure; women's education, literacy and decision making autonomy; labor force participation and off-farm employment; access to arable land, draft animals and adult labor; savings, assets, and access to credit; maternal health and family planning services; resettlement and urbanization.

These eclectic outcomes and policy influences promise breadth. Prominent sociological and demographic theories – Malthus, Boserup, K. Davis, Adepoju, Caldwell, Bilsborrow – provide the focus. After bringing existing theories to the data, the

authors argue for an expanded demographic transition theory, including demographic responses to poverty, environmental and climate vulnerability, life course aspirations, and delayed family formation norms.

And what of the data? In this respect, the Ethiopian situation, although not unique in Africa, is unsatisfactory. A theme of the book is that data deficiencies – old, inconsistent, unharmonized, undisaggregated, delayed, undisseminated, unevaluated and unanalyzed – are increasingly frustrating government officials’ and their international partners’ growing needs for reliable information. Yet, the authors do not whine about the data. Instead, they set their empirical tools to the task, making the best of the materials at hand and, in important instances, improving on them through new and on-going data collection efforts. Although the data deficiencies are clearly identified, the refreshing sense of what we can know is much stronger in these papers than the debilitating sense of what we wish we could know.

The authors do not shy away from projections, even predictions of an accelerating rural demographic transition. Nor from policy critiques and recommendations. There are many specifics here, both in assessments of demographic and economic challenges and in admonishments to policy makers. They call particularly for reinvigorating the implementation of the 1993 National Population Policy, still relevant but so far only weakly carried out. I suspect such evidence-based policy advice will draw particular interest, not only within Ethiopia but also in similarly challenged countries.

This book is one result of nearly 20 years of collaborative research and training. A core of rigorously trained demographic researchers, from whom this book’s authors are drawn, is another result. In coming years, these researchers will feed the demand for more and better data, even as they help to provide it. Indeed, the surveying and research capacity embodied in these Ethiopians will in time surpass this volume in value. The research payoffs to Professor Teller’s and Professor Assefa’s investments in their colleagues should persist for decades. One can hope that the policy payoffs to accelerating the demographic transition and capturing the potential of the resulting demographic dividend and improved human well-being will be as large. This book points the way.

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William Butz

Preface

We have long felt the need for a peer-reviewed, academic book on population and development in Ethiopia and its sub-Saharan African context, that meets the greatly expanding and multiple needs of not only universities, but also government, international and local development organizations, researchers and students. What exactly is the mix of theory, data and evaluation we need to understand the current pace and nature of the demographic transition and support policies for its future acceleration, particularly in rural areas? How can we adapt general demographic transition theories and frameworks to meet our own pressing need to interpret the different emerging realities in our respective countries?

The main motivation to publish the book at this time (2010–11) is the crucial juncture of monitoring and understanding the progress for achieving the 2015 targets of the Ethiopian National Population Policy, the Millennium Development Goals (MDGs) and the new Growth and Transformation Plan (GTP). It is the stark realization that adequate data and information systems are not yet sufficiently available for meeting such an important monitoring and evaluation (M&E) requirement.

Ethiopia in context: The book provides comparisons not only of Ethiopia with other sub-Saharan African countries, but also internally between rural and urban and intra-regional and historical/cultural realities. It demonstrates the uniqueness of an African-type demographic transition and the dilemma of analyzing BOTH poverty and development driven causes: a combination of negative factors (unemployment, disease, food insecurity, environmental degradation) along with positive factors such as education, health and cultural change (i.e., higher age-of-marriage trends). Somehow, incredibly, these factors are embedded in structures and adaptive responses that are pushing this ruggedly rural and land-locked population to accelerate the demographic transition and stay on track to meet most of the health, education and nutrition-related MDG targets.

Organization of the book. There are five main substantive areas, sandwiched between the Introduction and Conceptual Framework (Part I) and the Conclusion and Policy Recommendations (VII): Part II – The Demographic Transition and Human Development; Part III – Health and Nutrition; Part IV – Population Distribution, Migration, Urbanization and Labor Force; Part V – Vulnerability and Adaptation: Case Studies in Population-Resource Pressure and Food Insecurity; and Part VI-Development Policy and Program Evaluation.

Main sources of data. Given the inadequate information systems and research and evaluation capacity, there has been a need to triangulate the sources of data, as well as the research approaches. Main sources of data in the 15 substantive chapters include our own (university) demographic surveys and social science research, both nationally or regionally representative, or in-depth case studies (including qualitative methods). The other main sources are the Central Statistical Agency's (CSA) decennial censuses, periodic and specialized surveys (e.g., DHS, Labor Force, Health and Nutrition, etc.). Finally, additional information come from routine and sectoral information systems and service statistics.

Policy Implications: In Ethiopia, we do not have the luxury of living in academic, ivory towers, but are forced to face the pressing realities around us. Thus most of the chapter authors have been engaged in applying the information and knowledge gained in research and teaching to policy, programs, project planning and evaluation, as well as to filling the critical human resource capacity needs in demographic analysis. Some of us have lived and worked in other African countries too, and we hope that this book can provide guidance to our sister countries facing similar policy, resource and information constraints. We learn by researching and implementing in multidisciplinary teams and in different contexts, and we teach more effectively from what we have been doing and learning ourselves.

Addis Ababa, Ethiopia
Addis Ababa, Ethiopia

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Assefa Hailemariam

Acknowledgments

This pioneering, policy-relevant academic book for Ethiopia, in its sub-Saharan African context, is the result of a 15-year process of close collaboration by the co-editors (Charles Teller and Assefa Hailemariam) and institutional capacity-building with the numerous authors and graduate students at the Demographic Training and Research Center (now called the Center for Population Studies), Institute of Development Studies, Addis Ababa University (AAU), Ethiopia.

Its organization and writing was facilitated by the warm, enabling demographic environment at Population Reference Bureau in Washington, DC that Dr. Teller enjoyed as Visiting Senior Scholar, without which this book could not have been produced. It was also facilitated for both him and Dr. Assefa by the enabling, multidisciplinary and analytical environment at AAU.

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Acronyms

3-D	Demographic data for decision-making
3ie	International Initiative for Impact Evaluation
AAU	Addis Ababa University
ACC/SCN	Administrative Committee on Coordination/Subcommittee on Nutrition
ADLI	Agricultural Development Led Industrialization
AEZ	Agro-ecological zone
AFROAD	African Forum and Network on Debt and Development
AIDS	Acquired immune deficiency syndrome
AIM	AIDS Impact Model
ANC	Antenatal Care
APHA	American Public Health Association
Belg	Short spring rains
Birr	The Ethiopian currency (at 16.5 to the US dollar, late 2010)
BMI	Body mass index
BoFED	Bureau of Finance and Economic Development
BPR	Business process reengineering
CBOs	Community-based organizations
CED	Chronic energy deficiency
CPR	Contraceptive prevalence rate
CR	Condoms requirement
CSA	Central Statistical Agency
CSO/Kenya	Central Statistical Office
Debo	Traditional, communally-shared working groups (in Amharic)
Dega	Highland (cold) zone
DemProj	Demographic Projection
Derg	Name of the political regime that ruled Ethiopia from 1974–1991 (in Amharic)
DFID	Department for International Development
DHS	Demographic and Health Survey
DND	Dakar/Ngoro Declaration
DRC	Democratic Republic of the Congo

DTRC/IPS	Demographic Training and Research Center/Institute of Population Studies (now center for Population Studies)
E.C.	Ethiopian calendar
EDHS	Ethiopian Demographic and Health Survey
EEA	Ethiopian Economic Association
EPHA	Ethiopian Public Health Association
EPRDF	Ethiopian People Revolutionary Democratic Front
ESPS	Ethiopian Society of Population Studies
ESRC	Economic and Social Research Council
EWS	Early Warning System
FamPlan	Family planning
FAO	Food and Agricultural Organization
FGM	Female genital mutilation
FMoH	Federal Ministry of Health
FP	Family planning
GDP	Gross domestic product
GER	Gross enrollment rate
GHI	Global hunger index
GIS	Geographic information system
GNI	Gross national income
GO	Governmental organization
GOE	Government of Ethiopia
Gombiso	A mix of soil, crop residue, animal dung and water (in Amharic)
Ha.	Hectare
HDI	Human Development Index
HEP	Health Extension Program
HH	Household
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HPI	Health Policy Initiative
HSDP	Health Sector Development Program
I/NGO	International/ Non-governmental Organization
ICPD	International Conference on Population and Development
ICRG	International Country Risk Guide
Iddir	Social, neighborhood group security in case of death (in Amharic)
IEC	Information, Education and Communication
IFPRI	International Food Policy Research Institute
ILO	International Labor Organization
IMR	Infant mortality rate
IOM	International Organization for Migration
ISEI	International Socioeconomic Index
IUCD	Intra uterine contraceptive device
IUSSP	International Union for the Scientific Study of Population
KAP	Knowledge, Attitude and Practices

Kebele	Smallest administrative unit, equivalent to a community or neighborhood (in Amharic)
Kola	Lowland (hot) zone
KPA	Kilimanjaro Program of Action
LIU	Livelihood Integration Unit
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MMR	Maternal mortality ratio
MoARD	Ministry of Agriculture and Rural Development
MOE	Ministry of Education
MoFED	Ministry of Finance and Economic Development
MOH	Ministry of Health
NBE	National Bank of Ethiopia
NER	Net enrollment rate
NGO	Non-governmental organization
NLFS	National Labor Force Survey
NOP	National Office of Population
NPC	National Population Council
NPP	National Population Policy
NPPE	National Population Policy of Ethiopia
ONCCP	Office of National Committee for Central Planning
PAA	Population Association of America
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PM	Prime Minister
PMC	Population Media Center
PMTCT	Prevention of mother – to– child transmission
PNC	Postnatal care
PPP	Purchasing power parity
PRB	Population Reference Bureau
PSTC	Population Studies and Training Center
RAPID	Resources for the Awareness of Population Impacts on Development
RH	Reproductive health
SERA	Strengthening Emergency Response Abilities
SLF	Sustainable livelihoods framework
SNNPR	Southern Nations, Nationalities and Peoples Region
SPSS	Statistical package for social sciences
SSA	Sub-Saharan Africa
STD	Sexually transmitted disease
TB	Tuberculosis bacilli
TFR	Total fertility rate
TGE	Transitional Government of Ethiopia
TLU	Tropical livestock unit
TVET	Technical and Vocational Education and Training
U5MR	Under-five mortality rate
UN	United Nations

UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Program
UNECA	United Nations Economic Commission for Africa
UNFPA	United Nations Fund for Population Activities
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Children’s Fund
US	United States
USAID	United States Agency for International Development
WCED	World Commission on Environment and Development
Weina-dega	Midland (temperate) zone
WFP	World Food Program
WMS	Welfare Monitoring Survey

About the Authors

Abebe Gebremariam Hailu is Professor of Population & Reproductive Health at Jimma University. He obtained B.Sc. in Public Health from Gondar College of Public Health (now Gondar University), Ethiopia; MPH in Reproductive Health from Tulane School of Public Health & Tropical Medicine (USA), Certificate in Social mobilization (Tulane School of Public Health & Tropical Medicine (USA) and gender health and development (Manchester University UK). He has been teaching maternal and child health and demography with experience of more than 23 years at both graduate and postgraduate levels. He has written over thirty research papers on areas of reproductive health and has prepared training materials on reproductive health, micronutrients and lecture notes. He has organized different local and national workshops on reproductive health fields such as on “achieving the millennium development goals: poverty reduction, reproductive health and health sector reform” in collaboration with EPHA, the David & Lucile Packard Foundation, World Bank & UNFPA. Currently he is involved in teaching postgraduates and coordinating community health trainings at Jimma University. He is also currently a member and a vice coordinator of the Jimma Longitudinal Family Health Survey of Youth.

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Part I

Introduction: Context and Framework

Chapter 1

The Complex Nexus Between Population Dynamics and Development in Sub-Saharan Africa: A New Conceptual Framework of Demographic Response and Human Adaptation to Societal and Environmental Hazards

Charles Teller and Assefa Hailemariam

Abstract The demographic transition “theory” or framework has been the main preoccupation of modern scientific demography in the past 60 years. However, other than the generality of mortality declining before fertility, there is little consensus on the timing, pace and causality related to socio-economic development. In heterogeneous sub-Saharan Africa, the western-based transition theory is not very predictive of the variation in the pace of the transition, and does not take into account the realities of multiple risks and the dynamics of on-going vulnerabilities and hazards in addressing poverty, instability, food insecurity, excess mortality and globalization. It is important that population dynamics are well integrated into poverty reduction, climate adaptation, and transformation and development policies and programs. To that end, over the past 15 years, we have been using the A. Adepoju approach to rethinking the study of population dynamics in Africa, and adapting the K. Davis framework of multi-phasic change and response and the R. Bilborrow focus on agricultural pressure and migration. In the volatile Horn of Africa, the human ecology and geo-political structure of the population-environment-economy-political-technology-socio-cultural nexus are the crucial context. These produce short and long-term demographic responses, adaptation and social change at micro community, household and community levels, that in turn change the timing and pace of the demographic transition. Some of the key demographic responses to high vulnerability and frequent hazards and shocks include migration, labor mobility, delays in marriage and family formation, abortion and divorce. The role of a policy-relevant academic book is to foster research on innovative theories, realistic conceptual frameworks, rigorous evaluation and practical field methods. These can strengthen capacity for monitoring human development targets, but also for evidence-based

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evaluation and decision-making to accelerate the pace of the demographic transition and the capturing of the potential demographic dividend in sub-Saharan Africa.

Keywords Vulnerability · Hazards · Demographic response · Migration · Conceptual framework · Food insecurity · Development

1.1 Introduction

It should be the role of local social and biological science demographers to adapt global population theories and models to the immediate development context and priorities of the country they work in. In much of sub-Saharan Africa, and particularly in the volatile Horn of Africa, this historical context is framed by poverty, food insecurity, disease, climate change and political instability. We are challenged to go beyond the study of our key three demographic dynamics (fertility, mortality and migration), to consider how these dynamics together, in the form of population size, growth and distribution, interact with the priority development issues of policymakers.

We feel that both population structure and dynamics interact with major challenges in sub-Saharan Africa, such as poverty reduction and food insecurity mitigation, and the demographic responses can be both positive and negative. There is a vast literature on the demographic transition in general as the main preoccupation of modern scientific demography (e.g. Kirk, 1996) and now in sub-Saharan Africa (e.g. Bongaarts, 2007), albeit agreement on the generality about mortality declining before fertility, there is little consensus on either the timing of the fertility transition or on the causality related to “modernization” and Westernization. The large differences in the pace and timing of the transition in sub-Saharan Africa, and even within one country like Ethiopia, implies that we must go beyond socio-economic “factor” analyses to consider cultural, human development, ideational and diffusion/communication systems and processes. And while this may “preclude precise prediction”, it does provide us with guideline for population and development planning and evaluation.

The situation of Ethiopia provides us with a unique contextual laboratory to test these different approaches. We are adapting the demographic transition theory and the demographic change and response to the multi-cultural, agro-environmental and geo-political Ethiopian context. We ask three leading questions:

1.1.1 Why is *rigorous research* with quality data on the population-development nexus so policy relevant in sub-Saharan Africa (SSA), and at this stage in the incipient demographic transition in a country like Ethiopia?

Rigorous, multidisciplinary and contextual research and reliable data are required to develop evidence-based theories, models and projections of demographic change and response in the region that are relevant to policies for reducing the highest

poverty and hunger levels in the world. The 40+ SSA countries are spread out among five different stages of the so-called demographic transition: pre-transition, incipient transition, mid-transition, late transition and post-transition (Bongaarts, 2007). Most of the SSA countries are at the incipient and mid-transition stages, and Ethiopia falls in the incipient group (see Chapter 2)

Policymakers and development practitioners, guided by the UN's MDGs (UNDP, 2010) and Poverty Reduction and Disaster and Hunger mitigation strategies (ISDR, 2005), often want to know how to accelerate the demographic transition in order to facilitate meeting these development goals (ECA, 2009). The case of Ethiopia presents a unique opportunity, where the apparent recent acceleration of the incipient transition at the macro level tends to mask growing differentials and inequities at the ethno-regional, agro-ecological and rural-urban levels.

In this book the senior demographers, many of whom have worked together for over 15 years on Ethiopian population, health and development research and policy, are challenging students, national policymakers, the media and international development partners to use evidence-based research and demographic data and to avoid overly simplistic pessimistic (e.g. Malthusian) or overly optimistic (e.g. Boserupian) generalizations, as well as politically, ideologically or economically motivated conclusions. In teaching at universities now we realize that the younger generation of Ethiopian demographers is frustrated with this artificial, Western-biased dichotomy, and demanding greater commitment of all partners in addressing and rigorously evaluating the demographic constraints to policies of poverty reduction, food security, gender and governance.

1.1.2 Why is there a paucity of multidisciplinary research on the *demographic dimensions of vulnerability* to the poverty, food insecurity, environmental degradation, malnutrition and mortality?

There are different academic, disciplinary and applied science approaches (Alwang et al., 2001) to this nexus that are needed, and such collaboration is often hard to carry out. These include: (a) demographic, statistical and epidemiological studies of levels, trend and differentials (e.g. UNICEF, 2009; Lutz and Scherbov, 2001); (b) social science and agro-economic studies which address the underlying causes and consequences (Ali, 2008; Binswanger-Mkhize, 2009; Temesgen et al., 2008; de Sherdinin et al., 2007); and (c) Disaster risk science and humanitarian policy and programs which assess the early warning, preparedness and response to both natural and man-made hazards and risks (Lautze et al., 2003; ISDR, 2005; Turner et al., 2003).

1.1.3 Why is *migration and mobility* research often neglected?

Migration has often been considered the “step-child” of demography, but it is often neglected in poverty, food insecurity, climate change, and health research. Adepou (1994) lamented that there has been an excessive focus on fertility that flows from a preoccupation with a rapid population growth. The caveat is that migration is

difficult to measure, analyze and interpret, varies greatly from one local area to another, and is not requested by policymakers. Even many of the African rounds of censuses and labor force surveys since the 1990s have often severely reduced the migration questions to duration of current residence (e.g. in the Ethiopian censuses of 1994, 2007), or even eliminated migration (such as was removed from the 2005 National Labor Force Survey of Ethiopia), complaining that the place of birth and previous residence are “too difficult to code”. However there are major exceptions that have given priority to migration dynamics, both internationally (e.g. Davis, 1963; Bilsborrow, 1987; Bilsborrow and Carr, 2001; Adepoju, 1994; Oucho, 1990; Findley, 1992) and in Ethiopia (CSA, 1992; Assefa, 1994; Dessalegn, 1992; Belay, 1996; Teller, 1998, 2005; Markos, 1997; DTRC and PTSC, 2000; Markos and Gebre, 2000; Mulat, 2001). The more recent debate of climate change, coping and adaptation strategies has given new life to the importance of migration in vulnerability response (e.g. Tacoli, 2007; Adamo, 2009; Teller, 2010). Also, the increase in international migration and movement across borders has highlighted the need for better data and neglect of the most highly vulnerable (Adepoju, 2009; UNHCR, 2009).

1.2 Ethiopia at the *Crossroads* in the Demographic Transition and Socio-Economic Development

The study of population is important in a country like Ethiopia for various reasons:

- *Geo-political*: The second largest African country at around 80 to 82 million in the year 2010 (UN/ESA, 2010), landlocked and surrounded by fragile states (Somalia, Yemen, Sudan and Eritrea) within the volatile and strategic Horn of Africa; a formerly socialist country now following a neo-capitalist approach since 1991; and at the political, socio-cultural and geo-strategic crossroads between East Africa, North Africa and the Middle East
- *Poverty, food insecurity and environmental degradation*: resource imbalance and climate change with population is often at the heart of population and development policy; among the lowest 10 of 180 countries on the human development index (UNDP, 2009); one of the highest numbers of food insecure (chronic and acute) and destitute in any African country (Devereux et al., 2002; Webb et al., 1992; FEWS/NET, 2009; FAO, 2009), with annual emergency appeals for humanitarian assistance; and increased population pressure on arable land, with rapid soil and forest depletion (Mesfin, 1986, 1991; Belay, 1996; Dejene, 1997; Dessalegn, 2009)
- *Decentralized, rural-centered development policies*: focus on agriculturally-led development, rapid expansion of education, health services and food security asset protection to the rural areas (MoFED, 2006). This has helped to put the country on track to meet most of the demographic, health, nutrition and education-related targets in 2015 (MoFED, 2008a, b), even in spite of high

poverty, weak infrastructure and institutions and climate change. Can Ethiopia become a surprising example of human development successes in spite of poverty, like Bangladesh and Kerala?

1.3 Specifics of the Demographic Transition in Ethiopia

It can be broadly characterized by rapidly decreasing mortality, incipient fertility decline, and low level of urbanization, resulting in rural population pressure on the land, and incipient small market town settlements (Teller et al., 2010). Some of the factors include:

- *Size*: Second largest country in Africa, with the 2007 census population of 74 million and now at 82 million (2010), and projected to double by the year 2050.
- *Growth rate*: Still rapid, was rising to a peak of 3% around 1990, now estimated to have declined to around 2.6%, in 2005–2010, and adding around 2 million people per year.
- *Fertility and mortality*: the transition to lower mortality since the 1990s has preceded an incipient decline in fertility; fertility of Addis Ababa has been at below replacement since the late 1980s and early 1990s, and even in other urban areas it is now near replacement.
- *Distribution*: predominantly rural (84%) concentration among the highest in Africa, and rural land holdings per household shrinking; urban growth rate is twice as high (4.2%) as rural, but small market towns mushrooming; capital city of Addis Ababa over 10 times larger than any other city.
- *Population-related social programs*: from very low initial levels, rapid expansion into the rural areas of the primary education, health, food safety net and family planning programs and women's affairs.

1.4 New Approaches to Our Conceptual Framework

The holistic approach of the complex nexus of population structure and dynamics, of the macro and the micro, are more relevant to policy than the focus on either one or the other (see Fig. 1.1). A more incisive explanation of the interrelationship between the major determinants of demographic processes and development at micro and macro levels are needed to understand the demographic heterogeneity of Africa (Adepoju, 1994)

Here are some of the underlying assumptions in the conceptual framework:

- We are applying a *multilevel, trans-disciplinary framework* that stems out of the rich international literature in human ecology (e.g. Hawley, 1950; Bilsborrow, 1987; Bilsborrow and Carr, 2001; Turner et al., 1993; Tiffen and Mortimore, 1994; de Sherdinin et al., 2007; Adamo, 2009); demography (Davis, 1963; Kirk, 1996), social science/sustainable development (Boserup, 1965; Dessalegn, 1992);

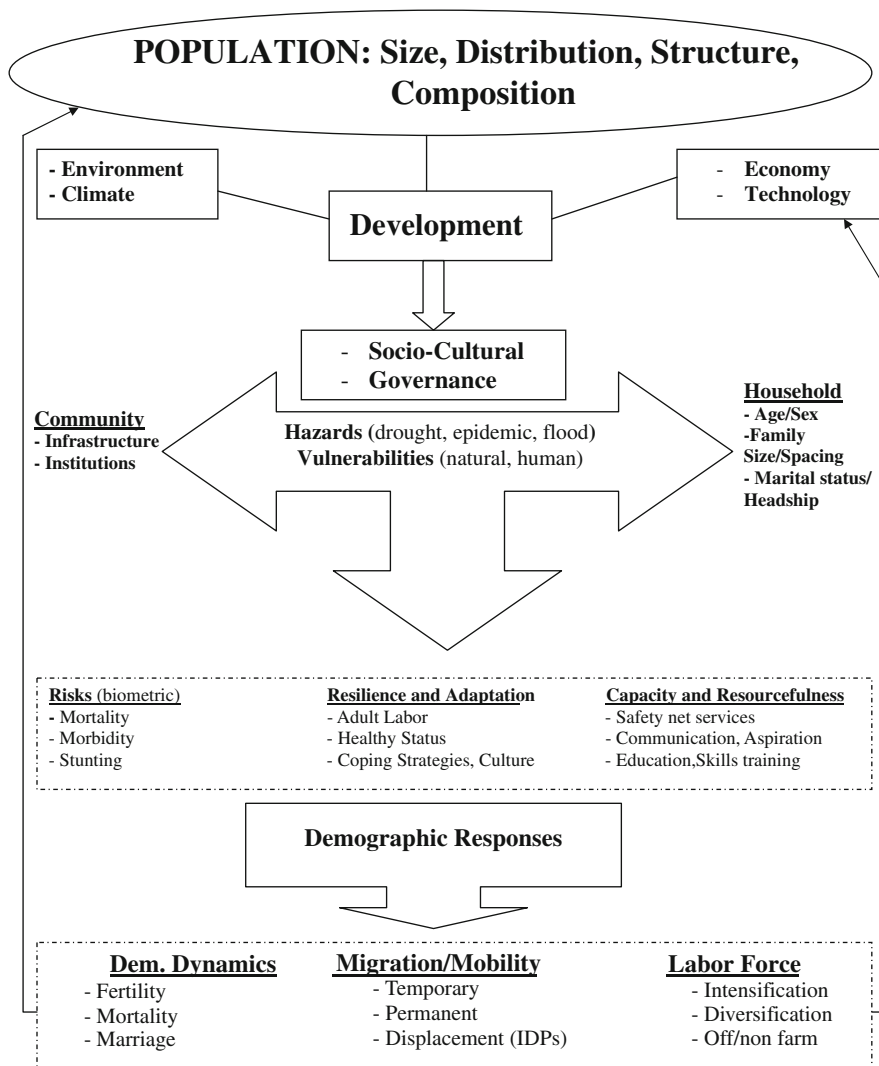


Fig. 1.1 Conceptual framework: population/development nexus, with demographic responses and human adaptation

Devereux et al., 2002; Turner et al., 2003) and in epidemiology (Mosley and Chen, 1984; Yemane et al., 2006) literature. In this book, we take a more revisionist approach (see Johnson and Lee, 1987; Birdsall et al., 2001; Cohen, 2008), seeking to balance the more pessimistic, environmental Malthusian view of rapid population growth and pressure on food and resources, and the more Boseupian, optimistic socio-technological view of socioeconomic and cultural change and the reduced dependency of the demographic dividend leading to positive demographic and agro-technological change (Ringheim et al., 2009).

- Given the 17-year long population policy of Ethiopia (TGE, 1993) which seeks a better *balance between population growth and resources*, the relevance to the Ethiopian demographic transition of the classic Multi-phasic Response theory of Kinsley Davis (1963) is instructive. Based on case studies of Japan, India and Europe, his sociological thesis is that “faced with a persistent high rate of natural increase resulting from past success in controlling mortality, families tended to use every demographic means possible to maximize their new opportunities and to avoid relative loss of status. (p.362)”
- As for the view that the *motivational linkage* between change and response depends on fear of absolute poverty, we have seen that it fails to account for the fact that the multi-phasic effort to reduce population growth occurs simultaneously with a spectacular economic growth. Davis writes the “fear of hunger” may be there in extreme circumstances, but a greater force is what he labels “fear of invidious deprivation”. Thus, “if each family is concerned with its prospective standing in comparison to other families within its reference group, we can understand why the peoples of the industrializing and hence prospering countries altered their demographic behavior in numerous ways that had the effect of reducing the population growth brought about by lowered mortality” (Davis, 1963, p. 362).
- One of the Ethiopian pioneers of the role of demographic factors in *land pressure and rural poverty* has been the prolific rural sociologist, Dessalegn Rahmato. In his many years of contextual, community-based research in densely populated southern zones of Ethiopian, he has stressed the complex and impoverishing nexus of natural resources, land, livelihood and population (Dessalegn, 1992, 2009). He concludes that the past demographic responses of land intensification, resettlement, migration and labor mobility are insufficient for poverty reduction and food security, and that change in land, labor and environmental policies are needed, by both the government and the many NGOs which operate in his areas of study (Dessalegn, 2009).
- The long-standing population pressure and response issues then do resonate in twenty-first century Ethiopia, with relatively high rates of economic growth in the African context, but with *chronic hunger and poverty and increased climate variation*. Davis (1963) found that the main factors related to nineteenth and mid twentieth century reductions in fertility were later age at marriage, increased contraception and abortion, rural-urban migration and shrinking land size. We will see that these factors are also important facilitating factors in the incipient demographic transition in Ethiopia (Teller et al., 2010).
- *Population structure* – is both a determinant and a consequence of socio-cultural, economic, environmental, technological, institutional and historic factors (see Fig. 1.1). Because of the great diversity of the country, it must be studied at national, regional, agro-ecological, community, household and individual levels. Thus processes and indicators at these six levels are seen as necessary to understand the complex nexus with social change and economic development (Teller, 2005).

1.5 The Framework – Relevance to Population, Poverty, Environment, Climate Change, Health and Education Policies

Through a multi-level, contextual approach, the framework strives to bridge the academic-policy gaps by facilitating access to relevant research findings and recommendations. The main population-development related issues identified are poverty, food insecurity, governance, environmental degradation, climate change, malnutrition and mortality. Thus the research must be relevant, timely and useful, and application of policy, evaluation, ethnographic and participatory research methods are included here. It is a recognition that the population-development nexus is complex, contextual, dynamic and in need of rigorous research to produce useful information.

Key conceptual multi-phasic risk-response approach: demographic risk, vulnerability and adaptation to natural and human hazards (within resources constraints). Given the highest development policy issues in the country is poverty and food insecurity reduction (PASDEP, in MoFED, 2006), and that the population policy is embedded in the PASDEP (MoFED, 2008b), we apply an approach which we adapted from the pioneering studies of Sen (1981, 1999) and Anderson and Woodrow (1998), which balances the disaster and poverty determinants (on the left-hand side of the figure), with resilience, human responses and adaptive and productive capacities (on the right-hand side of the figure).

The recent Hyogo Conceptual Framework on Disaster Risk Reduction, within a sustainable development context and for the 2005–2015 period (ISDR, 2002, 2005), has been adopted by the UN system (and likely to be approved by the Ethiopian government-MoARD, 2010) for building the resilience of nations and communities to the types of disasters and hazards that commonly inflict Ethiopia, and now updated to include the latest research on climate change adaptation. However, the population dynamics and demographic factors are NOT among the 11 underlying risk factors in the strategic framework for action (Teller, 2010).

1.6 The Main Demographic Responses and Change in Ethiopia

A policy-relevant, evidence-based research to action approach in Ethiopia should address several main demographic change dynamics (Assefa, 1994; Markos, 1997; Dejene, 1997; Lindstrom and Betamariam, 1999; Teller et al., 2010). These include the following:

- The underlying *macro demographic* structures in Ethiopia are large size, young age structure, rapid growth and uneven geographic distribution. These are structural influences, and in turn are affected by the *micro demographic* dynamics (high fertility, lowering mortality, temporary vs. permanent migration, etc.) at the community, household and individual levels.

- The key demographic-related *responses and adaptation to population pressure-poverty/hunger vulnerabilities*, climate change, livelihood threats and other human and natural hazards. These responses are migration, labor mobility and circulation, abortion, nuptiality and delays in childbearing and family formation and composition.
- There are long-term consequences in *human development* and social capital (health, nutrition, education, employment, marriage/family formation, gender equity and social mobility) that feedback into the population structure and nexus with development.

1.7 Methods and Measurements

It is indispensable that development related data be credible, trustworthy and useful to policymakers (PRB, 2009; see Chapter 18). While there are many quality control issues of coverage, accuracy, reliability and timeliness, the advantage of demographic data is that much of it is measurable in biometric form, routinely collected in internationally standardized ways, and increasingly used for monitoring human development goals. We address the following issues and aspects of data sources and methods in this book:

- *Biometric and psycho-social metric* nature of demographic data (Kawachi and Subramanian, 2006): age, gender, births, deaths, anthropometry, youth aspirations, transition to adulthood and life course intentions; also related spatial-ecological data: physiographic, agro-ecological and climatic.
- *Multiple Data Sources*: census, survey, surveillance, service statistics, research, case study, ethnographic and evaluations.
- *Data quality*, reliability, representativeness and accessibility: recent census mistrust; migration coding, sampling biases, timeliness; service statistics; national accounts; conflicting, inconsistent demographic data.
- *Analysis and interpretation*: demographic models, longitudinal methods, projections, trends, inequalities, differential.
- *Monitoring and Evaluation*: rigorous frameworks, targets, outcomes and impact indicators needed for evidence-based decision making.
- Indicator matrix and data sources of “*Key Variables*” at national, regional, agro-ecological, community, household and individual levels.

1.8 Local Institutional Capacity and Professional Collaboration

This is important in order to develop more appropriate and useful demographic theories and conceptual frameworks to address complex and priority population and development policies. The call for “endogenising” research capability in Africa, made in 1994 by Adepoju is still very much relevant to the less advanced sub regions like the Sahel, the Horn of Africa, and Central Africa.

Since there is much ideologically oriented and donor driven background to the formulation of national population policies in many developing countries, many of them have not been well implemented (May, 2006). Most experienced and policy-relevant demographers working in the Ethiopian context are spread out between government, university, international organization and private consultancies, and some live abroad. The younger demographers, many having worked in government organizations, are also deciding among alternative different career paths.

It should be the role of the writing of a policy-relevant academic book to *foster new thinking among demographers* and related development researchers, as well as strengthen institutional capacity, in the form of theories, concepts, models and evidenced-based policy recommendations. The multi-level, interdisciplinary and contextual frameworks and approaches proposed here are consistent with this strategic approach.

The design and implementation of the population policy, within the context of PASDEP and the MDGs, require both *professional and institutional strengthening*. According to new National Population Policy and Plan of Action (MoFED, 2008), these must include national and regional universities, the Central Statistical Agency, and the research, analysis, planning and evaluation offices of MoFED, line ministries (Health, Education, Agriculture, Women's Affairs), as well as government and other research institutes. International partners in population, like UNFPA, are now including research and training under the area of "governance", and to achieve an outcome of strengthening capacity at national and regional levels for evidence – based decision making (UNFPA, 2010).

1.9 Conclusions

We have presented a more holistic, multidisciplinary conceptual framework for this book, with macro and micro population variables that interact with human and socioeconomic development at all levels. It attempts to balance the often excessive focus on fertility with more distributional and equity aspects of population/land pressure, migration, cultural change and social mobility. It should be more relevant and useful to policymakers in many of the poverty-ridden, unstable and food insecure countries. Policy-relevant population scientists need to influence decision-makers on the fact that taking population structure and dynamics into account can improve strategic planning for mid and long-term risk reduction, vulnerability mitigation and for productive adaptation and capacity-building.

References

- Adamo, S. (2009). *Climate Change–Population Interactions: A Spatial and Regional Perspective*. Morocco, IUSSP, October.
- Adepoju, A. (1994). Rethinking the Approaches to the Study of Population Dynamics in Africa. UAPS, Paper No. 1, Dakar.
- Adepoju, A. (2009). International Migration and Climate Change in Africa. IUSSP plenary.

- Ali Hassan. (2008). *Vulnerability to Drought Risk and Famine: Local Responses and External Interventions Among the Afar of Ethiopia: A Study on the Aghini Pastoral Community*. Germany, University of Bayreuth, January.
- Alwang, J., Siegel, P., and Jorgensen, S. (2001). Vulnerability: A View from Different Disciplines. Paper prepared for the World Bank, Washington, DC, May.
- Anderson, M., and Woodrow, P. (1998). *Rising from the Ashes: Development Strategies in Times of Disaster*. Boulder, CO, Lynn Rienner Publishers.
- Assefa Hailemariam. (1994). Population Dynamics and Their Underlying Implications for Development in Ethiopia. In MoPED, Integrating Population and Development Planning, Addis Ababa, May.
- Belay Tessema. (1996). Population Pressure and Problems of Arable Land Degradation in Ethiopia. In Aklilu Kidane (eds.), *Integration of Population, Environment, Equitable and Sustainable Development*. Ethiopia, Addis Ababa University, UNFPA.
- Bilsborrow, R. (1987). Population Pressures and Agricultural Development in Developing Countries: A Conceptual Framework and Recent Evidence. *World Development* 15: 2.
- Bilsborrow, R., and Carr, D. (2001). Population, Agricultural Land Use and Environment in Developing Countries. In Lee, D.R., and Barrett, C.B., *Tradeoffs or Synergies? Agricultural Intensification, Economic Development and the Environment*. New York, NY, Cabi Publishing, pp. 35–55.
- Binswanger-Mkhize, H.P. (2009). Challenges and Opportunities for African Agriculture and Food Security: High Food Prices, Climate Change, Population Growth and HIV and AIDS. Expert Meeting on How to Feed the World in 2050, Rome, June.
- Birdsall, N., Kelley, A., and Sinding, S. (eds). (2001). *Population Matters: Demographic change, Economic Growth and Poverty in Developing Countries*. Oxford, Oxford University Press.
- Bongaarts, J. (2007). Fertility Transition in the Developing World: Progress or Stagnation? Paper presented at the Annual Meeting of the Population Association of America, New York, NY, March.
- Boserup, E. (1965). *The Conditions of Agricultural Growth*. New York, NY, Aldine.
- Central Statistical Authority (CSA). (1992). Analysis of Local Moves and Internal Migration. In Experimental Vital Registration System, Vol. II, Addis Ababa.
- Central Statistical Authority (CSA). (2004–2008). *Statistical Abstracts*. Addis Ababa, Central Statistical Authority (CSA).
- Central Statistical Agency (CSA) and ORC Macro. (2001). *Ethiopia Demographic and Health Survey 2000*, Addis Ababa and Calverton, Maryland, MD, CSA and Macro International.
- Central Statistical Agency (CSA) and ORC Macro. (2006). *Ethiopia Demographic and Health Survey 2005*, Addis Ababa and Calverton, Maryland.
- Cohen, J. (2008). *Beyond Population: Everyone Counts in Development*. Center for Global Development, Demography and Development Lecture Series, Washington, DC, September.
- Davis, K. (1963). The Theory of Change and Responses in Modern Demographic History, *Population Index*, 29.4, October.
- Dejene Arado. (1997). *Population Growth and Poverty*. Addis Ababa, AAU.
- Demographic Training and Research Center (DTRC) and Population Training and Studies Center (PTSC). (2000). *Migration, Gender and Health Survey in Five Regions of Ethiopia 1998*. In Eshetu Gurmu, Goldstein, S. and Goldstein, A. (eds.). Providence, RI, DTRC and PTSC, August.
- de Sherbinin, A., Van Wey, L., McSweeney, K., Aggarwal, R., Barbieri, A., Henry, S., Hunger, L., Twine, W., and Walker, R. (2007). Rural Household Demographics, Livelihoods and the Environment. *Global Environmental Change* doi:10.1016. www.elsevier.com/locate/gloenvcha.
- Dessalegn Rahmato. (1992). The Dynamics of Rural Poverty: Case Studies from a District in Southern Ethiopia, CODESRIA Monograph Series 2/92, Addis Ababa.
- Dessalegn Rahmato. (2009). *The Peasant and the State Studies in Agrarian Change in Ethiopia, 1950s–2000s*. Addis Ababa, Addis Ababa University Press.

- Devereux, S., Sharp, K., and Yared Amare. (2002). *Destitution in the Northeastern Highlands (Amhara Region): Interim Report*. Brighton: IDS Sussex and Addis Ababa, Save the Children (UK), Ethiopia.
- Economic Commission for Africa (ECA). (2009). *ICDP and the MDGs: Working as One*. Addis Ababa, ECA, UNFPA and AU, October.
- FEWSNET/Ethiopia. (2002–2010). *Ethiopia Food Security Update, Famine Early Warning System Network*. Addis Ababa, USAID, (monthly bulletins:www.fewsnet/ethiopia).
- Findley, S. (1992). Circulation as a Drought-Coping Strategy in Rural Mali. In Goldschneider, C. (ed.), *Migration, Population Structure and Redistribution Policies*. Boulder, CO, Westview Press.
- Food and Agricultural Organization (FAO). (2009). *The World's Food Situation*. Rome, FAO.
- Hawley, A. (1950). Human Ecology (see chapter 12 references).
- ISDR. (2005). Nyogo Framework, 2005–2009 (see chapter 12 references).
- International Strategy for Disaster Reduction (ISDR)/UN. (2002). *Living with Risk: A global Review of Disaster Reduction Initiatives*, UN: Interagency Secretariat, July.
- Johnson, D.G., and Lee, R. (eds.). (1987). *Population Growth and Economic Development: Issues and Evidence*. National Research Council. Madison, Wisconsin, The University of Wisconsin Press.
- Kawachi, I., and Subramanian, S.V. (2006). Health Demography. In Poston, D. and Micklin, M. (eds.), *Handbook of Population*. New York, NY, Springer, pp. 787–808.
- Kirk, D. (1996). Demographic Transition Theory. *Population Studies* 50(3): 361–387, November.
- Lautze, S., Aklilu, Y., Ravens-Roberts, A., Young, H., and Kebede, G. (2003). *Risk and Vulnerability in Ethiopia, 2003: Learning from the Past, Responding to the Present, Preparing for the Future*. Ethiopia, Tufts University and USAID, June.
- Lindstrom, D., and Betamariam Berhanu. (1999). The Impact of War, Famine and Economic Decline on Marital Fertility in Ethiopia. *Demography* 36(2): 247–261.
- Lutz, W., and Scherbov, S. (2001). *Population, Environment, Development, Agriculture Model (PEDA), Technical Manual*. Addis Ababa, UNECA, May.
- Markos Ezra. (1997). *Demographic Responses to Ecological Degradation and Food Insecurity: Drought Prone Areas in Northern Ethiopia*. Amsterdam, PDOD Publications.
- Markos Ezra, and Gebre-Egziabher Kiros. (2000). Household Vulnerability to Food Crisis and Mortality in the Drought-Prone Areas of Northern Ethiopia. *Journal of Bioscience* 32: 395–409.
- May, J. (2006). Population Policy. In Poston, D. and Micklin, M. (eds.), *Handbook of Population*. New York, NY, Springer, pp. 827–852.
- Mesfin Woldemariam. (1986). *Rural Vulnerability to Famine in Ethiopia, 1958–1977*. London, Intermediate Technology Publications.
- Mesfin Woldemariam. (1991). *Suffering Under God's Environment: A Vertical Study of the Predicament of Peasants in North-Central Ethiopia*. Berne, Switzerland, African Mountains Association and Geographica Bernensia.
- Ministry of Agriculture and Rural Development (MoARD). (2010). *Enhancing Disaster Risk Management of Reducing the Impact of Climate Change*, National Conference on Disaster Risk Management, UN Conference Center, Jan 21–22.
- Ministry of Finance and Economic Development (MoFED). (2006). Ethiopia; *Building on progress, a Plan of Accelerated and Sustainable Development to End Poverty (PASDEP)*, (2005/6–2009/10).
- Ministry of Finance and Economic Development (MoFED). (2008a). *Ethiopian Progress Towards Achieving the MDGs, 2007/8*. Federal Democratic Republic Of Ethiopia.
- Ministry of Finance and Economic Development (MoFED). (2008b). *Country Report for the Fifteen Year Review and Assessment Report for the Implementation of the Dakar/NGOR Declaration and the ICPD program of Action*, MoFED, Addis Ababa, November.
- Ministry of Finance and Economic Development (MoFED). (2008c). *The National Population Plan of Action, 2009/2010–2015-16*, Addis Ababa, December.

- Mosley, H., and Chen, L. (1984). A Conceptual Framework of Child Survival and Health. In Mosley, W.H., and Chen, L.C. (eds.), *Child Survival, Population and Development Review*, Supplement to Vol.10.
- Mulat Demeke. (2001). Off Farm Income Generation Opportunities in Ethiopia: Opportunities and Constraints in Food Insecure Weredas of Oromiya, and Amhara Regional States. *Ethiopian Development Forum* 2(1), Addis Ababa University.
- Oucho, J. (1990). Migration Linkages in Africa: Retrospect and Prospect. In Conference on the Role of Migration in African Development: Issues and Policies for the 90's. Union for African Population Studies (UAPS), Dakar.
- Population Reference Bureau. (2009). Demographic Data for Decisionmaking: Case Studies from Ethiopia and Uganda. www.prb.org/pdf09/demographicdecisionmaking.pdf
- Ringheim, K., Teller, C., and Sines, E. (2009). Ethiopia at a Crossroads: Demography, Gender and Development. Policy Brief, Population Reference Bureau, Washington, DC, November. www.prb.org/publications
- Sen, A. (1981). *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford, Clarendon Press.
- Sen, A. (1999). *Development as Freedom*. New York, NY, Knopf.
- Tacoli, C. (2007). Migration and Adaptation to Climate Change, Sustainable Development Opinion, International Institute for Environment and Development.
- Teller, C. (1998). The Community Context of Migration in Ethiopia: Structural, Institutional and Cultural Factors, with Examples from Densely Population Zones of the Southern Region. Paper present at a Workshop on Migration Health, Gender and Development, Addis Ababa, March.
- Teller, C. (2005). The Demography of Hunger: Case Studies in Population/Land Pressure in Vulnerability to Food/Nutrition Insecurity in Ethiopia. Paper presented at the IUSSP Conference, Tours, France, July.
- Teller, C. (2010). Demographic and Socio-Ecological Dimensions of Vulnerability, Capacity and Response in Africa. Conference on Disaster Risk Management in Africa, University of Arizona and Bahr Dar University, January.
- Teller, C., Assefa Hailemariam, and Tesfayi Gebreselassie. (2010). "Revising the Demographic Transition Model for the Volatile Horn of Africa" Demographic Vulnerability and Response to Hazards in Ethiopia, Paper presented at the PAA Meetings, Dallas, TX, April.
- Teller, C., Assefa Hailemariam, Tesfayi Gebreselassie, and Ali Hassan. (2009). Do Population Dynamics Affect Food/Nutrition Security and Mortality? A Delicate Balance of Vulnerability and Resilience in Ethiopia. Paper presented at the IUSSP, Morocco, October.
- Temesgen Deresse, Hassan, R., and Ringler, C. (2008). Measuring Ethiopian Farmers' Vulnerability to Climate change Across Regional States. IFPRI Discussion Paper 00806, October.
- Tiffen, M., and Mortimore, M. (1994). Land Resources Management in Machakos District, Kenya 1930–1990. World Bank Environment Paper 5, World Bank, Washington, DC
- Transitional Government of Ethiopia (TGE). (1993). *The National Population Policy of Ethiopia*. Addis Ababa, TGE.
- Turner, B.L. et al. (2003). A Framework for Vulnerability Analysis in Sustainability Science. www.pnas.org/cgi/doi/10.1073/pnas.1231335100
- Turner, B.L., Hayden, G., and Kates, R. (1993). *Population Growth and Agricultural Change in Africa*. Gainesville, FL, University Press of Florida.
- UNDP. (2009). Human Development Report, 2008.
- United Nations Development Program (UNDP). (2010). Millennium Development Goals; Tracking Country Progress, New York, NY. <http://www.undp.org.mdg/countries>
- UN/ESA. (2010). World Population Projections: Ethiopia. www.esa.unpd
- UNFPA. (2010). Fifth Country Program, Ethiopia (draft)
- UNHCR. (2009). *Vulnerability among Refugees and IDP in the Horn of Africa*. IUSSP, Morocco.
- UNICEF. (2009). The State of the World's Children: Statistical Tables, Special edition, November.

- Webb, P., von Braun, J., and Yihesac Yohannes. (1992). *Famine in Ethiopia: Policy Implications of Coping Failure at National and Household levels*. Research Report No. 92. IFPRI, Washington, DC.
- Yemane Berhane, Assefa Hailemariam, and Kloos, H. (eds.). (2006). *Epidemiology and Ecology of Health and Disease in Ethiopia*. Addis Ababa, Shama Books.

Part II
Demographic Transitions and Human
Development

Chapter 2

The Fertility Transition in Sub-Saharan Africa, 1990–2005: How Unique Is Ethiopia?

Tesfayi Gebreselassie

Abstract We present the pace and nature of the fertility transition in sub-Saharan Africa in general, and eastern and southern Africa in particular, using the latest available data from the Demographic and Health Surveys (DHSs). Nearly all of the countries in sub-Saharan Africa have experienced the onset of fertility transition. However, the pace of decline is slow in several of these countries, and stalling of fertility decline is evident in some countries where fertility decline had begun. The stall occurred in both rural and urban areas. Since 1990, Ethiopia showed a decline in fertility from 6.6 in 1990 to 5.5 in 2000, then slowed down to 5.4 in 2005. Fertility transition in eastern and southern Africa is more advanced in urban areas, but at incipient level in rural areas. Around 2005, urban areas in 3 countries (Ethiopia, Namibia, and Zimbabwe) were in the advanced stage of fertility transition. Urban areas in Ethiopia have the lowest fertility among urban areas in eastern and southern Africa. Looking at fertility levels in capital cities in eastern and southern Africa, Addis Ababa stands out *as the only city* with below replacement fertility after the 1990s. In the 1990s, urban areas in six of the ten countries in this analysis had a contraceptive prevalence less than 20%. By around 2005, contraceptive prevalence surpassed above 30% in most urban areas of eastern and southern Africa. Overall, age at first marriage is increasing, however marriage during teenage years is still the norm in most countries in the sub region. The largest increase between ca. 1990 and ca. 2005 was in *urban Ethiopia*, in the order of around 2.5 years. In the 15 years span from ca. 1990 to ca. 2005 under-five mortality declined most rapidly by 43% in Malawi (a decline of 3.6% per year), by 41% in *Ethiopia* (a decline of 2.7% per year) and by 38% in Zambia (a decline of 2.5% per year). In conclusion, *Ethiopia is unique from other sub-Saharan Africa countries in 4 major ways*: well advanced fertility transition in urban areas (with only 16% of the population), but incipient (early-transition) fertility level in rural areas; significant increase in contraceptive

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use; rapid infant and child mortality decline; and a substantial decline in desire to have additional child in rural areas.

Keywords Ethiopia · Sub-Saharan Africa · Fertility transition · Contraceptive use · Under-five mortality

2.1 Introduction

Fertility transition or sustained decline from high to low fertility is now widespread and virtually universal. It is an irreversible decline in fertility that follows a period of relatively constant high fertility. There can be fluctuations but there is no going back to the pre-decline level (Knodel, 1974). Partly due to differences in the period of the onset of demographic transition and partly due to differences in the rate of the transition, population growth and changes in age profile of the population manifest in different ways. In this respect, the pace of fertility decline in the demographic transition is as important as the fertility decline itself (Casterline, 2001). The United Nations (UN) projections indicate that most countries would complete their fertility transitions before 2050 (UN, 2001). Faster fertility decline not only brings about smaller population size at the end of the demographic transition, but it also contributes to a favorable age composition during its initial phase.

Coale (1973) specified three preconditions for fertility decline: (1) fertility must be within the calculus of conscious choice, (2) reduced fertility must be advantageous, and (3) effective techniques of fertility reduction must be available. For sub-Saharan Africa, UN Economic Commission for Africa (UNECA) (2002) listed four essential preconditions for deliberate family limitation:

1. Late age at first marriage;
2. Conscious decisions: mainly on psychological and cultural transition that is seemingly and intimately tied to education in general and female education in particular;
3. Recognize reducing fertility is advantageous: for instance, in reducing the high cost of education and increasing the desirability for education; and
4. Effective, available, accessible contraceptive methods and support services.

In this chapter we present the pace and nature of the fertility transition in sub-Saharan Africa in general, and eastern and southern Africa in particular. The first part consists of an assessment of the linkages between fertility decline and stalling in sub-Saharan Africa, using the latest available data from the Demographic and Health Surveys (DHSs). We focus on those countries that have been covered by multiple DHSs. An overview of total fertility for rural and urban areas is provided and the stage of fertility transition is identified for each country.

In the second part, we examine trends and differentials in total fertility and in proximate determinants of fertility – especially, use of modern contraception,

infant mortality, age at first marriage, and reproductive intentions – among countries in eastern and southern Africa. The analysis relies on countries with at least three DHSs – namely Ethiopia,¹ Kenya, Madagascar, Malawi, Namibia, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe. The dates of the DHSs for each country vary. The DHSs for this analysis were selected to maintain a 10-year span (on average) between the first survey and the second, and a 5-year span (on average) between the second and the third surveys. The list of SSA countries with at least three DHSs can be found in Table 2.6 (see Appendix). For each country, indicators are estimated from the first survey administered around 1990 (ca. 1990), the second survey administered around 2000 (ca. 2000) and the third survey administered around 2005 (ca. 2005). Our approach is essentially descriptive and involves the study of levels and trends in the sub region. In addition, the country-specific indicators are aggregated into unweighted averages for the sub region.

2.2 Fertility Transition in Sub-Saharan Africa

In comparison to most regions of the world, fertility remains high in sub-Saharan Africa. Demographic research has shown that the onset of decline has started in several sub-Saharan African countries in the 1990s (Cohen, 1998; Kirk and Pillet, 1998; Garenne, 2008), however, the magnitude, pace, and continuity of these declines are yet not well established. By the early 1990s fertility in at least a few sub-Saharan African nations was beginning to fall. Over the past 15 years, the spread of fertility transition has been observed throughout the region (Cohen, 1998; Kirk and Pillet, 1998; Tabutin and Schoumaker, 2001; Garenne and Joseph, 2002; Shapiro and Tambashe, 2002; Sneeringer, 2009). In addition, some research suggests that the pace of fertility declines varies greatly from one country to another (Garenne and Joseph, 2002; Tabutin and Schoumaker, 2004).

A number of studies have documented that fertility transition in sub-Saharan Africa is first manifested in urban places, prior to the emergence of fertility decline in rural areas (Cohen, 1993; Jolly and Gribble, 1993; Garenne and Joseph, 2002; Shapiro and Tambashe, 2002). Reed et al. (1999) argued that the onset of fertility transition in urban areas is integral to innovation-diffusion theories emphasizing urban settings as places of innovation in fertility behavior. Urban places offer greater opportunities for schooling and consequently raising the net cost of children to urban parents and bringing into play quality-quantity tradeoffs (Becker, 1991; Shapiro and Tambashe, 2003). In general, factors such as increased age at marriage (Westoff, 1992; Blanc and Poukouta, 1997; Hinde and Mturi, 2000; Harwood-Lejeune, 2001),

¹The 1990 National Family and Fertility Survey (NFFS) was conducted by the Central Statistical Authority (CSA, 1993). The NFFS primarily targeted women age 15–49. The questionnaires used in NFFS survey were similar to the standardized DHS questionnaires. Due to security and other reasons, the NFFS excluded from its coverage Eritrea, rural Tigray, Asseb, and Ogaden autonomous regions. In addition, fieldwork could not be carried out for Northern Gondar, Southern Gondar, Northern Wello, and Southern Wello due to security reasons.

greater contraceptive use (Njogu and Martin, 1991; Caldwell et al., 1992; Ross and Frankenberg, 1993), declining infant and child mortality (Locoh, 1994; Kirk and Pillet, 1998), female education (Cohen, 1993; Schultz, 1993, 1994; Jejeebhoy, 1995; Shapiro et al., 2003), conflict and economic crisis (Lindstrom and Betemariam, 1999; Eloundou-Enyegue et al., 2000; Agadjanian and Prata, 2002), tradition and religion (Caldwell, 1982), culture (Pollak and Watkins, 1993), female autonomy (Jejeebhoy, 1996; Hindin, 2000; McDonald, 2000), and male dominance and lack of communication among couples (Ezeh, 1996; Odhiambo, 1997; Dodoo, 1998; Greene and Biddlecom, 2000; Tesfayi, 2007) have been identified in the literature as contributing to changes in reproductive behavior.

More recently, demographic research has documented the stalling of the transition² in some countries that had been at the forefront of fertility decline in sub-Saharan Africa (Westoff and Cross, 2006; Bongaarts, 2006, 2008; Shapiro and Tesfayi, 2008). Some studies have suggested that the faltering of economic development may be the cause of the stalling of fertility decline (Bongaarts, 2006), but there is a lack of conclusive evidence in sub-Saharan Africa (Shapiro and Tesfayi, 2008). The stall has implications for future population growth because projected population size is sensitive to minor variations in current fertility trends.

The fertility transition may be characterized by five stages that include the pre-transitional stage when total fertility (TFR) is 7 or more children per woman and shows very weak or no sign of decline; the early-transition (incipient) stage when fertility levels are between 5 and 6.9 children per woman; the mid-transition stage that encompasses fertility levels of 3.0 to 4.9 children per woman; the late-transition (advanced) stage corresponding to fertility lower than 3 children per woman but higher than the replacement level of 2.1 children per woman; and post-transition (below-replacement fertility) stage when fertility level is below 2.1 children per woman (see Bongaarts, 2003). Countries are categorized as stalling or declining based on Bongaarts (2003). An overview of fertility transition in sub-Saharan Africa is provided by the data in Table 2.7 (see Appendix), which gives national total fertility rates as well as those for rural and urban places for each survey in countries where there have been multiple surveys. For each country, the table also identifies the trend in fertility, based on examination of the national TFR in the two most recent surveys. Figure 2.1 shows the different stages of fertility transition and trends in sub-Saharan Africa for countries with multiple DHSs.

Figure 2.2 presents trends in fertility rates for 19 sub-Saharan Africa countries with at least three DHSs.³ The three points plotted for each country give the total fertility rates (TFR) measured in, respectively, the first survey (ca. 1990), the second survey (ca. 2000), and the third survey (ca. 2005).

The dashed line represents Ethiopia. This is a heterogeneous group with respect to fertility change, including countries where the most recent declines in fertility

²Stall is defined as a failure of the national TFR to decline between two (most recent) DHS surveys after an established trend of decline in national fertility (Bongaarts, 2006).

³Total fertility rates for the three years preceding the survey for each country were generated from STATcompiler (except for the 1990 NFFS, Ethiopia). <http://www.measuredhs.com>

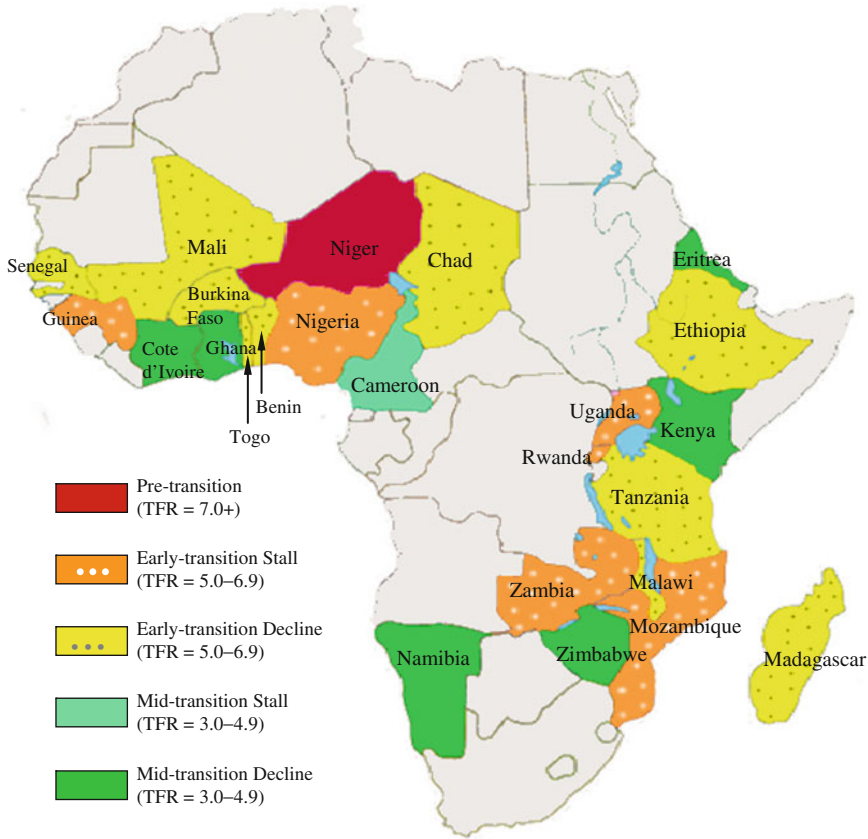


Fig. 2.1 Different stages of fertility transition in sub-Saharan Africa

have been substantial (e.g. Namibia), countries in which fertility at the national level has declined but rather modestly (e.g. Cote d'Ivoire), and the pre-transitional country (Niger). Most of the stalling (or slight upturn) in fertility occurred between ca. 2000 and ca. 2005, in Cameroon, Guinea, Kenya, Rwanda, Tanzania, and Zambia. Ethiopia registered a decline in fertility from 6.6 in ca. 1990 to 5.5 in ca. 2000 and then slowed down to 5.4 in ca. 2005.

Figures 2.3 and 2.4 show the percentage decline in TFR per year spanning 15 years from ca.1990 to ca. 2005 among the 19 countries with at least three DHSs ordered according to the magnitude of the pace of decline.⁴ Often, urban fertility decline outpace that of rural areas in most countries in this analysis. On average, in the 15 years spanning ca. 1990 to ca. 2005, the annual percent decline in TFR was nearly 1.5% in urban areas and 0.6% in rural areas.

⁴The earliest DHS survey in this cohort was conducted in 1986 in Senegal.

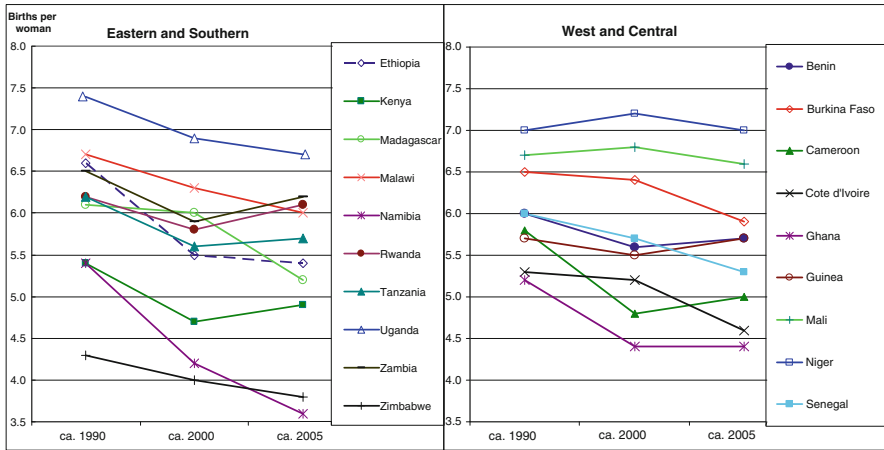


Fig. 2.2 Trends in total fertility rates, sub-Saharan Africa countries with at least three DHSs, by sub region: ca. 1990–ca. 2005 (source: calculated from data)

Fertility tended to fall primarily in urban places, while rural fertility remained stable or increased. Figure 2.3 shows that Benin and Rwanda were experiencing urban fertility stall or increase. On the other hand, Burkina Faso, Ethiopia, Ghana, and Tanzania experienced a decline of urban TFR ranging 2.5–2.8% per year, while in Cameroon, Cote d’Ivoire, Guinea, Kenya, Malawi, Namibia, Senegal, Uganda, Zambia, and Zimbabwe, the decline in urban fertility reached 1–2% per year. In

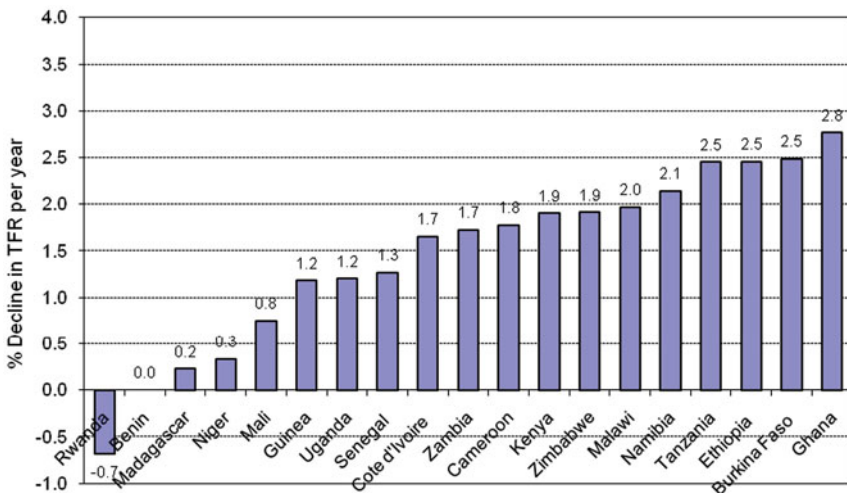


Fig. 2.3 Percentage decline in the total fertility rate per year – urban, sub-Saharan Africa countries with at least three DHSs: ca. 1990–ca. 2005 (source: calculated from data)

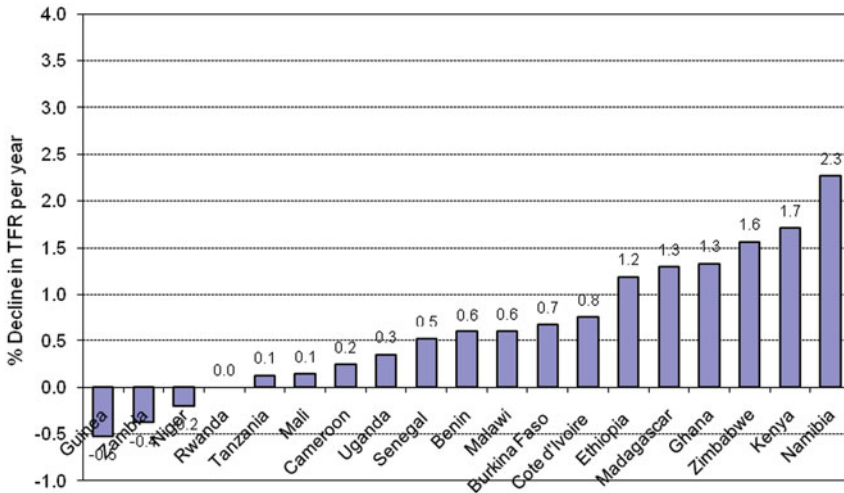


Fig. 2.4 Percentage decline in the total fertility per year – rural, sub-Saharan Africa countries with at least three DHSs: ca. 1990–ca. 2005 (source: calculated from data)

addition, urban TFR showed a decline of less than 1% in Madagascar, Mali, and Niger (see Fig. 2.3).

Rural fertility stall or increase was observed in Guinea, Niger, Rwanda, and Zambia in the 15 year span covering ca. 1990 through ca. 2005 (see Fig. 2.4). Only one country – namely Namibia, experienced rural fertility decline of more than 2% per year in this period. The remaining fourteen countries (Benin, Burkina Faso, Cameroon, Cote d’Ivoire, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Senegal, Tanzania, Uganda, and Zimbabwe) experienced rural fertility decline of less than 2% per year.

2.3 Trends and Differentials in Eastern and Southern Africa

2.3.1 Trends and Differentials in Total Fertility Rates (TFRs)

Estimates of total fertility rates for ten countries in eastern and southern Africa with at least three DHSs is shown in Table 2.1. All TFR estimates cover the three years preceding the survey for each country. On average, between ca.1990 and ca. 2005, fertility declined by about one child (from 6.6 to 5.5) in the 15-year span in eastern and southern Africa (see Fig. 2.5). Fertility differences vary widely by level of education and residence, and from country to country. In the 15-year span, the largest decline in fertility at a national level occurred in Kenya and Namibia (about two children). Ethiopia achieved a decline of about one child during this period.

Table 2.1 Total fertility rates for the three years preceding the survey by education and residence, in eastern and southern Africa countries with at least three DHSs: ca. 1990–ca. 2005

		Education				Residence			
		No education		Primary	Secondary or higher	Rural	Urban	Capital/large cities	
Ethiopia	ca. 1990	7.1	4.9	2.7	7.3	3.8	3.0	6.6	
	ca. 2000	5.9	4.7	3.2	6.0	3.0	1.8	5.5	
	ca. 2005	6.1	5.1	2.0	6.0	2.4	1.3	5.4	
Kenya	ca. 1990	7.5	6.9	4.9	7.1	4.5	3.6	6.7	
	ca. 2000	5.7	5.0	3.5	5.8	3.4	2.6	5.4	
	ca. 2005	6.7	5.5	3.2	5.4	3.3	2.7	4.9	
Madagascar	ca. 1990	6.5	6.8	4.3	6.7	3.8	3.2	6.1	
	ca. 2000	6.8	6.5	4.2	6.7	4.2	2.8	6.0	
	ca. 2005	6.6	5.7	3.4	5.7	3.7	2.7	5.2	
Malawi	ca. 1990	7.2	6.4	4.4	6.9	5.5	5.6	6.7	
	ca. 2000	7.3	6.4	3.0	6.7	4.5	3.9	6.3	
	ca. 2005	6.9	6.2	3.8	6.4	4.2	2.7	6.0	
Namibia	ca. 1990	6.5	6.0	4.1	6.3	4.0	–	5.4	
	ca. 2000	6.3	5.0	3.3	5.1	3.1	–	4.2	
	ca. 2005	6.2	4.5	3.0	4.3	2.8	–	3.6	
Rwanda	ca. 1990	7.0	5.9	4.3	6.3	4.5	5.9	6.2	
	ca. 2000	6.1	5.9	4.9	5.9	5.2	4.9	5.8	
	ca. 2005	6.9	6.1	4.3	6.3	4.9	4.3	6.1	
Tanzania	ca. 1990	6.5	6.3	4.2	6.6	5.1	3.8	6.2	
	ca. 2000	6.5	5.2	3.5	6.5	3.2	2.5	5.6	
	ca. 2005	6.9	5.6	3.3	6.5	3.6	2.5	5.7	

Table 2.1 (continued)

	Education			Residence				National
	No education	Primary	Secondary or higher	Rural	Urban	Capital/large cities		
Uganda	ca. 1990	7.9	7.2	5.6	7.6	5.7	6.0	7.4
	ca. 2000	7.8	7.3	3.9	7.4	4.0	3.4	6.9
	ca. 2005	7.7	7.2	4.4	7.1	4.4	3.6	6.7
Zambia	ca. 1990	7.1	6.8	4.9	7.1	5.8	5.3	6.5
	ca. 2000	7.4	6.5	3.9	6.9	4.3	4.3	5.9
	ca. 2005	8.2	7.1	3.9	7.5	4.3	4.0	6.2
Zimbabwe	ca. 1990	7.2	4.8	3.7	6.2	3.8	3.9	5.4
	ca. 2000	5.2	4.5	3.3	4.6	3.0	3.0	4.0
	ca. 2005	5.8	4.5	3.2	4.6	2.6	2.5	3.8
Average for sub region	ca. 1990	7.1	6.4	4.4	7.0	4.8	4.6	6.6
	ca. 2000	6.7	5.9	3.8	6.5	4.0	3.4	5.9
	ca. 2005	6.9	5.9	3.5	6.1	3.8	3.0	5.5

Source: STATcompiler, <http://www.measuredhs.com>; calculated from data.

– Not available.

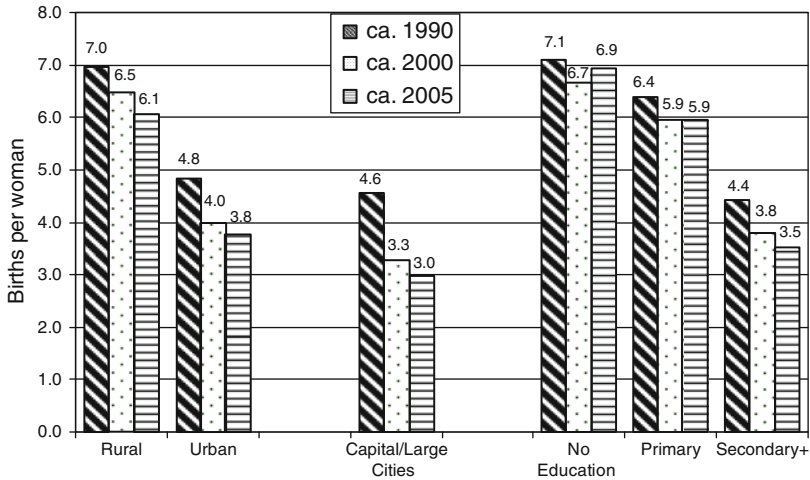


Fig. 2.5 Average total fertility rates for eastern and southern Africa countries with at least three DHSs: ca.1990–ca. 2005 (source: calculated from data)

Table 2.1 shows that fertility transition in the sub region is more advanced in urban areas, but at incipient level in rural areas. In ca.1990, total fertility in urban areas ranged from as high as 6.0 in Uganda to 3.8 in Ethiopia and Zimbabwe. Around 2000, all urban areas achieved fertility levels between 3 and 5 (except urban Rwanda). By ca. 2005, urban areas in 3 countries (Ethiopia, Namibia, and Zimbabwe) were in the advanced stage of fertility transition. It is evident from Table 2.1 that urban areas in Ethiopia have the lowest fertility among urban areas in eastern and southern Africa. Looking at fertility levels in capital cites in eastern and southern Africa, Addis Ababa stands out as the only city with below replacement fertility after ca. 1990.

Education is playing an increasingly important role in fertility reduction. Primary education is sufficient to change norms and behavior significantly, though access to secondary (and higher) education can bring about a sharp fall in fertility. Table 2.1 clearly shows that women with formal education maintain lower level of fertility than those with no education. On average, fertility declined from 4.4 in ca. 1990 to 3.5 in ca. 2005 among women with secondary or higher education (see Fig. 2.5).

By ca. 2005, comparing TFRs in eastern and southern Africa among women with secondary and higher level of education shows that Ethiopia is the only country in the sub region where women in this group achieved below replacement fertility. In the same period, women with secondary and higher level of education in Kenya, Madagascar, Malawi, Namibia, Tanzania, Zambia, and Zimbabwe had total fertility under 4.0. On average, the difference in total fertility between women with no schooling and women with secondary and higher level of education was around 3.5 children. The largest difference was about 4 children in Malawi in ca. 2000, and in Ethiopia and Zambia in ca. 2005.

The fertility declines in Ethiopia and the rest of eastern and southern Africa show substantial fertility differences by level of education and residence. In general, women with no schooling and those living in rural areas tend to have higher fertility in all countries in the sub region.

2.3.2 Trends in Modern Contraceptive Use

Comparative data on the level of contraceptive use of currently married women by residence and level of education covering the 15 year span (ca. 1990–ca. 2005) is shown in Table 2.2 below. Overall, contraceptive prevalence in eastern and southern Africa has doubled between ca. 1990 and ca. 2005 (on average from 13% around 1990 to 27% around 2005).⁵

Between ca. 1990 and ca. 2005, there has been progress in use of modern contraception, though often limited to urban areas and mostly among the educated social groups. Figure 2.6 shows that between ca. 1990 and ca. 2000, the level of contraceptive use increased by 67% in urban areas. In rural areas, contraceptive use more than doubled between ca. 1990 and ca. 2000, and continued to rise between ca. 2000 and ca. 2005.

At a national level, in ca. 1990, modern contraceptive prevalence among married women aged 15–49 ranged from as low as nearly 3% in Ethiopia and Uganda to as high as 36% in Zimbabwe. Around 1990, six countries (namely, Ethiopia, Madagascar, Malawi, Tanzania, Uganda, and Zambia) had contraceptive prevalence under 10%. By ca. 2000, Ethiopia, Madagascar, and Rwanda were the only countries in eastern and southern Africa with contraceptive prevalence less than 10%. Although most of the countries in the sub region show a rise in the level of contraceptive use, Rwanda was the only country with declining contraceptive use between ca. 1990 and ca. 2005.

Difference in contraceptive practice by residence shows a clear tendency for increased use of modern contraception in urban areas between ca. 1990 and ca. 2005. By ca. 1990, urban areas in seven of the ten countries in this analysis had a contraceptive prevalence less than 20%. Use of modern contraceptives continued to increase by ca. 2005 and surpassed above 30% in most urban areas of eastern and southern Africa. During this period, contraceptive prevalence in urban Ethiopia was the third highest in the sub region after Namibia and Zimbabwe.

⁵Data from various DHS reports from sub-Saharan Africa indicate that highest levels of contraceptive prevalence with respect to modern contraception tend to be in eastern and southern Africa.

Table 2.2 Percentage of currently married women aged 15–49 using any modern contraceptive method by residence and education, eastern and southern Africa countries with at least three DHSs: ca. 1990–ca. 2005

		Residence		Education			All
		Urban	Rural	No education	Primary	Secondary or higher	
Ethiopia	ca. 1990	15.5	1.2	1.1	8.3	30.3	2.9
	ca. 2000	28.3	3.3	3.7	13.2	33.0	6.3
	ca. 2005	42.2	10.6	9.8	21.9	45.9	13.9
Kenya	ca. 1990	25.5	16.4	9.7	19.2	29.3	17.9
	ca. 2000	37.9	25.4	16.1	28.2	46.3	27.3
	ca. 2005	39.9	29.2	8.0	28.8	51.7	31.5
Malawi	ca. 1990	17.2	6.0	4.8	8.2	37.9	7.4
	ca. 2000	38.2	24.1	21.7	26.5	41.6	26.1
	ca. 2005	34.7	26.9	22.9	28.0	41.0	28.1
Madagascar	ca. 1990	15.8	2.9	1.0	3.6	12.6	5.1
	ca. 2000	17.6	7.1	1.5	8.4	20.7	9.7
	ca. 2005	26.5	15.9	5.2	18.7	28.4	18.3
Rwanda	ca. 1990	19.7	12.6	11.1	13.0	27.5	12.9
	ca. 2000	21.2	8.6	3.2	4.8	18.8	10.3
	ca. 2005	16.1	3.9	5.9	9.7	29.1	5.7
Tanzania	ca. 1990	14.0	4.5	1.8	8.9	33.1	6.6
	ca. 2000	34.3	15.5	7.5	20.5	33.0	20.0
	ca. 2005	32.8	12.0	8.3	23.6	38.2	16.9
Uganda	ca. 1990	12.2	1.5	0.9	2.7	11.3	2.5
	ca. 2000	41.6	14.7	9.1	17.2	34.7	18.2
	ca. 2005	36.5	15.1	9.4	16.8	42.2	17.9
Zambia	ca. 1990	15.3	3.2	2.7	6.3	23.9	8.9
	ca. 2000	41.2	16.6	11.0	21.8	42.8	25.3
	ca. 2005	42.0	27.6	27.1	28.9	44.2	32.7
Zimbabwe	ca. 1990	48.7	30.8	24.9	34.0	52.1	36.1
	ca. 2000	61.8	43.9	35.2	44.4	59.3	50.4
	ca. 2005	68.3	53.4	30.3	52.0	65.2	58.4
Namibia	ca. 1990	46.6	13	14.2	17.3	46.4	26
	ca. 2000	63.8	43	27.4	31.9	55.1	53.4
	ca. 2005	53.4	33.7	31.5	44.6	62.6	42.6
Average for sub region	ca. 1990	23.1	9.2	7.1	11.3	27.4	12.6
	ca. 2000	38.6	20.2	13.6	21.7	38.5	24.7
	ca. 2005	39.2	22.8	15.8	27.3	44.9	26.6

Source: STATcompiler, <http://www.measuredhs.com>; calculated from data.

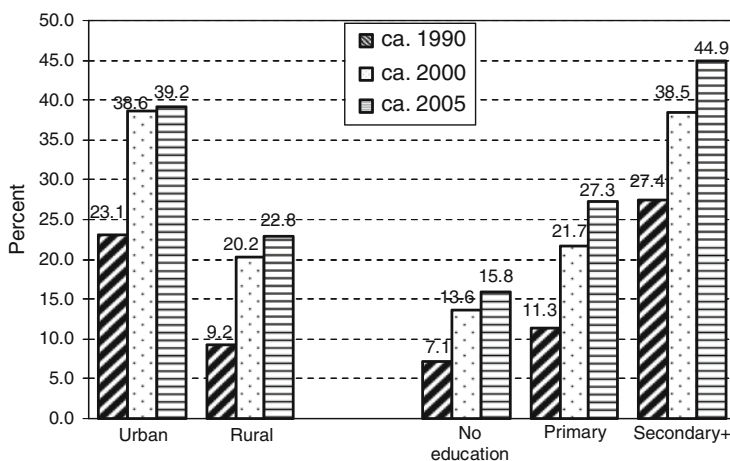


Fig. 2.6 Average use of any modern contraceptive method, eastern and southern Africa countries with at least three DHSs: ca. 1990–ca. 2005 (source: calculated from data)

2.3.3 Trends in Age at First Marriage

Marriage is key milestone to transition to adulthood. For demographic research age at first union is an important indicator of the close link between marriage and the onset of childbearing. For women in sub-Saharan Africa, marriage is universal and occurs at young ages. Early marriage⁶ has a major effect on childbearing because women who marry early have the potential for greater number of lifetime births. Marriage at young age and early motherhood are also associated with adverse reproductive health risks, such as higher maternal and child mortality, and labor complications during birth that may result in permanent injury. In addition, early marriage also contributes to curtailing educational and employment aspirations.

Table 2.3 presents median age at first marriage for women age 25–49. Overall, between ca. 1990 and ca. 2005, the median age at first marriage for women age 25–49 is going up with frequent gains of the order of .5 to 1.5 years (exceptions are Namibia and Rwanda). The median age at marriage in urban areas exceeds that in rural areas by an average of about 1 year. The largest increase was in urban Ethiopia, in the order of 2.5 years. The direct association of level of education with age at marriage is consistent, and frequently shows differences of 3–5 years in median age at marriage between women with no schooling and those with secondary or higher education.

In some countries in the sub region marriage still occurs relatively early: Ethiopia (16.1 years), Malawi (17.9), and Uganda (17.6). At the other extreme, Rwanda and

⁶Early marriage is defined as “any marriage carried out below the age of 18 years, before the girl is physically, physiologically, and psychologically ready to shoulder the responsibilities of marriage and childbearing” (UNICEF, 2005; IPPF, 2006).

Table 2.3 Median age at first marriage for women aged 25–49, eastern and southern Africa countries with at least three DHSs: ca. 1990–ca. 2005

		Residence		Education		
		National	Urban	No education	Primary	Secondary or higher
Ethiopia	ca. 1990	15.7	15.6	15.6	16.2	18.6
	ca. 2000	16.0	16.9	15.8	16.5	21.2
	ca. 2005	16.1	18.2	15.8	17.3	21.2
Kenya	ca. 1990	18.1	19.6	16.9	18.0	21.1
	ca. 2000	19.2	21.0	16.6	18.5	21.9
	ca. 2005	19.7	21.4	17.3	18.9	22.7
Madagascar	ca. 1990	18.2	20.4	16.6	17.7	21.7
	ca. 2000	18.5	20.2	16.3	18.0	21.5
	ca. 2005	19.1	20.2	17.2	18.7	21.3
Malawi	ca. 1990	17.8	18.3	17.6	17.8	21.3
	ca. 2000	17.8	18.4	17.5	17.7	21.2
	ca. 2005	17.9	18.5	17.3	17.8	21.5
Namibia	ca. 1990	–	–	22.6	24.7	–
	ca. 2000	–	–	23.7	–	–
	ca. 2005	–	–	23.7	–	–
Rwanda	ca. 1990	20.0	21.4	19.4	20.3	23.2
	ca. 2000	20.7	21.5	20.0	20.8	22.7
	ca. 2005	20.7	21.5	19.9	20.8	23.2
Tanzania	ca. 1990	17.9	18.3	16.7	18.7	23.0
	ca. 2000	18.1	18.8	16.7	18.6	23.2
	ca. 2005	18.6	19.4	17.5	18.6	23.6
Uganda	ca. 1990	17.0	18.6	16.6	17.1	20.9
	ca. 2000	17.8	18.7	17.1	17.5	20.7
	ca. 2005	17.6	18.8	17.1	17.3	20.6
Zambia	ca. 1990	17.4	17.5	16.7	16.9	19.9
	ca. 2000	17.8	18.3	16.8	17.4	20.2
	ca. 2005	18.2	19.1	17.3	17.5	20.9
Zimbabwe	ca. 1990	18.6	19.2	17.5	18.5	20.8
	ca. 2000	19.3	20.0	17.8	18.5	20.8
	ca. 2005	19.3	20.1	17.7	18.2	20.4
Average for sub region	ca. 1990	17.9	18.8	17.1	17.9	21.2
	ca. 2000	18.4	19.3	17.2	18.2	21.5
	ca. 2005	18.6	19.7	17.5	18.3	21.7

Source: STATcompiler, <http://www.measuredhs.com>; calculated from data.

– Less than 50% of women aged 25–49 were first married by age 25.

Namibia have a late marriage pattern of the order of above 21 years. To summarize, the data on trends in age at first marriage indicate that substantial proportions of women are still marrying very early – during their teenage years.

2.3.4 Decline in Under-Five Mortality

Reduction of the under-five mortality rate (U5MR) by two-thirds, from 93 children of every 1,000 dying before age five in 1990 to 31 of every 1,000 in 2015, equivalent to an annual average rate of reduction of 4.3%, is one of the six health-related Millennium Development Goals (MDGs). Sub-Saharan Africa is the region most affected by excess young child mortality and accounts for more than one-third of deaths of children under the age of five (Hill et al., 1999). About two-thirds of the child deaths in the developing world are caused by diseases (predominantly acute respiratory infections, diarrhea, and malaria) for which low-cost interventions, including immunization, oral rehydration therapy (ORT), and antibiotics exist (Jones et al., 2003).

Sub-Saharan Africa, with the highest young child mortality rates in the world, has seen an important decline between ca. 1990 and ca. 2005 (see Table 2.4). Around 1990, under-five mortality in Kenya, Namibia, and Zimbabwe was already much lower than most countries in the rest of eastern and southern Africa (e.g. Ethiopia and Malawi had registered under-five mortality above 200 per 1,000). In the 15 year span from ca. 1990 to ca. 2005, under-five mortality declined by 43% in Malawi, 41% in Ethiopia, 38% in Zambia, 34% in Madagascar, 28% in Uganda, 20% in Tanzania, and 17% in Namibia. On the other hand, the rate increased in three countries, namely Kenya, Rwanda, and Zimbabwe.

Table 2.4 Trends in Under-Five Mortality in eastern and southern Africa countries with at least three DHSs: ca.1990–ca. 2005

	ca. 1990	ca. 2000	ca. 2005	% change in U5MR (ca.1990–ca. 2005)	% change in U5MR per year
Ethiopia ^a	210.0	166.2	123.5	–41.2	–2.7
Kenya	89.8	111.5	114.6	27.6	2.0
Madagascar	195.0	170.0	129.5	–33.6	–2.9
Malawi	233.8	188.5	133.2	–43.0	–3.6
Rwanda	150.8	196.2	152.4	1.1	0.1
Tanzania	140.9	146.6	112.0	–20.5	–1.6
Uganda	177.0	151.5	127.6	–27.9	–2.3
Zambia	191.2	168.2	118.7	–37.9	–2.0
Zimbabwe	70.6	102.1	82.5	16.9	1.1
Namibia	83.9	62.2	69.4	–17.3	–1.0

Source: STATcompiler, <http://www.measuredhs.com>; calculated from data

^aUnder-five mortality for 1990 from UNICEF (http://www.unicef.org/infobycountry/ethiopia_statistics.html).

2.4 Reproductive Intentions (Desire to Have Additional Children)

Various studies in the demographic literature point that fertility desires are important predictors of fertility levels (Bankole, 1995; DaVanzo et al., 2003; Pritchett, 1994; Bongaarts, 1992). Dasgupta (1993) argues “it is parental demand for children rather than an unmet need for contraceptives that in large measure explains reproductive behavior in developing countries.” More recently, Bloom and Canning (2004) concluded that the high fertility rates in sub-Saharan Africa are a result of people wanting a large number of children, rather than high levels of unmet need.

Demographic studies that examined consistency and predictive ability of fertility preferences using two-wave longitudinal surveys spanning more than 10 years have

Table 2.5 Percentage of currently married women aged 15–49 who want no more children, by residence and parity, eastern and southern African countries with at least three DHSs: ca.1990–ca. 2005

		Residence		Parity			Total
		Urban	Rural	4	5	6 or more	
Ethiopia	ca. 1990	45.5	22.0	26.7	34.6	50.9	24.1
	ca. 2005	47.8	41.4	49.8	58.1	72.5	42.1
Kenya	ca. 1990	39.7	51.4	49.0	64.0	81.7	49.5
	ca. 2005	44.6	44.9	66.1	77.0	80.2	48.7
Malawi	ca. 1990	31.5	24.2	34.4	44.6	59.8	25.1
	ca. 2005	43.3	40.5	57.7	75.5	86.8	40.9
Madagascar	ca. 1990	52.7	38.1	51.9	58.2	78.8	40.7
	ca. 2005	43.8	40.5	58.5	60.9	77.9	41.2
Namibia	ca. 1990	46.5	26.0	39.0	40.5	46.3	33.9
	ca. 2005	62.4	57.9	74.7	81.1	84.3	60.1
Rwanda	ca. 1990	39.6	37.0	45.4	54.2	75.6	37.1
	ca. 2005	49.3	41.7	57.5	65.2	81.8	47.8
Tanzania	ca. 1990	27.5	22.0	25.2	35.0	59.7	23.2
	ca. 2005	27.5	29.1	47.0	54.4	63.8	28.7
Uganda	ca. 1990	20.9	19.3	17.9	24.7	55.2	19.4
	ca. 2005	38.7	41.2	43.7	55.1	78.2	41.1
Zambia	ca. 1990	27.3	21.3	24.3	33.8	61.9	24.2
	ca. 2005	42.6	32.5	41.7	57.6	76.5	36.0
Zimbabwe	ca. 1990	34.7	32.0	31.8	46.3	68.9	32.8
	ca. 2005	51.2	41.1	72.6	72.6	82.7	44.5
Average for sub region	ca. 1990	36.6	29.3	34.6	43.6	63.9	31.0
	ca. 2005	45.1	41.1	56.9	65.8	78.5	43.1

Source: Various DHS surveys; calculated from data.

reported that intentions can predict actual behavior (Weston and Qu, 2001; DaVanzo et al., 2003; Roy et al., 2008). On the other hand, some studies have also debated whether fertility intentions can actually translate into fertility behavior (Lesthaeghe and Surkyn, 1988; Miller and Pasta, 1995).

The question on reproductive intentions asked in the DHS is: “Would you like to have (a/another) child or would you prefer not to have any (more) children?” This question was asked only of currently married women. Table 2.5 presents levels and trends for each country in eastern and southern Africa. The overall proportion of currently married women who want no more children by residence, education and number of living children (parity) at two time periods (ca. 1990 and ca. 2005) is depicted in Fig. 2.7. For the sub region as a whole, the proportion of women who want no more children increases with parity and also over time. For instance, between ca. 1990 and ca. 2005, the proportion of women of parity 4 who want no more children increased by about 63% (from 35% in ca. 1990 to 57% in ca. 2005). By ca. 2005, a majority of women of parity 4 or higher indicated they want no more children.

The relationship between residence and reproductive intentions in the sub region indicates that a higher proportion of urban women are more likely to want no more children than rural women. However, as shown in Fig. 2.7, the gap between urban and rural women who want no more children has narrowed substantially over time.

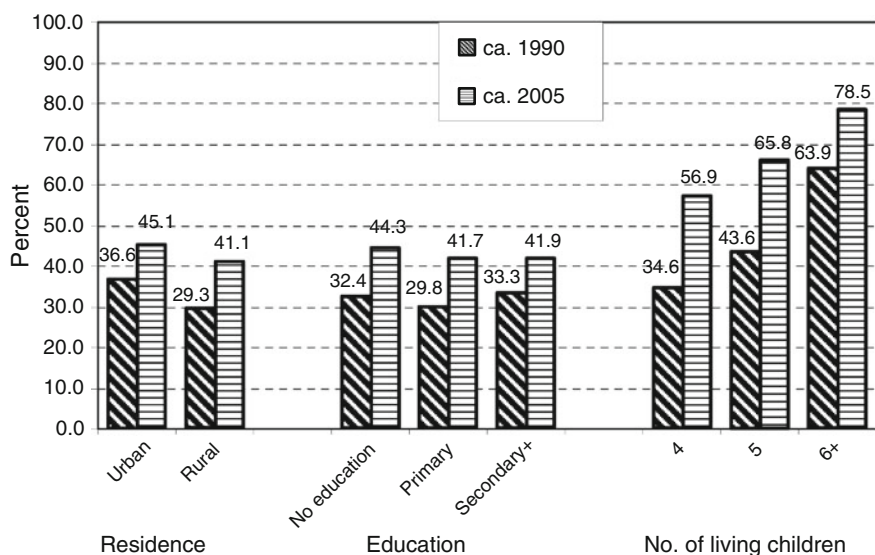


Fig. 2.7 Percentage of currently married women who want no more children, by residence, education, and parity, eastern and southern Africa countries with at least three DHSs: ca. 1990–ca. 2005 (source: calculated from data)

2.5 Summary and Discussion

This chapter provides a broad overview of the fertility transition in sub-Saharan Africa and reveals some interesting patterns. We have looked at differentials and made inferences about trends. Nearly all of the countries in sub-Saharan Africa have experienced the onset of fertility transition and in more than 60% of the countries (15 of the 24 countries with multiple DHS) in which transition has begun the most recent DHS surveys suggest that fertility decline is still under way. However, the pace of decline is slow in several of these countries. Stalling of fertility decline is evident in the remaining countries where fertility decline had begun, with some of the stalling countries being in mid-transition while others are still in an early stage of fertility transition. The stall occurred in both rural and urban areas. However, data from the latest DHSs from Ghana (Ghana DHS, 2008), Kenya (Kenya DHS, 2008/2009), and Tanzania (Tanzania AIS, 2007/2008) indicate that the stall (i.e. stagnation or backsliding in successive TFRs) is spurious as observed from declines in fertility in these countries.

Fertility differences by level of education and residence are large and in the expected direction, i.e. more educated and those living in urban areas have lower fertility. In summary, women with no schooling tend to have higher fertility in all countries in the region and women with secondary and higher level of education maintain lower level of fertility. Women in urban areas and capital cities enjoy very low fertility compared to women from rural areas.

In comparison to other countries in the sub region (ca. 2005) a remarkably low fertility rate is reported for urban women and those with secondary and higher level of education in Ethiopia. Looking at fertility levels in capital cities in eastern and southern Africa, Addis Ababa stands out as the only city with below replacement fertility after the 1990s.

Differences in contraceptive practice by residence show a clear tendency for increased use of modern contraception in urban areas between ca. 1990 and ca. 2005. By ca. 1990, urban areas in six of the ten countries in this analysis had a contraceptive prevalence less than 20%. Contraceptive prevalence surpassed above 30% in most urban areas of eastern and southern Africa by around 2005. On average, there was also a stagnation of contraceptive prevalence during the 5 year span between ca. 2000 and ca. 2005 in urban areas of eastern and southern Africa. Trends in current use by level of education are consistent with expectations. Overall, among women with secondary or higher education, current use has increased in all countries in the sub region. In a number of countries in the sub region, current use of modern methods remains extremely low among women with no education.

Overall, age at first marriage is increasing in most of the sub-Saharan Africa countries. The largest increase between ca. 1990 and ca. 2005 was in urban Ethiopia, in the order of around 2.5 years. The direct association of level of education with age at marriage is consistent, and frequently shows differences of 3–5 years in median age at marriage between women with no schooling and those with secondary or higher education. Despite the increasing trend, it is apparent from the analysis that

for most women marriages still occur at young ages, that is, during the teenage years.

The MDG #4 is to reduce under-five mortality rate by two-thirds, equivalent to an annual average rate of reduction of 4.3%. From ca. 1990 to ca. 2005, under-five mortality declined most rapidly by 43% in Malawi (a decline of 3.6% per year), 41% in Ethiopia (a decline of 2.7% per year), 38% in Zambia (a decline of 2.5%), 28% in Uganda, 20% in Tanzania, and 17% in Namibia. On the other hand, the rate increased in three countries, namely Kenya, Rwanda, and Zimbabwe. HIV/AIDS, low immunization coverage, malnutrition and inadequate health care systems are contributing factors to the high infant and child mortality in the sub region in particular and sub-Saharan Africa in general.

During the 15 year span (ca. 1990 to ca. 2005) the proportion of women who report they want no more children increased significantly. Overall, the urban/rural gap on intentions to have children has narrowed over time in the sub region.

2.6 Conclusions and Recommendations

Stalls in fertility decline and on contraceptive prevalence in sub-Saharan Africa have impacted the pace of fertility transition (UN, 2002; Ross et al., 2004; Bongaarts, 2006; Westoff and Cross, 2006; Cleland et al., 2006; Shapiro and Tesfayi, 2008; Ezeh et al., 2009). For instance, weakened family planning service environment was contributing to the stall in fertility decline in Kenya (Westoff and Cross, 2006; Askew et al., 2009; Ezeh et al., 2009). The overall level of modern contraceptive use is increasing since the 1990s in the sub region, though prevalence has not declined, the percentage increase decelerated between the two most recent surveys (ca. 2000 and ca. 2005) and is more-pronounced in urban areas.

The fertility inhibiting effect of age at marriage is significant (Bongaarts, 1992; Jolly and Gribble, 1993). A substantially high proportion of women marry at a young age (about 50% marry before reaching age 19) in the sub region. The trend analysis shows that increases in age at first marriage are quite small in most countries in the sub region (and Ethiopia in particular). Increasing the minimum age at marriage is not sufficient to improve the status of women. Policy makers and governments have to implement policies that enhance women's overall position, such as expanding education opportunities to increase their educational attainment, women's empowerment, and job opportunities.

Education is playing an increasingly important role in fertility reduction. Empirical evidence shows a negative relationship between fertility and education (Schultz, 1994; Rutstein, 2000; Shapiro et al., 2003; Shapiro and Tambashe, 2003). For instance, Schultz (1994) reported that an additional year of schooling is associated with a 12% reduction in total fertility and Klasen (1999) found that a 1 year increase in female education reduces the fertility rate by 0.25. A study by Cohen (1993) using DHS data from sub-Saharan Africa found that small amounts of

education make a little difference in a woman's fertility. Education beyond basic primary school is linked to lower fertility.

Despite encouraging trends in rapid infant and child mortality decline, achieving the MDG target of a 67% reduction from 1990 levels by the year 2015, especially in low income countries would be a challenge (WHO, 2010). WHO (2010) suggested that low-income countries would need to increase their annual average rate of decline from 1.9 to 10.9% in order to achieve the target.

Ethiopia's impressive decline of 3.2% (1990–2005) would have to be increased to 6.6% from 2005–2015 to achieve the goal (UNICEF, 2008).

The analysis showed that Ethiopia is unique in four major ways: well advanced fertility transition in urban areas where nearly 15–16% of the population lives, but incipient (early transition) fertility level in rural areas; significant increase in contraceptive use (e.g. recent surveys in large-scale program areas are showing CPR may have risen from 15% in 2005 to near 30% by early 2009; JSI, 2009); rapid infant and child mortality decline; and a substantial decline in desire to have additional child in rural areas.

Appendix

Table 2.6 Sub-Saharan Africa countries with at least three DHSs in the analysis

Countries by sub region	First DHS (ca. 1990)	Second DHS (ca. 2000)	Third DHS (ca. 2005)
<i>Eastern and southern Africa</i>			
Ethiopia	1990	2000	2005
Kenya	1989	1998	2003
Madagascar	1992	1997	2003/2004
Malawi	1992	2000	2004
Namibia	1992	2000	2006/2007
Rwanda	1992	2000	2005
Tanzania	1991/1992	1999	2004/2005
Uganda	1988/1989	2000/2001	2006
Zambia	1992	2001/2002	2007
Zimbabwe	1988	1999	2005/2006
<i>West and central Africa</i>			
Benin	1996	2001	2006
Burkina Faso	1993	1998/1999	2003
Cameroon	1991	1998	2004
Cote d'Ivoire	1994	1998/1999	2005
Ghana	1988	1998	2003
Guinea	1992	1999	2005
Mali	1987	2001	2006
Niger	1992	1998	2006
Senegal	1986	1999	2005

Table 2.7 Estimated total fertility rates, national and by rural and urban residence, and trend: countries with multiple surveys

Country (year of survey)	TFR			Trend
	National	Rural	Urban	
<i>Eastern and southern Africa</i>				
Eritrea (1995)	6.1	7.0	4.2	Mid-transition decline
Eritrea (2002)	4.8	5.7	3.5	
Ethiopia (1990) ^a	6.6	7.3	3.8	Early-transition decline
Ethiopia (2000)	5.5	6.0	3.0	
Ethiopia (2005)	5.4	6.0	2.4	
Kenya (1989)	6.7	7.1	4.5	Mid-transition decline
Kenya (1993)	5.4	5.8	3.4	
Kenya (1998)	4.7	5.2	3.1	
Kenya (2003)	4.9	5.4	3.3	
Kenya (2008/2009)	4.6	5.2	2.9	
Madagascar (1992)	6.2	6.7	3.8	Mid-transition decline
Madagascar (1998)	6.0	6.7	4.2	
Madagascar (2003/2004)	5.2	5.7	3.7	
Madagascar (2008/2009)	4.8	5.2	2.9	
Malawi (1992)	6.7	6.9	5.5	Early-transition decline
Malawi (2000)	6.3	6.7	4.5	
Malawi (2004)	6	6.4	4.2	
Mozambique (1997)	5.2	5.3	4.6	Early-transition stall
Mozambique (2003)	5.5	6.1	4.4	
Namibia (1992)	5.4	6.3	4.0	Mid-transition decline
Namibia (2000)	4.2	5.1	3.1	
Namibia (2006/2007)	3.6	4.3	2.8	
Rwanda (1992)	6.2	6.3	4.5	Early-transition stall
Rwanda (2000)	5.8	5.9	5.2	
Rwanda (2005)	6.1	6.3	4.9	
Tanzania (1992)	6.2	6.6	5.1	Early-transition decline
Tanzania (1996)	5.8	6.3	4.1	
Tanzania (1999)	5.6	6.5	3.2	
Tanzania (2004)	5.7	6.5	3.6	
Tanzania (2007/2008) ^b	5.6	6.4	3.4	
Uganda (1988)	7.4	7.6	5.7	Early-transition decline
Uganda (1995)	6.9	7.2	5.0	
Uganda (2000/2001)	6.9	7.4	4	
Uganda (2007)	6.7	7.1	4.4	
Zambia (1992)	6.5	7.1	5.8	Early-transition stall
Zambia (1996)	6.1	6.9	5.1	
Zambia (2001/2002)	5.9	6.9	4.3	
Zambia (2007)	6.2	7.5	4.3	
Zimbabwe (1988/1989)	5.4	6.2	3.8	Mid-transition decline
Zimbabwe (1994)	4.3	4.9	3.1	
Zimbabwe (1999)	4	4.6	3	
Zimbabwe (2005/2006)	3.8	4.6	2.6	

Table 2.7 (continued)

Country (year of survey)	TFR			Trend	
	National	Rural	Urban		
<i>West and central Africa</i>					
Benin (1996)	6.0	6.7	4.9	Early-transition stall	
Benin (2001)	5.6	6.4	4.4		
Benin (2006)	5.7	6.3	4.9		
Burkina Faso (1992/1993)	6.5	7	4.6	Early-transition decline	
Burkina Faso (1998/1999)	6.4	6.9	3.9		
Burkina Faso (2003)	5.9	6.5	3.4		
Cameroon (1991)	5.8	6.3	5.2	Mid-transition stall	
Cameroon (1998)	4.8	5.4	3.8		
Cameroon (2004)	5.0	6.1	4		
Chad (1996/1997)	6.4	6.5	5.9	Early-transition decline	
Chad (2004)	6.3	6.5	5.7		
Cote d'Ivoire (1994)	5.3	6	4.4	Mid-transition decline	
Cote d'Ivoire (1998/1999)	5.2	6	4		
Cote d'Ivoire (2005) ^c	4.6	5.5	3.6		
Ghana (1988)	6.4	7	5.3	Mid-transition decline	
Ghana (1993)	5.2	6.0	3.7		
Ghana (1998)	4.4	5.3	3.0		
Ghana (2003)	4.4	5.6	3.1		
Ghana (2008)	4.0	4.9	3.1		
Guinea (1992) ^d	5.7	5.9	5.2		Early-transition stall
Guinea (1999)	5.5	6.1	4.4		
Guinea (2005)	5.7	6.3	4.4		
Mali (1987)	7.1	7.4	6.3	Early-transition decline	
Mali (1995/1996)	6.7	7.3	5.4		
Mali (2001)	6.8	7.3	5.5		
Mali (2006)	6.6	7.2	5.4		
Niger (1992)	7.0	7.1	6.4	Pre-transition	
Niger (1998)	7.2	7.6	5.6		
Niger (2006)	7.0	7.3	6.1		
Nigeria (1990)	6	6.3	5	Early-transition stall	
Nigeria (2003)	5.7	6.1	4.9		
Nigeria (2008)	5.7	6.3	4.7		
Senegal (1986)	6.4	7.1	5.4		Early-transition decline
Senegal (1992/1993)	6	6.7	5.1		
Senegal (1997)	5.7	6.7	4.3		
Senegal (2005)	5.3	6.4	4.1	Early-transition decline	
Togo (1988)	6.4	7.3	4.9		
Togo (1998)	5.2	6.3	3.2		

Source: Except as noted, data are from ICF Macro's online STATcompiler, and provide TFRs based on the three years preceding each survey.

^aNational Family and Fertility Survey 1990.

^b2007–2008 Tanzania HIV/AIDS and Malaria Indicator Survey (THMIS).

^cEnquête sur les Indicateurs du Sida, Côte d'Ivoire 2005.

^dDHS Report.

References

- Agadjanian, V. and Prata, N. (2002). War, Peace, and Fertility in Angola. *Demography* 39: 215–231.
- Askew, I., Ezeh, A., Bongaarts, J., and Townsend, J. (2009). *Kenya's Fertility Transition: Trends, Determinants and Implications for Policy and Programmes*. Nairobi, Population Council.
- Bankole, A. (1995). Desired Fertility and Fertility Behaviour Among the Yoruba of Nigeria: A Study of Couple Preferences and Subsequent Fertility. *Population Studies* 49(2): 317–328.
- Becker, G. (1991). *A Treatise of the Family*, Enlarged ed. Cambridge, MA, Harvard University Press.
- Blanc, A. and Poukouta, P. (1997). Components of Unexpected Fertility Decline in Sub-Saharan Africa. Demographic and Health Surveys Analytical Reports No. 5 Calverton, Maryland: Macro International Inc.
- Bloom, D. and Canning, D. (2004). Population, Poverty Reduction and the ICPD Programme of Action. In *Proceedings of the Seminar on the Relevance of Population Aspects for the Achievement of the Millennium Development Goals*. November 17–19, 2004. New York, NY, pp. XXI-1–XXI-11.
- Bongaarts, J. (1992). Do Reproductive Intentions Matter? *International Family Planning Perspectives* 18(3): 102–108.
- Bongaarts, J. (2003). Completing the Fertility Transitions in Developing World: The Role of Educational Differences and Fertility Preferences. Working Paper No. 177. New York, NY: The Population Council.
- Bongaarts, J. (2006). The Causes of Stalling Fertility Transitions. *Studies in Family Planning* 37(1): 1–16.
- Bongaarts, J. (2008). Fertility Transitions in Developing Countries. Progress or Stagnation? *Studies in Family Planning* 39: 105–110.
- Caldwell, J.C. (1982). *Theory of Fertility Decline*. London, Academic Press.
- Caldwell, J.C., Orubuloye, I.O., and Caldwell, P. (1992). Fertility Decline in Africa: A New Type of Transition? *Population and Development Review* 18: 211–242.
- Casterline, J. (2001). Diffusion Processes and Fertility Transition. In Casterline, J. (ed.), *Diffusion Processes and Fertility Transition: Selected Perspectives*. Washington DC, National Academy Press, pp. 1–38.
- Central Statistical Authority (CSA). (1993). *The 1990 National Family and Fertility Survey*. Addis Ababa, Central Statistical Authority.
- Cleland, J., Bernstein, S., Ezeh, A., Faundes, A., Glasier, A., and Innis, J. (2006). Family Planning: The Unfinished Agenda. *Lancet* 368: 1810–1827.
- Coale, A.J. (1973). The Demographic Transition. In *Proceedings of the International Population Conference*, Liège, Belgium, p. 69.
- Cohen, B. (1993). Fertility Levels, Differentials, and Trends. In Foote, K.A., Hill, K.H., and Martin, L.G. (eds.), *Demographic Change in sub-Saharan Africa*. Washington, DC, National Research Council, National Academy Press.
- Cohen, B. (1998). The Emerging Fertility Transition in Sub-Saharan Africa. *World Development* 26(8): 1431–1461.
- DaVanzo, J., Peterson, C.E., and Jones, N. (2003). How Well Do Desired Fertility Measures for Wives and Husbands Predict Subsequent Fertility? Evidence from Malaysia. *Asia-Pacific Population Journal* 18(4): 5–24.
- Dasgupta, P. (1993). *An Inquiry into Well-Being and Destitution*. Oxford, UK, Oxford University Press.
- Dodoo, F.N. (1998). Men Matter: Additive and Interactive Gendered Preferences and Reproductive Behavior in Kenya. *Demography* 35(2): 229–242.
- Eloundou-Enyegue, P., Stokes, C.S., and Cornwell, G.T. (2000). Are there Crisis-Led Fertility Declines? Evidence from Central Cameroon. *Population Research and Policy Review* 19: 47–72.

- Ezeh, A.C. (1996) Reproductive Preferences and Behavior: How Men and Women Compare. *Planned Parenthood Challenges* 2: 15–19.
- Ezeh, A.C., Mberu, B.U., and Emina, J.O. (2009). Stall in Fertility Decline in Eastern African Countries: Regional Analysis of Patterns, Determinants and Implications. *Philosophical Transactions of the Royal Society B* 364: 2991–3007.
- Garenne, M. (2008). *Fertility Changes in Sub-Saharan Africa*. DHS Comparative Reports No. 18. Maryland: Macro International.
- Garenne, M. and Joseph, V. (2002). The Timing of the Fertility Transition in Sub-Saharan Africa. *World Development* 30(10): 1835–1843.
- Greene, M.E. and Biddlecom, A.E. (2000). Absent and Problematic Men: Demographic Accounts of Male Reproductive Roles. *Population and Development Review* 26(1): 81–115.
- Harwood-Lejeune, A.L. (2001). Rising Age at Marriage and Fertility in Southern and Eastern Africa. *European Journal of Population* 17: 261–280.
- Hill, K., Pande, R., Mahy, M., and Jones, G. (1999). *Trends in Child Mortality in the Developing World: 1960–1996*. New York, NY, UNICEF.
- Hinde, P.A. and Mturi, A.J. (2000). Recent Trends in Tanzania Fertility. *Population Studies* 54: 177–191.
- Hindin, J.M. (2000). Women's Autonomy, Women's Status and Fertility-Related Behavior in Zimbabwe. *Population Research and Policy Review* 19: 255–282.
- IPPF. (2006). *In Ending Child Marriage, A Guide for Global Policy Action*. International Planned Parenthood Federation (IPPF) and the Forum on Marriage and the Rights of Women and Girls, London, UK.
- JSI/The Last Ten Kilometers. (2009). *Baseline Household Survey, Amhara, Oromiya, SNNP and Tigray*. Addis Ababa, Ethiopia, JSI Research & Training, Inc., August.
- Jejeebhoy, S.J. (1995). *Women's Education, Autonomy and Reproductive Behaviour: Experience from Developing Countries*. New York, NY, Oxford University Press.
- Jejeebhoy, S.J. (1996). *Women's Education, Autonomy and Reproductive Behavior: Assessing What We Have Learned*. Honolulu, HI, East West Center.
- Jolly, C. and Gribble, J. (1993). The Proximate Determinants of Fertility. In Foote, K.A., Hill, K.H., and Martin, L.G. (eds.), *Demographic Change in Sub-Saharan Africa*. Washington, DC, National Research Council, National Academy Press.
- Jones, G., Steketee, R., Black, R., Bhutta, Z., and Morris, S. (2003). The Bellagio Child Survival Study Group. How Many Child Deaths Can We Prevent This Year? *Lancet* 362: 65–71.
- Kirk, D. and Pillet, B. (1998). Fertility Levels, Trends and Differentials in Sub-Saharan Africa in the 1980s and 1990s. *Studies in Family Planning* 29(1): 1–22.
- Klasen, S. (1999). Does Gender Inequality Reduce Growth and Development? Evidence from Cross-Country Regressions. *Policy Research Report on Gender and Development*, The World Bank, Working Paper Series No. 7.
- Knodel, J.E. (1974). *The Decline of Fertility in Germany, 1871–1939*. Princeton, NJ, Princeton University Press.
- Lesthaeghe, R. and Surkyn, J. (1988). Cultural Dynamics and Economic Theories of Fertility Change. *Population and Development Review* 14(1): 1–45.
- Lindstrom, D.P. and Betemariam Berhanu. (1999). The Impact of War, Famine, and Economic Decline on Marital Fertility in Ethiopia. *Demography* 36: 247–261.
- Locoh, T. (1994). Will the Decline in Fertility in Sub-Saharan Africa Last? A Time of Uncertainty. In Locoh, T., and V. Hertrich (eds.). *The Onset of Fertility Transition in Sub-Saharan Africa*. Liege, Belgium, IUSSP.
- McDonald, P. (2000). Gender Equity in Theories of Fertility Transition. *Population and Development Review* 26(30): 427–439.
- Miller, W.B. and Pasta, D.J. (1995). How Does Childbearing Affect Fertility Motivations and Desires? *Social Biology* 42(3/4): 185–198.
- Njogu, W. and Martin, T.C. (1991). Fertility decline in Kenya: The role of training and spacing of births, in IRD/Macro International, Inc. 1991, *Proceedings of the Demographic and Health Surveys World Conference Vol. III*. Washington, D.C. 1991, Columbia, Maryland.

- Odhiambo, O. (1997). Men's Participation in Family Planning Decision in Kenya. *Population Studies* 51(1): 29–40.
- Pollak, R.A. and Watkins, S.C. (1993). Cultural and Economic Approaches to Fertility: Proper Marriage or Mésalliance? *Population and Development Review* 19(3): 467–496.
- Pritchett, L. (1994). Desired Fertility and the Impact of Population Policies. *Population and Development Review* 20(1): 1–55.
- Reed, H., Briere, R., and Casterline, J. (eds.). (1999). The Role of Diffusion Processes in Fertility Change in Developing Countries: Report of a Workshop. Committee on Population, National Research Council. Washington, DC: National Academy Press.
- Ross, J., Abel, E., and Abel, K. (2004). Plateaus During the Rise of Contraceptive Prevalence. *International Family Planning Perspectives* 30(1): 39–44.
- Ross, J.A. and Frankenberg, E. (1993). *Findings from Two Decades of Family Planning Research*. New York, NY, Population Council.
- Roy, T.K., Sinha, R.K., Koenig, M., Mohanty, S.K., and Patel, S.K. (2008). Consistency and Predictive Ability of Fertility Preference Indicators: Longitudinal Evidence from Rural India. *International Family Planning Perspectives* 34(3): 138–145.
- Rutstein, S.O. (2000). Factors Associated with Trends in Infant and Child Mortality in Developing Countries During the 1990s. *Bulletin of the World Health Organization* 78: 1256–1270.
- Schultz, T.P. (1993). Returns to Women's Schooling. In *Women's Education in Developing Countries: Barriers, Benefits, and Policy*. Baltimore, MD, Johns Hopkins University Press.
- Schultz, T.P. (1994). Human Capital, Family Planning, and Their Effects on Population Growth. *American Economic Review*. 84(2): 255–260.
- Shapiro, D. and Tambashe, B.O. (2002). Fertility Transition in Urban and Rural Sub-Saharan Africa: Preliminary Evidence of a Three-Stage Process. *Journal of African Policy Studies* 8(2&3): 103–127.
- Shapiro, D. and Tambashe, B.O. (2003). *Kinshasa in Transition: Women's Education, Employment, and Fertility*. Chicago, University of Chicago Press.
- Shapiro, D. and Tesfayi Gebreselassie. (2008). Fertility Transition in Sub-Saharan Africa: Falling and Stalling. *African Population Studies* 23(1): 3–23.
- Shapiro, D., Tesfayi Gebreselassie, and Strunk, L. (2003). Fertility Transition in Sub-Saharan Africa: Evidence from the Demographic and Health Surveys. Paper Presented at the Annual Meeting of the Population Association of America, Minneapolis, May.
- Sneeringer, S.E. (2009). *Fertility Transition in Sub-Saharan Africa: A Comparative Analysis of Cohort Trends in 30 Countries*. DHS Comparative Reports No. 23. Calverton, MD: ICF Macro.
- Tabutin, D. and Schoumaker, B. (2001). Une analyse régionale des transitions de fécondité en Afrique sub-Saharienne. Paper presented at the General Congress of the International Union for the Scientific Study of Population, Salvador, Brazil.
- Tabutin, D. and Schoumaker, B. (2004). The Demography of Sub-Saharan Africa from the 1950s to the 2000s. A Survey of Changes and a Statistical Assessment. *Population-E* 59(3/4): 455–555.
- Tesfayi Gebreselassie. (2007). *Spousal Agreement on Reproductive Preferences in Sub-Saharan Africa*. Calverton, MD, Macro International Inc.
- UN/ECA. (2002). The State of Demographic Transition in Africa. Economic Commission for Africa. ECA/FSSDD/01/10, Addis Ababa, Ethiopia. Available online: http://www.uneca.org/publications/FSSDD/State_of_Demographic_Transition_in_Africa.PDF
- UNICEF. (2005). *Early Marriage: A Harmful Traditional Practice*. A Statistical Exploration. The United Nations Children's Fund (UNICEF), New York, NY.
- UNICEF. (2008). Tracking Progress in Maternal, Newborn and Child Survival. Retrieved from www.countdown2015mnch.org
- United Nations. (2001). *United Nations Prospects: The 2000 Revision*, Department for Economic and Social Information and Policy Analysis, Population Division. New York, NY, United Nations.
- United Nations. (2002). Fertility Levels and Trends in Countries with Intermediate Levels of Fertility. In *Completing the Fertility Transition*, Report of the Expert Group Meeting on Completing the Fertility Transition, Department of Economic and Social Affairs,

- Population Division. ESA/P/WP.172/Rev.1. New York, NY: United Nations. Retrieved from <http://www.un.org/esa/population/publications/completingfertility/completingfertility.htm>
- Westoff, C.F. (1992). *Age at Marriage, Age at First Birth, and Fertility in Africa*. World Bank Technical Paper. Washington, DC.
- Westoff, C.F. and Cross, A.R. (2006). *The Stall in the Fertility Transition in Kenya*. Calverton, MD, Macro International Inc.
- Weston, R. and Qu, L. (2001). Changing Patterns of Relationship Formation: Implications for fertility. Paper Presented at the Australia-New Zealand Population Workshop, Canberra, 28–30 November.
- World Health Organization. (2010). World Health Statistics 2010. Geneva, WHO. Retrieved from http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf

Chapter 3

The Nature, Pace and Determinants of the Incipient Fertility Transition in Ethiopia, 1984–2007: Can the 4.0 TFR Target for 2015 be Met?

Charles Teller, Assefa Hailemariam, and Tesfayi Gebreselassie

Abstract We document the trends and nature of an incipient demographic transition since the first Ethiopian national census in 1984, and attempt to predict the acceleration of rural fertility transition in order to meet the 2015 national population target in the total fertility rate (TFR) of 4.0 by 2015. The most reliable and comprehensive national data sources are used for both primary and secondary analysis: the fertility level and related determinants from the major national demographic surveys of 1990, 2000 and 2005. There have been marked declines in under-five mortality and urban fertility since 1990, but the rural-urban fertility gap has widened to nearly 4 children. However, we expect the lagging rural fertility decline to begin to accelerate, due to a combination of both demand and supply factors: perceived greater survival of children and reduced desire for additional children; later age at first marriage, increased girl's secondary education, rising youth aspirations and increasing access to maternal health and family planning services. These social development factors are also being mediated in the rural context by population pressure on the land and environment, increased labor mobility and food insecurity, along with the rising cost of raising children. These factors, along with socio-cultural change, should serve as a depressant to early family formation and the initiation and timing of childbearing. Thus, the national target of reducing TFR to 4.0 by the year 2015 is within reach if greater priority and commitment are given to meeting youth life course aspirations and to improving the use and the quality of maternal health and family planning services and appropriate education.

Keywords Fertility transition · Under-five mortality · Demographic targets · Population pressure · Marriage

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3.1 Introduction

This chapter documents the pace and nature of the fertility transition in Ethiopia, in relation to the earlier mortality decline, reproductive and family planning, and socio-economic and geographic factors. Actually, the transition is well advanced in urban areas, but was delayed until very recently in rural areas, thus widening a large rural-urban gap.

Ethiopia is the second largest country in sub-Saharan Africa at around 80 million (CSA, 2010; UN, 2010), and where population growth rate is still around 2.6%. Ethiopian population is significantly youthful: 45% are under 15 years of age, while only 3.1% are above age 65, resulting in a high dependency ratio. With 84% of the population living in rural areas, the main concern at the turn of the century had been the lack of strong entry into the demographic transition, given the background of drought and food insecurity, poverty, disease, war and instability. The economy of the country is heavily dependent on agriculture. Despite increasing trend in the recent past, the industrial sector is at infancy and contributes only insignificantly to the national economy. The livelihood of a significant percentage of the country's population depends on agriculture. The agricultural sector, however, is rain-fed. Thus, the agricultural yield is prone to variation in climatic condition (unreliability and seasonality of rainfall). Consequently, millions of the people are vulnerable to drought risk and are forced to depend on relief. Besides, the rural per capital land holding is decreasing to the extent that it is more difficult to sustain rural livelihoods.

The slow socio-economic development, coupled with such youthful population, challenges future development of the country in benefiting from its demographic bonus. Although some argue that Ethiopia is at the brink of fertility transition with demographic bonus in sight (Teller et al. 2007) others allege that population growth continues to contribute negatively to the development trajectory of the country and demographic transition is not yet in sight.

3.1.1 Data and Methods

The data for this analysis come from three nationally representative demographic and health surveys conducted in 1990, 2000, and 2005, and results from two censuses. The 1990 National Family and Fertility Survey (NFFS) was conducted by the Central Statistical Authority (CSA, 1993). The NFFS primarily targeted women age 15–49. The questionnaires used in NFFS survey were similar to the standardized Demographic and Health Survey (DHS) questionnaires. Due to security and other reasons, the NFFS excluded from its coverage Eritrea, Tigray, Asseb, and Ogaden autonomous regions. In addition, fieldwork could not be carried out for Northern Gondar, Southern Gondar, Northern Wello, and Southern Wello due to security reasons. The 2000 and 2005 Ethiopia DHS surveys (EDHS) are nationally representative population and health surveys conducted in Ethiopia as part of the worldwide Demographic and Health Surveys project.

The NFFS survey covered 8,757 eligible women aged 15–49. Similarly, the 2000 and 2005 DHS surveys interviewed 15,367 and 14,070 women age 15–49, respectively. Details on the survey procedures and sampling design are available in the individual survey reports (CSA, 1993; CSA and ORC Macro, 2001; 2006). Background characteristics of women aged 15–49 in the three national surveys can be found in Appendix (see Table 3.8).

In our analysis since we pool the three surveys, we restrict our choice of proxies of wealth or indicators of well being to only those which are available in all the three rounds of data. We use the statistical method of principal components to construct a wealth index. The indicators that we use to construct the index are the following, viz. whether household owns a radio, a television, if household has electricity, type of flooring of the house, toilet facility, and drinking water facility, number of members per room in the household, ownership of pack animals, cattle, and sheep and goats.

For multivariate analyses, we use binary logistic regression to analyze the determinants of modern contraceptive use among currently married women and Poisson regression to analyze the determinants of children ever born among married women age 20–49. The Cox proportional hazards model is used to assess the relative effect of the variables hypothesized to influence under-five mortality.

3.2 Population Size, Growth, and Distribution

3.2.1 Population Size and Growth

Absence of accurate time series data on population limits the estimation of past growth rate of the population. Although figures on the size of the Ethiopian population started appearing as early as mid-nineteenth century, Assefa noted that these were based on guesses made by travellers and visitors (Assefa, 1990). Moreover, these figures did not include the most densely populated southern and southwestern regions. Consequently, until about mid 1960s, no population data existed for the whole country. In 1964/1965 the first national sample survey was conducted by the then Central Statistical Office (now CSA) and since then various sample surveys were undertaken that provided estimates of population data for the country. However, these data had their own limitations and they permit only a crude approximation of the actual size of the Ethiopian population. The population data are estimates obtained on the basis of the reconstruction made by the CSA using the 1984 Census data (Assefa, 1990).

The rate of population growth increased from about 2.2% in the 1960s to a peak of 3% in the late 1980s and early 1990s. The death rate has been declining steadily since 1960, but the birth rate had increased to a peak in 1990, but since then has been declining (Fig. 3.1).

Although the growth rate appears to have peaked at 3.3% in the 1990–1995 period, the speed of the decline is projected to be gradual, and even until 2015–2020 the rate of growth is unlikely to be any lower than 2.3% per year (UN,

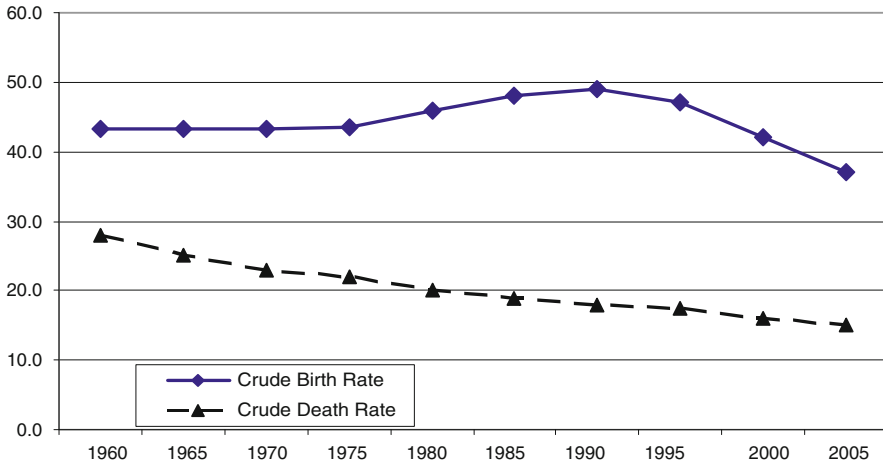


Fig. 3.1 Crude birth rate (CBR) and crude death rate (CDR): 1960–2005 (sources: Assefa, 1990; CSA, 1991, 1999)

2010). The youthful age structure generated by high fertility levels guarantees a continuing future rapid population growth. The apparent upward trend is a phenomenon observed in many developing countries before they began their fertility transition and is associated with decline in the level of primary and secondary sterility due to the treatment of STD, in particular, gonorrhea and the reduction in the incidence of widowhood (Assefa, 1990).

3.2.2 Trends in Fertility

3.2.2.1 Fertility Decline

The main feature of fertility in Ethiopia is that it has been at its highest levels at the end of the twentieth century, and that the rural-urban differentials are the highest in Africa (see Chapter 2). It increased between the 1970s and early 1990s from about 5.2 children per woman in 1970 to 6.6 in 1990. Since then, however, it has begun to decline, mostly in urban areas (Fig. 3.2). The three-year rate preceding the survey declined from 6.6 children per woman in 1990 (not including rural Tigray) to 5.5 children per woman in 2000. According to the 2005 EDHS, total fertility was 5.4 children per woman in 2005. This shows that in this fifteen-year period, since 1990, TFR declined by only one child per woman, and stagnated between the last two DHS surveys (2000 and 2005).

Urban fertility has been much lower than rural fertility, and since 1990, it has been declining sharply. As Fig. 3.2 shows, the gap in urban and rural fertility has been increasing since 1994.

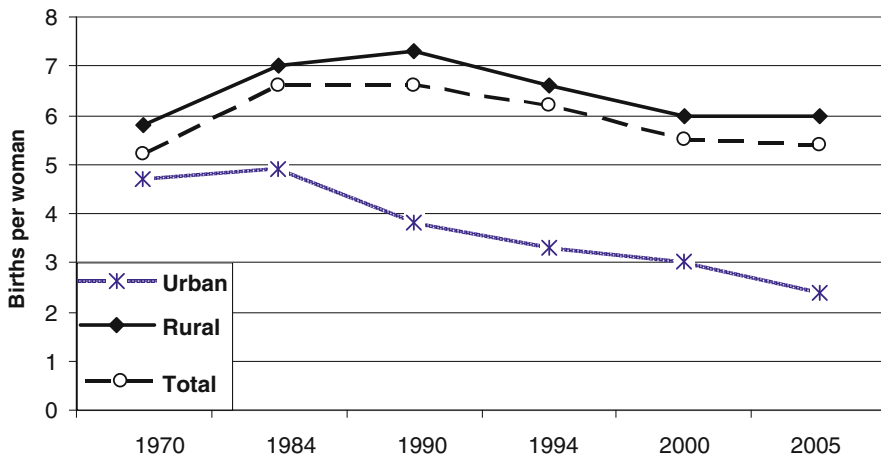


Fig. 3.2 Total fertility by residence: 1970–2005 (sources: CSA, 1991, 1999; CSA and ORC Macro, 2001, 2006)

Figure 3.3 presents the age specific fertility rates since 1990. The figure shows a clear decline in fertility between 1990 and 2000 for those under age 30. By contrast, the age-specific fertility rates between 2000 and 2005 were quite similar. The figure demonstrates that the population is characterized by a broadly peaked age pattern of fertility that falls slowly with advancing age. This is a characteristic of populations where there is little parity specific fertility control. Assefa and Teller (2006) noted

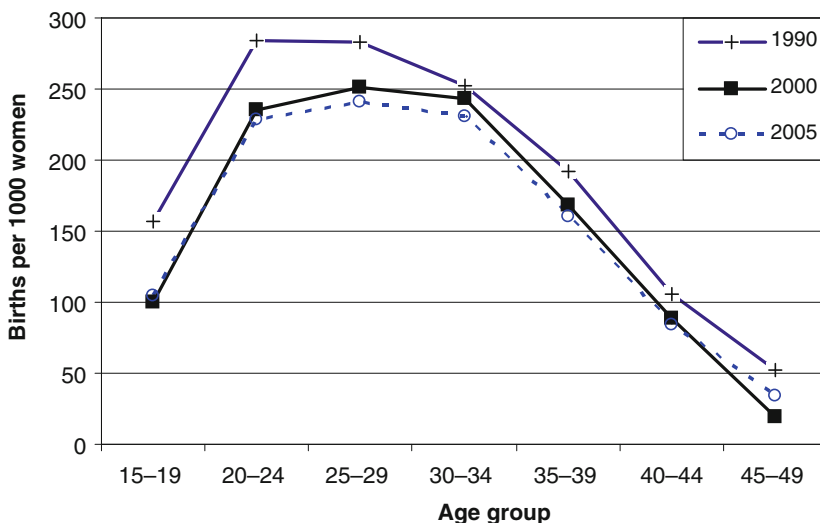


Fig. 3.3 Age specific fertility rates for the 3 years preceding the survey, 1990–2005 (source: CSA, 1991; CSA and ORC Macro, 2001, 2006; calculated from data)

that fertility had peaked in the early 1990s with higher age specific fertility rates during the late 1980s.

3.2.2.2 Differentials and Trends in Total Fertility and Contraceptive Prevalence

Looking at differentials in the trends, one sees that both rural and urban total fertility rates (TFR) declines in the 1990–2000 period are at 22–27%, but between 2000–2005, while urban fertility continued to decline (25%), rural fertility did not (Table 3.1). Similarly, in this later period, while those with secondary education and above continued to decline at an ever faster pace (60%), fertility in the less educated stagnated.

The trends in modern contraceptive use among currently married, non-pregnant women 15–49 continued to increase in both periods. In fact, the greatest increase in the latter period was among those currently married women from rural areas (69%) and those with no schooling (62%).

Urban fertility has been declining since 1990, suggesting an earlier start of fertility transition in urban Ethiopia, while rural fertility has been lagging behind. Early and universal marriage, the high social and economic value attached to children, the low level of infertility, the lack of female empowerment and the extremely low contraceptive prevalence, among others, may explain the high reproductive performance in the population. The recent decline may be due to an increase in the age at first marriage, decline in the proportion of married women and increasing use of modern contraception.

Table 3.1 Trends in TFR (for the 3 years preceding the survey) and modern contraceptive use, by residence: 1990–2005

Indicator	1990	2000	% change 1990–2000	2005	% change 2000–2005
<i>TFR</i>					
Rural	7.3	6.0	–22%	6.0	0%
Urban	3.8	3.0	–27%	2.4	–25%
No education	7.1	5.9	–20%	6.1	3%
Primary	4.9	4.7	–4%	5.1	8%
Secondary	2.7	3.2	16%	2.0	–60%
<i>Contraceptive prevalence</i>					
Rural	1.2	3.3	64%	10.6	69%
Urban	15.5	28.3	45%	42.2	33%
No education	1.1	3.7	70%	9.8	62%
Primary	8.3	13.2	37%	21.9	40%
Secondary	30.3	33.0	8%	45.9	28%

Sources: Calculated from data.

Use of any contraception increased from 5% in 1990 to 8% in 2000 and to about 15% in 2005 (CSA and ORC Macro, 2006). However, method mix has not improved. There is a heavy reliance on temporary methods only. Less than 1% of women were on permanent or long term methods and the majority of the users were on temporary methods (CSA and ORC Macro, 2006).

3.2.2.3 Age at First Marriage

The median age at first marriage increased slowly over the last two decades from 15.7 years for women age 45–49 to 17.2 years for women age 25–29 and 18.1 years for the younger cohorts (age 20–24). The proportion of women who married before age 15 has also considerably decreased during the last two decades. More than a third (38%) of ever married women aged 45–49 were married by age 15. This declined to less than one-quarter among the younger cohort (20–24) and 13% to the 15–19 age cohort. Around 71% of those aged 45–49 were married by age 18 but this declined to 38% among the youngest cohort. There is an inverse relationship between age at first marriage and fertility in populations where little or no fertility control is practiced and childbearing outside wedlock is uncommon. The earlier marriage takes place, the higher the fertility and vice versa.

A comparison of the 2000 and 2005 DHS data shows this rising age of marriage by age-group cohorts (Fig. 3.4). Women in their 30's and above had married at

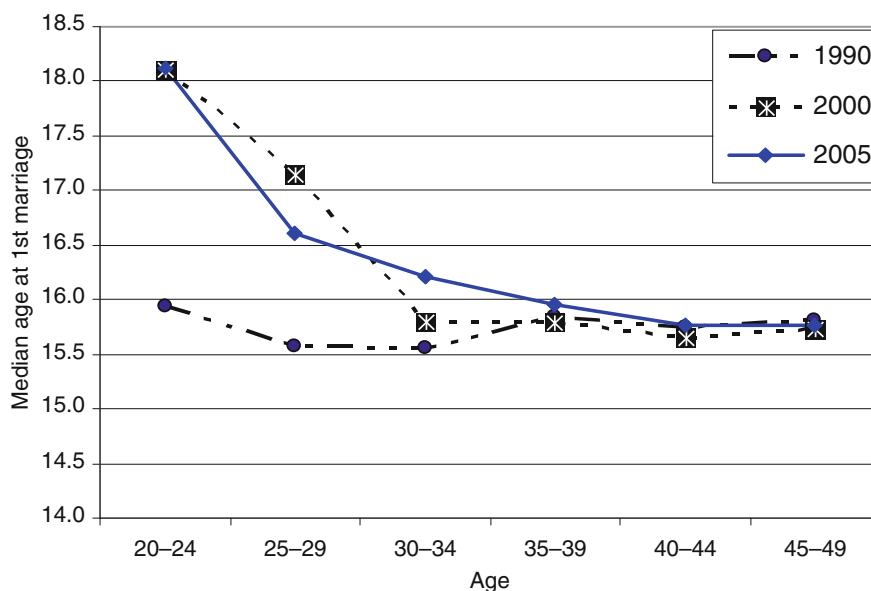


Fig. 3.4 Age-cohort specific trends in median age at first marriage: 1990, 2000 and 2005 (sources: Calculated from data)

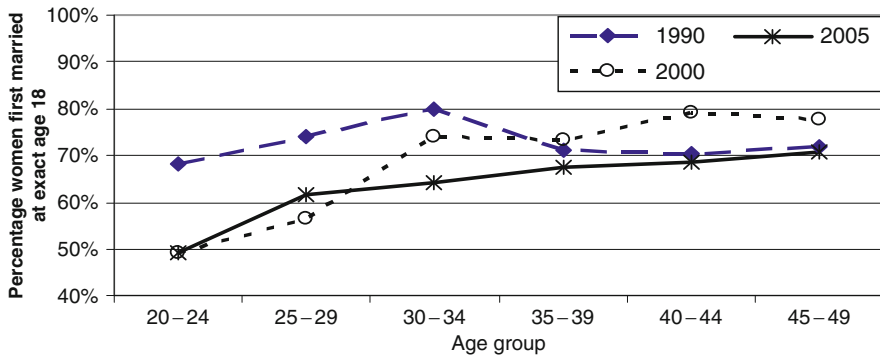


Fig. 3.5 Percentage women married at exact age 18 by current age group: 1990–2005 (sources: Calculated from data)

slightly older ages than the age cohort 5-years older. The only blip is the drop in women age 25–29 who may have married earlier than their older cohorts, possibly due to the soldiers return home after the end of the Derg War in the early 1990s.

The proportion of women of reproductive age in marriage declined from 72.0% in 1990 to 63.7% in 2000 with little change by 2005 (64.4%). The biggest change is seen in women aged 30–34 and below; in fact, the youngest age cohort (20–24), saw a decline from nearly 70% married by age 18 to only 50%. Increasing female education and the rise in the legal age of marriage law in the recent past are likely to have contributed for this change in pattern of marriage in Ethiopia (see Fig. 3.5).

3.2.3 Infant and Child Mortality

Mortality levels declined in the population during the last two decades, with the greatest decline in the most recent period 2000–2005 (Fig. 3.6). Infant and child mortality rate reveal a pattern of mortality decline. Infant mortality rate had declined from 153 deaths per 1000 live births in 1970 to 110 in 1984 (CSA, 1991) and further declined to 106 in 1990 (CSA, 1993). In 2000, it was 97 per 1000 and in 2005, declined to 77 (CSA and ORC Macro, 2001 and 2006).

Estimates of HIV prevalence in Ethiopia from UNAIDS (UN & WHO, 2007) show that about 1.4% of the adult population 15–49 is infected, down from a high of 2.5% in 1997. HIV/AIDS has had some impact on the level of mortality in Ethiopia. Nevertheless, it is very unlikely that it will overcome the momentum of population growth. However, AIDS will not stop population growth or lead it to negative growth rate as many people think. This is because the current growth rate is high, contraceptive prevalence is low and HIV/AIDS prevalence has declined and has likely stabilized.

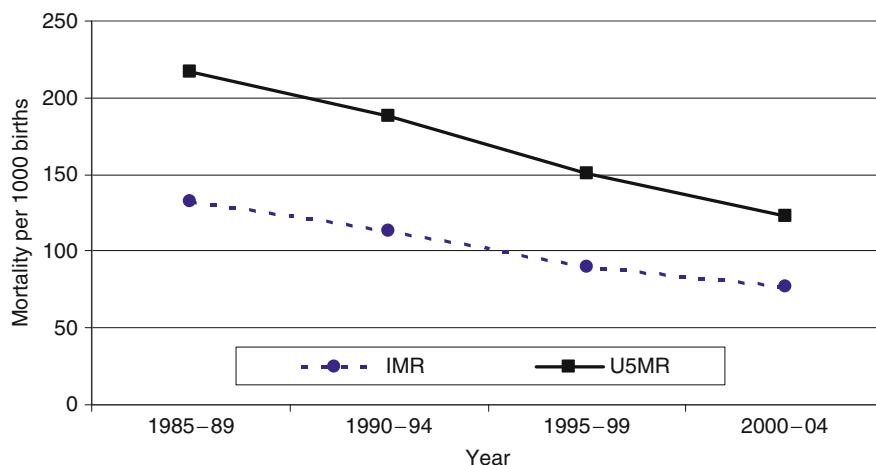


Fig. 3.6 Infant (IMR) and under-five mortality (U5MR), 1985–2004 (sources: CSA (1991, 1993); CSA and ORC Macro, 2001, 2006)

To sum up, from what has been presented so far, there is convincing evidence that fertility, the driving force behind population growth, is now following the previous mortality decline, and has begun its downward trend, particularly in urban areas. However, a key determinant of the speed at which it will continue falling is the extent to which couples use or fail to use contraception to control the number and spacing of their children. It is expected that the high level of unmet need (33.8%) will decline, as more than half of currently married women who were not using any family planning method at the time of the survey say they intend to use a method in the future (CSA and ORC Macro, 2006).

3.3 Bivariate and Multivariate Analysis of Fertility Behavior, Contraceptive Use, and Under-five Mortality

3.3.1 Determinants of Fertility Behavior

Children-ever-born (CEB) is most closely related to the number of children that a woman has had when she is done having children, and is a self-reported measure of completed fertility for those women surveyed.

Table 3.2 presents mean number of children ever born by socio-economic and demographic characteristics of ever-married women age 20–49 for the three surveys separately. Results show in Table 3.2 indicate that the rural CEB has not declined much, while CEB in Addis Ababa and other urban areas have declined substantially,

Table 3.2 Mean children ever born by demographic and socio-economic characteristics of ever-married women – 1990, 2000 and 2005

	1990 (mean)	2000 (mean)	1990–2000 (difference)	2005 (mean)	2000–2005 (Difference)
<i>Residence</i>					
Addis Ababa	3.84	3.06	–0.78	2.80	–0.26
Other urban	4.36	3.46	–0.91	3.23	–0.23
Rural	4.72	4.62	–0.10	4.71	0.09
<i>Woman's education</i>					
No education	4.84	4.71	–0.13	4.81	0.10
Primary	3.25	3.36	0.11	3.79	0.43
Secondary ⁺	2.88	2.47	–0.41	2.41	–0.06
<i>Partner's education</i>					
No education	4.88	4.85	–0.03	4.92	0.07
Primary	4.07	3.93	–0.14	4.13	0.20
Secondary+	3.48	3.04	–0.44	3.26	0.22
<i>Wealth status (wealth quintiles)</i>					
Poor	4.77	4.59	–0.18	4.68	0.09
Middle	4.55	4.78	0.24	4.58	–0.21
Rich	4.46	3.99	–0.47	4.11	0.12
<i>Religion</i>					
Ethiopian Orthodox Christians	4.56	4.37	–0.19	4.27	–0.10
Other Christians	4.79	4.31	–0.48	4.62	0.83
Muslims	4.75	4.59	–0.16	4.75	0.16
Traditional	4.74	4.59	–0.15	4.67	0.08
<i>Media: listen to radio</i>					
No	4.69	4.60	–0.08	4.71	0.11
Yes	4.43	3.96	–0.47	4.14	0.17
<i>Work status</i>					
Not working	4.75	4.38	–0.37	4.57	0.19
Working	4.6	4.47	–0.13	4.3	–0.17
<i>Current age</i>					
20–24	2.01	1.63	–0.38	1.64	0.01
25–29	3.44	2.92	–0.52	3.15	0.23
30–34	4.91	4.69	–0.22	4.63	–0.06
35–39	5.87	5.72	–0.15	5.88	0.16
40–44	6.65	6.77	0.12	6.67	–0.10
45–49	6.94	7.23	0.29	7.27	0.04
<i>Total mean CEB</i>	4.65	4.43	–0.22	4.49	0.06
N	6,285	10,376		9,372	

Sources: Calculated from data.

with the biggest declines (of 0.78 and 0.91, respectively) in the 1990–2000 period. Other large declines in the 10 years span are seen among women with secondary or higher education and women age 25–29. Increases in CEB in the later period (2000–2005) are observed among less educated women and partners, other Christians (Evangelicals and Catholics), higher wealth status, and women who are not working.

3.3.2 *Multivariate Analysis of Children Ever Born*

The dependent variable in this analysis is number of children ever born to a woman (CEB). Because children ever born is non-negative count variable we use standard Poisson regression for the multivariate analysis. We report the incidence (risk) ratios (e^b) for meaningful interpretation. For categorical variable, a risk ratio significantly greater than one indicates that women with this attribute have higher fertility than those in the reference category. The reverse holds if the risk ratio is significantly less than one. Table 3.3 reports incidence ratios of estimated Poisson regressions. The first three columns refer to results for each survey separately and column four presents results for the pooled (combined) data. The survey specific regression models (equations) control for current age, residence, education level of the woman and her partner, work status of the woman, religion, media exposure, number of living children, and wealth status of the household. In column four (for the combined data), the model includes survey year indicator variable (dummies) and residence and survey year interaction term.

Place of residence significantly influence fertility. Relative to those living in Addis Ababa, other urban and rural residents have significantly higher fertility. The Addis-rural gap has grown larger over time, and by 2005 rural fertility was almost 40% higher than Addis Ababa, holding other factors constant.

For the survey year equations (column 1–column 3), the risk ratios for age and age squared indicate that the number of children ever born increases with age, but at a decreasing rate. All else equal, late age at first marriage is associated with lower number of children ever born. Of particular note is the magnitude of the risk ratios for age, age squared, and age at first marriage are similar across survey years.

Table 3.3 shows significant differences in number of children ever born by schooling. It is apparent that education of the woman, especially women with secondary or higher level of education have significantly lower fertility (as measured by number of children ever born) compared to women with no schooling. However, the findings also show that fertility for women with primary schooling is not significantly different from that of women with no schooling.

Significant difference in number of children ever born is also observed among religious groups in Ethiopia. Relative to followers of the Ethiopian Orthodox Christian faith, other Christians and Muslims exhibited higher fertility in all survey years, ranging from 6% in 1990 to about 16% in 2005.

With the exception for survey year 2000, wealth status of the household does not have significant influence on fertility behavior of women aged 20–49. Results

Table 3.3 Demographic and socioeconomic determinants of fertility from Poisson regression of children ever born: 1990–2005

	1990	2000	2005	Combined 1990–2005
<i>Residence</i>				
Addis Ababa (ref.)	1.00	1.00	1.00	1.00
Other urban	1.15*	1.09*	1.07*	1.10*
Rural	1.29*	1.33*	1.41*	1.21*
<i>Age</i>				
Current age	1.25*	1.28*	1.26*	1.27*
Age squared	0.99*	0.99*	0.99*	0.99*
Age at 1st marriage	0.96*	0.95*	0.95*	0.95*
<i>Woman's education</i>				
No education (ref.)	1.00	1.00	1.00	1.00
Primary	0.94**	0.98	0.98	0.97**
Secondary+	0.88*	0.90*	0.82*	0.86*
<i>Partner's education</i>				
No education (ref.)	1.00	1.00	1.00	1.00
Primary	1.07*	1.05*	1.06*	1.06*
Secondary+	1.03	0.95**	0.99	0.99
<i>Wealth status (wealth quintiles)</i>				
Not rich	1.00	1.00	1.00	1.00
Rich (top 40%)	0.98	0.95*	0.99	0.97*
<i>Religion</i>				
Ethiopian Orthodox Christians (ref.)	1.00	1.00	1.00	1.00
Other Christians	1.06*	1.05*	1.14*	1.08*
Muslims	1.06*	1.10*	1.16*	1.11*
Traditional	1.04	0.98	1.08**	1.03**
<i>Media: listen to radio</i>				
No (ref.)	1.00	1.00	1.00	1.00
Yes	1.04**	1.01	0.98	1.00
<i>Work status</i>				
Not working (ref.)	1.00	1.00	1.00	1.00
Working	0.94*	0.97*	0.93*	0.95*
<i>Survey year</i>				
1990 (ref.)	1.00	1.00	1.00	1.00
2000	–	–	–	0.94*
2005	–	–	–	0.97*
<i>Residence × survey year interaction</i>				
Urban × 2000				0.89*
Urban × 2005				0.82*
<i>Wald chi-square</i>				
N	4,293.96*	10,604.44*	10,364.28*	24,626.12*
	6,100	10,075	9,190	25,365

Significance level: * $p < .05$, ** $p < .01$.

in Table 3.3 show that wealthier households have lower fertility in 2000. In addition, Table 3.3 also reveals that working women have lower fertility across the three survey years. Of course, only 29% of the women had worked in the past week, and another 5% had worked in the proceeding 12 months (CSA and ORC Macro, 2006). Women who worked were more likely to be divorced, separated or widowed, be younger and have less children, and be slightly more educated and urban.

Results from the multivariate analysis of the combined (pooled) data from the three demographic surveys, confirm that there is significant difference between 1990, and the two DHS surveys (2000 and 2005). The interaction term between residence and survey year also indicates the overall reduction in fertility in 2000 and 2005 (as measured by CEB) is mainly driven by the reduction of fertility in urban areas.

3.3.3 Increases in Contraceptive Prevalence

Bivariate and multivariate analyses are used to examine modern contraceptive use for currently married women using data from the 1990 Ethiopian National Family and Fertility Survey (CSA, 1993), the 2000 and 2005 Ethiopia Demographic and Health Surveys (CSA and ORC Macro, 2001 and 2006).

Contraceptive prevalence by residence, the woman's and her partner's education, age and work status of the woman, wealth status of the household, religion, and number of living children is shown on Table 3.4. Overall, use of modern contraceptive methods increased by more than five-fold in the 15 years period spanning from 1990 to 2005.

Modern contraceptive use among women in urban areas more than doubled from 1990 to 2005, for example, in Addis Ababa prevalence increased from 20% in 1990 to 46% in 2005 (an increase of 130% in 15 years). Although contraceptive use is very low in rural areas, prevalence rate increased by nearly ten fold in 2005 compared to 1990. Table 3.4 also shows that higher contraceptive prevalence is observed among women with secondary or higher level of education, among those from wealthier households, women working outside home, those with media exposure (measured by listening to the radio), and those whose partner's are well-educated.

Contraceptive use by age of currently married women follows an inverted-U shape, indicating low use at both ends of the age cohort. Contraceptive use is also positively correlated with the number of living children, indicating that those women with higher number of living children tend to have higher contraceptive prevalence.

3.3.4 Determinants of Modern Contraceptive Use

We use binary logistic regression to analyze the determinants of modern contraceptive use among non-pregnant currently married women. Results in Table 3.5 show odds ratios of factors influencing modern contraceptive use. The first three columns

Table 3.4 Contraceptive prevalence by socio-economic and demographic characteristics of currently married women age 15–49 (percent using modern contraceptives)

	1990	2000	2005
<i>Residence</i>			
Addis Ababa	20.0	34.3	45.7
Other urban	13.1	26.8	41.1
Rural	1.2	3.3	10.6
<i>Woman's education</i>			
No education	1.1	3.7	9.8
Primary	8.3	13.2	21.9
Secondary+	30.3	33.0	45.9
<i>Partner's education</i>			
No education	0.9	3.6	8.6
Primary	3.7	6.4	16.0
Secondary+	16.5	22.4	34.6
<i>Wealth status (wealth quintiles)</i>			
Poor	0.4	2.4	6.8
Middle	1.3	3.2	12.0
Rich	11.3	16.4	27.0
<i>Media: listen to radio</i>			
No	1.4	3.4	9.0
Yes	11.2	14.6	22.2
<i>Work status (work out side home)</i>			
Not working	3.1	5.6	12.0
Working	2.2	6.9	19.6
<i>Religion</i>			
Ethiopian Orthodox Christians	3.7	8.0	18.8
Other Christians	1.3	4.6	12.0
Muslims	1.4	5.1	8.7
Traditional	0.5	2.4	6.4
<i>Current age</i>			
15–19	0.9	3.0	8.6
20–24	2.1	5.4	15.4
25–29	3.7	7.8	16.2
30–34	3.2	8.0	13.7
35–39	2.5	7.8	16.4
40–44	2.5	6.6	13.2
45–49	0.6	2.5	7.4
<i>Number of living children</i>			
0	0.4	3.1	7.6
1	2.5	5.9	15.6
2	2.6	7.2	14.1
3	3.2	7.0	13.5
4+	3.1	7.5	14.5
Total	2.5	6.3	13.9
N	5,786	9,380	8,644

Sources: Calculated from data.

Table 3.5 Odds ratios of factors influencing modern contraceptive use among currently married women, 1990–2005

Demographic and socioeconomic variables	1990	2000	2005	Pooled
<i>Current age</i>				
Age	1.29*	1.29*	1.24*	1.26*
Age squared	0.996*	0.996	0.996*	0.996*
<i>Residence</i>				
Addis Ababa (ref.)	1.00	1.00	1.00	1.00
Urban	0.99	1.05	0.97	0.94
Rural	0.64	0.37*	0.49*	.43*
<i>Woman's education</i>				
No education (ref.)	1.00	1.00	1.00	1.00
Primary	2.44*	2.24*	1.46*	1.80*
Secondary+	3.93*	2.35*	1.60*	1.98*
<i>Partner's education</i>				
No education (ref.)	1.00	1.00	1.00	1.00
Primary	1.86*	1.15	1.55*	1.44*
Secondary+	1.94**	1.36**	1.45*	1.47*
<i>Wealth Status (wealth quintiles)</i>				
Not rich (ref.)	1.00	1.00	1.00	1.00
Rich (top 40%)	5.63*	3.02*	2.18*	2.54*
<i>Media (Listen to radio)</i>				
No (ref.)	1.00	1.00	1.00	1.00
Yes	1.29	1.49*	1.55*	1.53*
<i>Work status (work out side home)</i>				
Not working (ref.)	1.00	1.00	1.00	1.00
Working	1.15	1.25*	1.35*	1.22*
<i>Religion</i>				
Ethiopian Orthodox Christians (ref.)	1.00	1.00	1.00	1.00
Other Christians	0.69	0.62*	0.52*	0.56*
Muslims	1.05	0.69*	0.51*	0.60*
Traditional	0.64	0.63	0.29*	0.41*
<i>Number of living children</i>				
<=2 (ref.)	1.00	1.00	1.00	1.00
3	1.55**	1.77*	1.51*	1.61*
4+	1.40	2.48*	2.28*	2.24*
<i>Survey year</i>				
1990 (ref.)				1.00
2000				2.46*
2005				5.05*
Wald Chi-square	473.0*	1158.9*	1194.1*	3145.3*
N	5,751	9,152	8,495	23,398

Significance level: * $p < 0.05$, ** $p < 0.01$.

refer to results for each survey separately and column four presents results for the pooled (combined) data. The survey specific regression models (equations) control for current age, residence, education level of the woman and her partner, work status of the woman, religion, media exposure, number of living children, and wealth status of the household. In column four (pooled data), the model includes survey year indicators (dummy variables).

A number of factors appear to be significantly associated with contraceptive use in the three surveys. Age is significantly related to modern contraceptive use. The nonlinear relations indicate that, all else equal, older women are less likely than younger women to use modern contraception. In 2000 and 2005, contraceptive use appears to be significantly higher for currently married women living in urban areas. For example, in 2000, currently married women in urban areas are nearly three-times more likely to use modern contraceptive methods compared to their counterparts in rural areas.

Focusing on education, it is apparent that there is a clear tendency for increased level of education to be associated with significantly higher likelihood of using modern methods of contraception. For example, in 1990 married women with secondary or higher education are about 4 times more likely to use modern contraceptive methods compared to women with no schooling. Partner's education is also significantly positively correlated with use of modern contraception among currently married women in the three demographic surveys.

Household wealth significantly influences contraceptive use among currently married women in the three demographic surveys. The effect is more pronounced in 1990, where the likelihood of using contraception (top 40% in the wealth quintiles) was nearly 6 times higher for the rich compared to the not-rich households. In 2000 and 2005, women who are followers of the Ethiopian Orthodox Christian faith had significantly higher contraceptive use than other religions (other Christians, Muslims, and Traditional). However, in 1990 there was no significant difference among all religions in use of modern contraceptives.

Women working outside home, those who listen to radio, and women with three or more living children showed significantly higher likelihood of using modern contraceptive in the 2000 and 2005 demographic surveys.

Results from the pooled data also show that similar factors significantly influenced use of modern contraceptive among currently married women in the 15 years spanning 1990–2005. The survey year dummy variables reveal that contraceptive use is significantly higher in 2000 and 2005 compared to 1990, with the likelihood of using contraception being greatest in 2005 (all else being equal, the odds of using modern contraception in 2005 was more than five times higher compared to 1990).

3.3.5 Determinants of Under-Five Mortality

Using the multivariate Cox proportional hazards regression, Table 3.6 presents analysis of the impact of maternal and socioeconomic variables on under-five mortality in 1990, 2000, and 2005. The dependent variable is risk of death occurring

Table 3.6 Determinants of under-five mortality, 1990–2005, using Cox proportional hazards regression

	1990	2000	2005
<i>Residence</i>			
Addis (ref.)	1.00	1.00	1.00
Other urban	0.88	1.01	1.01
Rural	1.08	1.09*	1.04
<i>Sex of child</i>			
Girl (ref.)	1.00	1.00	1.00
Boy	1.12**	1.09**	1.14**
<i>Birth order</i>			
First	1.53**	1.45**	1.47**
2nd–3rd (ref.)	1.00	1.00	1.00
4th–5th	0.66**	0.73**	0.74**
6th–7th	0.45**	0.52**	0.46**
8th and higher	0.29**	0.32**	0.28**
<i>Mother's education</i>			
No education (ref.)	1.00	1.00	1.00
Primary	0.75**	0.83**	0.96
Secondary+	0.47**	0.49**	0.46**
<i>Mother's age at birth</i>			
<20 (ref.)	1.00	1.00	1.00
20–34	0.16**	0.16**	0.15**
35–49	3.08**	3.69**	4.44**
<i>Partner's education</i>			
No education (ref.)	1.00	1.00	1.00
Primary	0.87**	0.99	0.98
Secondary+	0.85*	0.86**	0.81**
<i>Wealth status (wealth quintiles)</i>			
Not rich (ref.)	1.00	1.00	1.00
Rich (top 40%)	1.00	0.96	1.03
<i>Media: listen to radio</i>			
No (ref.)	1.00	1.00	1.00
Yes	1.08	1.01	0.97
<i>Wald chi-square</i>	3727.81**	5589.18**	5046.47**

Significance level: ** $p < 0.01$, * $p < 0.05$.

before reaching age five (0–59 months). The independent variables include; maternal and child factors: child's birth order, child's sex, and maternal age at birth; and socio-economic variables: maternal education, paternal education, wealth index, area of residence, and exposure to media. Hazard ratios are reported in Table 3.6. For categorical variable, a hazard ratio significantly greater than one indicates that a child with this attribute has increased risk of mortality than those in the reference category. The reverse holds if the hazard ratio is significantly less than one.

Results presented in Table 3.6 reveal that sex of the child, birth order, mother's education, mother's age at birth, and partner's education are significantly associated with under-five mortality in the three demographic surveys—1990, 2000, and 2005. Boys have a higher risk of dying (between 9–14% higher probability) before

reaching their 5th birth day compared to girls. As expected, mother's education is associated with lower probability of under-five mortality. Children of educated mothers have lower risk of dying compared to children of mothers with no schooling. The effect is more pronounced for children of mothers with secondary or higher education.

In the three demographic surveys, children born to mothers 35 years or older have about 3 to 4 times higher risk of mortality than those born to mothers 20–34 years old. Similarly, first born children have also a higher risk of mortality compared to children of 2nd or 3rd birth order. Previous studies have shown that being the first born and with higher order births, with having a mother who is younger than 18 years of age or is ≥ 35 years at the time of the birth, and with preceding birth intervals shorter than 24 months have been associated with infant and child mortality (Manda, 1999; Rutstein, 2000; Sullivan et al., 1994).

All else being equal, paternal (partner's) education reduces the risk of under-five mortality. The effect is significant and more pronounced if the father (partner) has secondary or higher level of education.

3.4 Discussion

3.4.1 Demographic Transition: Fertility Decline Lags Behind Mortality

Looking at the demographic transition in Ethiopia, we see that under-five mortality declined dramatically, although still relatively high. However, the fertility rate, which had descended from 6.6 in the late 1980s to around 5.5 in 1997–1999, had stalled at this high level in 2002–2004, mainly in the rural areas where 84% of the population live. Recent data (Dec. 2008–Jan. 2009) from large household surveys in rural areas shows that contraceptive prevalence rate (CPR) has nearly doubled since the 2005 DHS in similar areas; this is attributable to the recent expansion of rural health posts, health extension workers providing family planning information, with the predominant use of injectible contraceptives (JSI, 2009).

Given increased CPR, will rural fertility begin to accelerate its initial downward trend? The positive signs are:

1. *Demand side*: ideal family size and additional desired children is declining; female education and age at first marriage are rising;
2. *Supply side*: CPR is rising rapidly in rural areas, access to longer-lasting contraceptives is better, and maternal and reproductive health and family planning services and secondary education are more available.

The implications are that for the time being, the annual population growth rate will likely continue to decline slowly at around 2.5% during this current inter-DHS period (2005–2010) (UN, 2009). With shrinking land availability, the population

pressure, environmental stress and lack of viable agricultural opportunities, there is likely to be an increase in population mobility (both temporary and permanent) from rural areas with less land and year-round employment, towards the small market towns and towards the regional cities and national capital (see [Chapters 9 and 10](#)).

3.4.2 Growing Inequities, 1990–2005

The inequity in fertility grew between 1990 and 2005. Differential risk ratios between Addis Ababa and rural areas rose from 29 to 41%; and between secondary education and no education rose from 10 to 18% (Fig. 3.7). In terms of contraceptive use, the gaps decreased in wealth and education, but increased in media exposure (see [Table 3.5](#)).

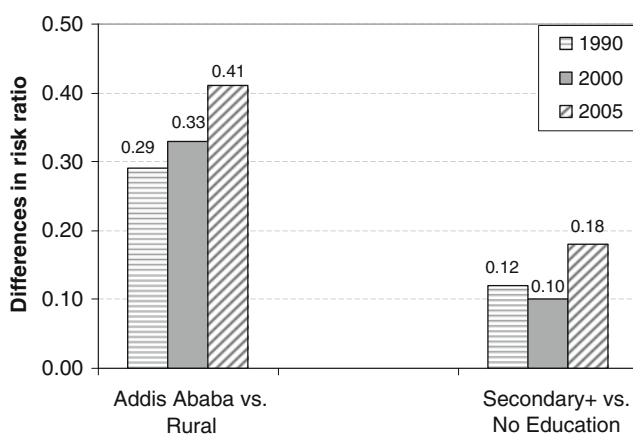


Fig. 3.7 Increasing disparities in children ever born by residence and education, 1990–2005 (source: Calculated from data)

3.4.3 Demand for Children

Mean ideal family size in rural areas was 5.6 (vs. 4.1 in urban) in 2000 and remained high but declined almost one child to 4.7 (vs. 3.4 for urban) in 2005 (it was 5.1 among all illiterate women). In [Table 3.7](#), we see that the percentage of currently married rural women 15–49 who want no more children rose from 31% (vs. 40% urban) in 2000 to 41% (vs. 48% urban) in 2005. It is interesting that the increase was greatest in women with no education, rising from 32 to 43%, compared to secondary educated women where it stayed at 37% (Macro, 2007). In parity, the increase was greatest after having 4 children: for example, 50% wanted no more children at parity 4 in 2000, and it declined to 39% in 2005. Also, the age group with the highest use of modern contraceptives was the 35–39 years old, who have probably already achieved their desired family size (CSA and ORC Macro, 2006.)

Table 3.7 Percentage of currently married rural women aged 15–49 who want no more children, by residence, education and parity, women 15–49, 2000–2005

Indicator	2000	2005	Change
Residence-rural	31	41	+10%
-urban	40	48	+8%
Education-no education	32	43	+11%
-primary	30	40	+10%
-secondary	37	37	0%
Parity-4	39	50	+11%
-5	47	58	+11%
-6	65	73	+8%
Total	32	42	+10%

Source: CSA and ORC Macro, 2001 and 2006.

3.4.4 Unmet Need for Family Planning

There was little change in unmet need between 2000 and 2005, lowering slightly from 36 to 34% (Macro, 2007). The overall decline in unmet need was higher in urban (from 25 to 17%) than in rural areas (from 37 to 36%). The overall change was only 4% decline in rural areas as compared to a 32% in urban areas. However, two of the three largest regions (Oromiya and Southern) actually had increases in unmet need (14 and 5%, respectively).

Thus the high fertility in the past was mainly due to early age at marriage and absence of the means for fertility control. Moreover, as children are psychologically, socially and economically valuable in the society, there has been a strong desire for more children. This is changing as children are becoming more and more expensive (as the net cost of raising children is increasing with more and more children going to school than ever before). For example, net enrolment in primary schools increased from 39% in 2000/2001 to 78% in 2004/2005 (World Bank Group, 2010). In addition, with increasing population, farm size is dwindling sharply and the need for farm labor is falling. Also the decline in infant and child mortality ensures the survival of most children to adulthood. Thus, there is some indication that fertility transition that started long ago in urban areas is now being extended to rural areas as well.

3.5 Conclusions

3.5.1 Incipient Demographic Transition with Lagging Rural Fertility

Overall, one can say that the national demographic transition has started in Ethiopia since 1990, particularly in mortality declines (from over 200 in 1985–1990 to 123 in 2001–2005 in under-five mortality) and in urban fertility (from 3.5 to 2.4). In fact, during 1997–2000, the TFR in Addis Ababa had declined below replacement

levels and has stayed there ever since. This has been found to be due to rather a combination of negative and positive factors that have greatly increased age at marriage, such as unemployment and housing shortages, as well as the recent increase in contraceptive use and abortion (Asfaw Yitna, 2001; Sibanda et al., 2003; Garenne, 2008) and greater female high school attendance.

This continuing urban fertility transition (and revolution in Addis Ababa) has not yet carried over into the rural areas where 84% of the population still lives. Here rural TFR, which had declined from 7.3 to 6.0. between the 3-year recall periods of 1987–1990 (Derg period) to 1997–2000 (initial EPRDF period), stagnated at 6.0 through 2002–2005. This fertility stall happened in the face of a rapid increase in modern CPR in rural areas, from very low rate of 1.2% in 1990 and 3.3% in 2000 to 10.6% in 2005 (and with recent reliable estimates into the mid-20% range). This jump in rural CPR has been largely attributable to the expansion of community-based reproductive health programs and the rapid popularity and availability of injectable methods (Assefa, 2003; JSI, 2009).

Certainly the historical, political, institutional and economic context of the country during these two periods covered by the fertility transition (Lindstrom and Betemariam, 1999), 1997–2000 and 2002–2005 cannot be ignored. There was a war with Eritrea (1998–2000), outbreak of malaria and cholera in some regions of the country, rise in HIV/AIDS rate, two droughts and high food insecurity (1999–2000; 2002–2003) where about 13 million people were highly affected (FEWSNET, 2003); land shortages and urban youth unemployment. On the other hand, there was a rapid expansion in primary school attendance and road infrastructure, and an increase in availability of public and private health services. It is not the intention here to discuss how these events and development may have affected fertility, but to make note that research had documented in the year 2000 a perception of increasing vulnerability and inability to meet one's food needs in rural areas, as compared to urban areas (Teller et al., 2005).

Thus, in light of the both high vulnerability and rapid social change, where rural fertility has stalled and mortality, while having dropped, is still at high levels, what might be the near future of the fertility transition in order to meet the target of a TFR of 4 children by 2015?

1. *Rapid population growth rate*: having come down from a high of over 3% in the early 1990s and now at 2.6%, will the lagged fertility decline pick up the pace again and match that of lowering mortality?
2. *The high demand for children*: with a combination of higher costs of raising children, rising educational enrolment, rising aspirations and reduced kinship support for children, will the reducing demand for children continue?
3. *Community-based reproductive health services*: with the rapid expansion of the Health Extension Package to more isolated, populated rural areas, will the previously high quality of family planning services under the community-based reproductive health agents (CBRHAs) be diluted under the new and multiple-tasked, polyvalent health extension workers?

4. *Age at marriage*: rising significantly even among the predominantly Ethiopian Orthodox Christian population in the northern rural areas, with increased local enforcement, what alternative opportunities, including migration, will there be for these rural girls until they reach age 18?
5. *Poverty, food insecurity, population-land pressure and youth unemployment*: these anti-development forces can also impact to lower fertility.

3.5.2 Policy Implications

Ethiopia has accelerated its updating of interrelated population and development policies that should affect the demographic transition. The main development-related demographic policy issues seem to be separated into growth, distribution and inequality issues:

1. *Growth*: fertility transition and population growth: how to accelerate the fertility transition in rural areas and shorten the time lag (or the fertility stall) with lowering mortality, so that population growth rates will come down further towards 2%;
2. *Distribution*: how to reduce population pressure on the land and natural resources and raise aspirations of the rural youth through off-farm employment, small town development and modernization;
3. *Inequality*: how to bridge the huge gap between rural and urban fertility and mortality, through migration and urbanization policies, urban infrastructure, secondary education and rising age of marriage.

The present declining trends, initially in mortality and now predicted in fertility in the rural areas seem to suggest that there will be a lower dependency ratio and a youth bulge whose human development needs must be planned for (see [Chapter 4](#)).

Appendix

Table 3.8 Demographic and socio-economic characteristics of women in the study (percent): 1990, 2000, and 2005

	1990	2000	2005
<i>Residence</i>			
Addis Ababa	6.02	4.45	5.32
Other urban	9.14	13.71	12.44
Rural	84.84	81.83	82.24
<i>Woman's education</i>			
No education	80.73	75.17	65.89
Primary	11.85	15.78	22.2
Secondary+	7.42	9.05	11.91

Table 3.8 (continued)

	1990	2000	2005
<i>Partner's education</i>			
No education	75.46	66.74	61.03
Primary	16.87	21.59	26
Secondary+	7.67	11.67	12.97
<i>Religion</i>			
Ethiopian Orthodox Christians	53.53	50.52	49.19
Other Christians	12.65	16.97	20.1
Muslims	27.61	29	28.49
Traditional and other	6.21	3.52	2.22
<i>Media: listen to radio</i>			
No	85.03	68.76	57.31
Yes	14.97	31.24	42.69
<i>Work status</i>			
Not working	40.52	43.49	71.7
Working	59.48	56.51	28.3
<i>Current age</i>			
15–19	20.75	24.14	23.21
20–24	16.42	18.61	18.1
25–29	16.45	16.82	17.89
30–34	16.67	11.98	12.85
35–39	13.7	11.17	11.39
40–44	9.2	9.06	8.44
45–49	6.82	8.22	8.12
<i>Marital status</i>			
Never married	17.4	24.0	25.0
Married	72.0	63.7	64.4
Widowed	3.5	3.6	4.0
Divorced	5.6	6.2	4.8
Not living together	1.4	2.5	1.8
<i>Number of living children</i>			
0	25.1	33.78	32.37
1	26.19	25.26	22.92
2	24.55	19.73	21.19
3	16.23	13.68	14.58
4+	7.93	7.55	8.93

Source: Calculated from data.

References

- Asfaw Yitna (2001). Patterns and Determinants of Fertility in Addis Ababa, Ethiopia, 1974–1998. *The Journal of African Policy Studies* 7(2&3).
- Assefa Hailemariam. (1990). *Population Dynamics in Ethiopia*. Addis Ababa, DTRC.
- Assefa Hailemariam. (2003). *Comments on Ten Years of the National Population Policy*, Addis Ababa, July.

- Assefa Hailemariam., and Teller, C. (2006). *Recent Trends in Population and Reproductive Health in Ethiopia: Improving the Evidence Base for Choosing Good Practices*. National Seminar on Best Practices in Reproductive Health, WHO, USAID and Ministry of Health, April 2006.
- Central Statistical Authority (CSA). (1991). *The 1984 Population and Housing Census of Ethiopia: Analytical Report at National Level Volume II*. Addis Ababa, Central Statistical Authority.
- Central Statistical Agency (CSA). (2008). Preliminary Tabulations, 2007 Census Results. Addis Ababa. www.csa.gov.et.
- Central Statistical Agency (CSA) and ORC Macro. (2006). *Ethiopia Demographic and Health Survey 2005*. Addis Ababa and Maryland, Central Statistical Authority and ORC Macro.
- Central Statistical Authority (CSA). (1993). *The 1990 National Family and Fertility Survey*. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority (CSA). (1993). *The 1992 National Health and Nutrition Survey*. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority (CSA). (1999). *The 1994 Population and Housing Census of Ethiopia: Results at Country Level Vol. I and II Analytical Report*. Addis Ababa: Central Statistical Authority.
- Central Statistical Authority (CSA). (1999). *The 1998 National Health and Nutrition Survey*. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority and ORC Macro. (2001). *Ethiopia Demographic and Health Survey 2000*. Addis Ababa and Maryland, Central Statistical Authority and ORC Macro.
- Famine Early Warning System Network (FEWSNET). (2003). Ethiopia Food Security Updates, Monthly Reports, USAID, Addis Ababa, Ethiopia. www.fewsnet.org/Ethiopia
- Garenne, M.M. (2008). *Fertility Changes in Sub-Saharan Africa*. DHS Comparative Reports No. 18. Maryland: Macro International
- John Snow Institute (JSI). (2009). Continuum of Care for Maternal, Neonatal and Child Health. Preliminary Results of the L10K Baseline Surveys, PowerPoint Presentation, Addis Ababa, April 2009.
- Lindstrom, D., and Betemariam Berhanu. (1999). The Impact of War, Famine, and Economic Decline on Marital Fertility in Ethiopia. *Demography* 36: 2, May.
- Macro International Inc. (2007). *Trends in Demographic and Reproductive Health Indicators in Ethiopia*. Calverton, MD, Macro International Inc.
- Manda, S.O.M. (1999). Birth Intervals, Breastfeeding and Determinants of Childhood Mortality in Malawi. *Social Science and Medicine* 48(3): 301–312.
- Ministry of Finance and Economic Development (MoFED). (2005). “PASDEP”, *Ethiopia: Building on Progress: A Plan for Accelerated and Sustained Development to End Poverty*. Addis Ababa, MoFED.
- Rutstein, S.O. (2000). Factors Associated with Trends in Infant and Child Mortality in Developing Countries During the 1990s. *Bulletin of the World Health Organization* 78(10): 1256–1270.
- Sibanda, A., Zewdu Wubalem, Hogan, D., and Lindstrom, D. (2003). The Proximate Determinants of the Decline to Below-replacement Fertility in Addis Ababa, Ethiopia. *Studies in Family Planning* 34(1): 1–7.
- Sullivan, J.M., Rutstein, S.O., and Bicego, G.T. (1994). *Infant and Child Mortality*. DHS Comparative Studies No. 15. Calverton, MD, Macro International Inc.
- Teller, C., Asfaw Yitna, and Keffene Asfaw (2005). *The Demography of Hunger: Case Studies in Population/Land Pressure and Vulnerability to Food/Nutrition Insecurity in Ethiopia*. IUSSP Conference paper, Tours, France.
- Teller, C., Assefa Hailemariam, and Tesfayi Gebreselassie (2007). *Fertility, Mortality and Nutrition Transitions in Ethiopia: Multiple Factors Affecting Socio-economic Inequities*, Union of Africa Population Studies Conference, Arusha Tanzania, December 2007.
- United Nations (2010) World Population Prospects, www.esa.un.org/unpp
- World Bank Group (2010). Education Statistics. Washington, DC.

Chapter 4

The Demographic Transition and Development Nexus in Ethiopia: Real Dividend or Burden?

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Abstract We address the demographic transition in Ethiopia and the possibilities of capturing the demographic dividend observed in some East Asian countries. We also suggest mechanisms to facilitate this possible opportunity. The youthful age structure of the Ethiopian population has not declined much over the 13-year period 1994–2007, but now with the incipient fertility decline expected to accelerate, projections indicate that there would be significant decline in age dependency ratio in the coming four decades. Key education and employment trends show a striking improvement in primary enrollment and modest decline in urban unemployment. However, there is still low secondary enrollment rate and a large gender gap in secondary education as well as wide gender gap in formal employment. The dividend is not automatic and would last for about two generations. Thus it can be reaped only if policies and programs, in countries at the incipient stages of the demographic transition, focus on the needs, aspirations and opportunities for a growing bulge of youth and young adults. Preconditions include: training and job creation, agricultural intensification, labor intensive production technology, improved quality and efficiency of the educational system, healthier lifestyles, stronger aspirations of the youth towards an achievement-oriented society and overall institutional development. If the above preconditions are met, the future could be promising and the youth would turn out to be a societal dividend rather than being a burden.

Keywords Incipient Fertility · Demographic Dividend · Demographic Transition · Net Enrollment Rate · Urban Unemployment · Aspiration · Gender Gap · Education

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4.1 Introduction

Research on demographic change can be useful for policymakers in many ways. First, it is a predictive tool for population trends. Second, demographic change can provide beneficial conditions for development, offering a country the chance to set out on a path of rapid growth; but it requires policymakers to understand the trends and create a policy environment that takes maximum advantage of the demographic potential. Demographic studies also offer a narrative about the challenges and policy priorities for building a better future (Bloom et al., 2001). Such studies are best when applied to the demographic transition theory which deals with changes in age structure of the population as well as the changing roles of women.

The age structure of the Ethiopian population has remained children and youth dominant for a long time now. The recent incipient fertility reductions, however, are beginning to slow down the growth of the youngest population whilst the number of elderly people is not yet important because of the small dimension of past cohort, and because of the still high level of adult mortality. The age dependency ratio in the 1984 census was 112 (CSA, 1991); it declined somewhat in the 1994 census to 95 (CSA, 1999); in the 2007 census it declined a little to 91 (CSA, 2010) and is projected to fall to 76 by the year 2015. The United Nation's medium variant projection also projects it to reach 45.6 by 2050 further reinforcing the dramatic change in the age structure of the Ethiopian population in the coming four decades. Under these conditions, there is potential for Ethiopia if the country is to capture the demographic dividend that will be opened up by the demographic transition process (Ringheim et al., 2009).

Nonetheless, the demographic dividend does not last forever. Depending on a country's socio-economic and demographic situations, the period of the dividend differs from region to region and from country to country. For example, the window period for China lasted for over 30 years (Feng and Mason, 2005), is projected to take 40 years for Jordan (Bloom et al., 2001) and 55 years for Egypt (PRB, 2007) making clear the fact that there is a limited window of opportunity.

More importantly, the dividend is not automatic (Ross, 2004). While demographic pressures are eased wherever fertility falls, some countries will take better advantage of that than others. Some countries will act to capitalize upon the released resources and use them effectively, but others will not. The countries that benefited most from the demographic transition process, and subsequent dividend, are Korea, Singapore, Taiwan, Hong Kong, Thailand and Malaysia (Bloom and Williamson, 1997). The same study also revealed that, different parts of the world took different advantage of the transition. For example, Latin America's demographic benefits were smaller than East Asians, although the demographic contribution was almost identical to that of East Asian miracles.

Without the right policy environment, countries will be too slow to adapt to their changing age structure and, at best, will miss an opportunity to secure high growth. At worst, where an increase in the age structure of the population is not matched by the increased job opportunities, they will face costly penalties, such as rising unemployment and perhaps also high crime rates and political instability (Bloom

et al., 2007). Between 1970 and 1999, countries with a very young age structure were four times as likely as those at the end of the demographic transition to have experienced outbreaks of civil conflict (Leahy, 2008/2009).

Furthermore, the demographic transition is documented to bring forth two types of dividends. The first dividend is a persistent but ultimately transitory phenomenon. A second dividend is also possible when the youth get decent job, technical expertise, entrepreneurial skill, healthy lifestyle, on the job training and pecuniary benefit that would accumulate and pass on to the future. A population concentrated at older working ages and facing an extended period of retirement also has a powerful incentive to accumulate assets – unless it is confident that its needs will be provided for by families or governments. Thus, the first dividend yields a transitory bonus, and the second transforms that bonus into greater assets and sustainable development (Lee and Mason, 2006).

4.2 Background

People sometimes misinterpret the fact that countries with youthful populations have been more vulnerable to conflict and poor governance to mean that young people are, in and of themselves, a security threat. Nevertheless, young people are an asset for any society, and their well-being and success determine the future of a country's development (Leahy, 2008/2009). When education, health care, and employment opportunities are available, young people renew and revitalize a country's economy and institutions. On the other extreme, youthful population might also be a source of threat and insecurity for a country in terms of juvenile delinquency, vagrancy, theft, robbery, prostitution, beggary, etc. when the needs for these social services are not matched by the performance (malfunctioning) of the economy on the one hand, and the incapability to utilize and the inability to aspire for these services by the youth themselves on the other.

Ethiopia is a small economy but a demographic giant, with a population size of around 80 million in 2010. The annual average population growth rate was 2.6% in the 1994–2007 period with a population doubling time of around 27 years (CSA, 2010). This shows that the country's population is growing rapidly and the age structure, as a result of high fertility and rapid population growth rate, is youthful. Accordingly, the population below age 15 is as high as 45% resulting in high dependency ratio. With regard to spatial distribution, 16% of the population lives in urban areas while 84% are rural population living mainly in densely populated high land settlements (CSA, 2010).

Ethiopian population size was estimated to be around 11 million at the turn of the twentieth century and it took 60 years to double that size, reaching 22 million by 1960 (CSA, 1999). However, it took only 27 years to double the population size from 22 million to 44 million, and it has reached around 74 million in 2007. The reason behind the differences in doubling time is that in the first case both fertility and mortality were equally high, and the natural rate of increase in population

was low. In the second case, however, due to improvements in medical technology and improvements in public health services, mortality declined significantly while fertility stalled for some time due to social, cultural and economic reasons.

The issue of population and its impact on the socioeconomic development of Ethiopia has started to gain increasing importance since the great famine of 1984/1985 (Seife-Selassie, 2003), which has had its impact on the country. It is only after this tragic phenomenon that population and problems related to it have become widely discussed. Cognizant of this fact, the country made an attempt to formulate a national population policy in 1990, but it was only in 1993 that the population policy of Ethiopia was realized, with only weak implementation (See Chapter 15). However, the Ethiopian government has given some emphasis to population and development linkages, and population was considered as one of the eight pillar strategies (MoFED, 2006) in the government's former Plan for Accelerated and Sustainable Development to End Poverty (PASDEP). Now the new Growth and Transformation Plan (GTP) is proposing, as of September, 2010, to incorporate the population pillar into the women and youth empowerment pillar and as a cross-cutting strategic direction (MoFED, 2010).

4.3 Conceptual Framework

Policies are instruments that governments use to influence people or institutions, directly or indirectly, to achieve a plan, goal or program tailored towards improving human well-being. Favorable policies take time to establish and take effect. The same holds true for population policy and its impact on development. The mere existence of well designed policies, however, does not guarantee improved standards of living or the achievement of targeted goals. More important is the existence of well organized, functional and quality institutions which implement the policies designed. The conceptual framework below therefore is meant to illustrate the interplay between demographic and other development variables in a dynamic context through considering demand and supply sides (Fig. 4.1).

While high population growth, due to decline in infant and child mortality, puts initially a burden on economic growth and poverty reduction through higher dependency ratios, lower savings, and increased land pressure, it also generates favorable conditions for accelerated economic growth later on. When fertility rates begin to decrease rapidly, and do so faster than mortality rates, the proportion of working age people in the total population increases. The welfare benefits from this transition could be substantial with increased household savings and investments, and accelerated economic growth.

Lessons from East Asia's "economic miracle" provide the best evidence of the potential impact of the demographic dividend. As early as the 1950s, countries in this region developed strong public health systems that ensured child survival, promoted smaller families, and made contraception acceptable and easy to obtain. A strong educational system, sound economic management and well-built institutions made it possible to absorb the large generation of young adults into the workforce. Therefore, key policy actions needed throughout sub-Saharan Africa in

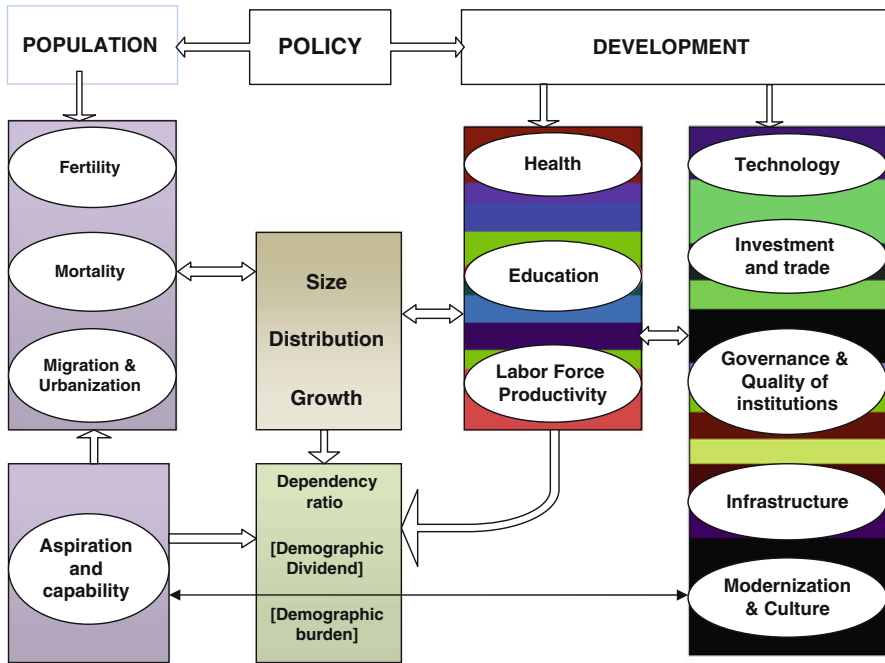


Fig. 4.1 Theoretical description of the dynamic population-development linkages (source: developed by the authors)

general and in Ethiopia in particular are those that expand youth opportunities, give them the skills required to participate fully in the economy and public life, encourage them to value culture and transform it into tangible asset, remove barriers that stand in their way from maximizing their potential, promote healthy behaviors and equip them with technology.

Technology helps a country to reap the dividend in many ways. Among others, a country can use educational technology to reach remote areas, adopt health information system to improve health and employ communication technologies to diffuse information that improve health and create awareness on the importance of smaller family size, etc. which in turn would ease the government’s fiscal pressure. A country can also adopt labor intensive technology to absorb the labor force and add value to its export items which also improves production and productivity. Moreover, using technology would enable a nation to integrate itself with the changing and dynamic global system. Similarly, trade openness and private investment as well have significant contributions in creating employment opportunities through diversifying a country’s export in terms of export commodities and areas of destination.

Generally, it is alleged that Ethiopia is at the incipient stage of the demographic transition, and demographic transition theory dictates that with declining mortality, mainly infant and child mortality, fertility declines as parents become assured that the child they bear survives long. At the onset of the transition, when population

growth takes off in response to the decline in child mortality, the young age dependency ratio increases, yielding relatively fewer workers; while the demand for social services, especially education and health, and thus fiscal pressures increase, thereby hampering economic growth and/or social development.

Later, when followed by rapid decline in fertility, population growth will slow down, dependency ratios will decline, young people reaching working age will boost the labor force, and savings and investment rates increase. The demographic change also reduces the demand for social services allowing a rebalancing of public spending on human and physical capital. Together, these evolutions provide the country with a temporary demographically induced development that is likely to be transformed into sustainable development. The benefits from this demographic bonus can be large, and the sooner it can be captured, the better. This, among others, requires an accelerated decline in fertility as well as sound economic and labor market policies to engender employment intensive growth.

Even when the above conditions are met, the dividend may not be realized fully because supply side policies or interventions will not be fruitful unless the youth reveal their preference and are capable of utilizing the social services provided. Motivations and beliefs in one's abilities to affect change in their life, which are developed during adolescence, have major consequences on the well-being of adults as outcomes (Optat, 2009). As a result, when there is a shift in social structure, for example, massive expansion in educational and employment opportunities, the question that remains is: to what extent does an individual's life course agency influence his/her ability to navigate through those changes, and benefit from them in the face of socio-cultural constraint? (See [Chapter 5](#)).

Therefore, policies that influence the socio-cultural values and norms of the country including national and regional family law on age at first marriage, harmful traditional practices and women's right plays a pivotal role in eroding the prevalent detrimental practices and increase the likelihood of the country to benefit from the upcoming demographic potential.

4.4 Objectives

The general objective of this chapter is to analyze the demographic transition process and the possibility of reaping the demographic dividend, as well as to suggest mechanisms to facilitate this opportunity. It also aims at informing government and other development partners what measures need to be taken in advance to expedite the demographic transition, and reap the demographic dividend. The specific purposes of the chapter are, therefore, to measure the size of the working age population and its demand for education, employment, economic and social infrastructures; to look at the educational training and employment situation of the youth in general and of women in particular; and to take lessons from the experience of other countries which benefited from the demographic transition process.

4.5 Materials and Methods

4.5.1 Data Sources

The main sources of data are: Census reports (1984, 1994, and 2007), National Labor Force Survey (1999, 2005), Urban Employment and Unemployment Survey (2003, 2004, 2009),¹ Ministry of Education Statistical Abstracts (2002, 2008), World Bank Educational Statistics Development Indicators, Ethiopian Demographic and Health Surveys (CSA and ORC Macro, 2001, 2006), World Population Prospects (United Nations, 2009) and research studies at national, regional and global levels.

To project the future changes in the population and the demand for social services, the Spectrum software developed by The Futures Group International (1999) is employed. Input data for demographic and development variables are taken from the above sources and are fed into the spectrum model using two fertility scenarios: fast declining fertility and slow declining fertility and assuming the GDP growth rate to continue at the current high growth rate of 10.1%. (See [Chapter 14](#)).

4.5.2 Measurements and Definitions of Variables

Labor force participation and unemployment rates are based on the “usual” and “current” activity status approaches (CSA, 2009). The latter measures the economic activity status in relation to a short reference period, that is, the 7 days prior to the date of interview while the former measures productive activities during most of the previous 6 months. Labor force survey questions were asked of those aged 10 years and over and the responses are used to divide these populations into three mutually exclusive categories: employed, unemployed and not in the labor force. The employed and the unemployed population together make up the labor force.²

The study is also based on the “relaxed” or broad definition (unlike the definition used by ILO) of unemployment where it considers persons without work and those who are available for work, including those who were or were not looking for work. The “seeking work” criterion is completely relaxed and unemployment is based on the “without work” and availability criterion only. The availability is tested by asking the willingness to take up work for salary or wage in locally prevailing terms, or readiness to undertake self employment activity, given the necessary resource facilities.

¹CSA conducted urban employment and unemployment survey in 2006, but the authors did not consider it in this study because there are some inherent flaws in the data.

²Respondents who were engaged in productive activities at least for 4 hours during the 7 days prior to the date of interview were considered currently employed while those that did not are considered as currently unemployed. On the other hand, those who were not engaged in productive activities such as those in homemaking activities and attending school, as well as the sick and the aged/pensioned, etc. are classified as economically inactive populations.

Educational attainments at primary and secondary levels are measured using the gross enrollment rate (GER), net enrollment rate (NER) and gender gap. Gross enrollment rate for primary level is the percentage of total enrollment in primary schools, irrespective of age, out of the corresponding primary school age population, ages 7–14. GER is a crude measure of school coverage. Usually, since it includes under-aged and over-aged pupils, GER can be higher than 100%, and often is the case in countries attempting to address the backlog of students interested in attending school (MoE, 2008).

Secondary level GER similarly compares those students, regardless of age, with the population of the appropriate age range. For Ethiopia, the ages for the first cycle secondary (general secondary) is 15–16, and for the second cycle, it is 17–18 years of age. As with primary net enrollment rate, the secondary net enrollment rate measures the enrollment of children of the appropriate age (15–18 years old) divided by the population of that age. Net enrollment rates are ideally 100%, but for the secondary level this is seldom achieved.

4.6 Results

4.6.1 Population Growth and Age Dependency

The dividend is assumed to be obtained when the growth rate of the economically active population is greater than the growth rate of the total population. Therefore, we measure the dividend using the dependency ratio as a standard unit. Although there was no significant change in the age structure of the Ethiopian population over the past 13 years (1994–2007), projections using the Spectrum software reveal that there will be a significant change in the age structure of the Ethiopian population.

Depending on which fertility path the country is to take, Ethiopia's population will show significant difference in the years to come. Under the fast declining fertility scenario, the population size of the country will reach around 136 million in the year 2040, while it will be 161 million under the slow declining fertility assumption, showing a population difference of 25 million which almost equals the current population size of Ghana (See Chapter 14). Going beyond size, the difference in fertility will also have significant effect on the age structure of population (Fig. 4.2).

The age dependency ratio as of 1984 was 1.12 (CSA, 1991), implying that for every 100 working people in the economy there were about 112 dependents to cater for. The respective figures for the 1994 and 2007 censuses were 0.95 and 0.91 (CSA, 1999; CSA, 2010) respectively, indicating a slight decline in age dependency ratio. It should be born in mind that these ratios do not take into account the existing huge size of unemployment in the economy. If one has to consider unemployment rate, the magnitude of dependency would be higher than these figures suggest. Nonetheless, Ethiopia's demographic outlook is expected to be different, and under the fast fertility decline scenario, the age dependency ratio will decline by half from its level of 0.95 in 1994 to 0.47 by 2040, and two people in the working age

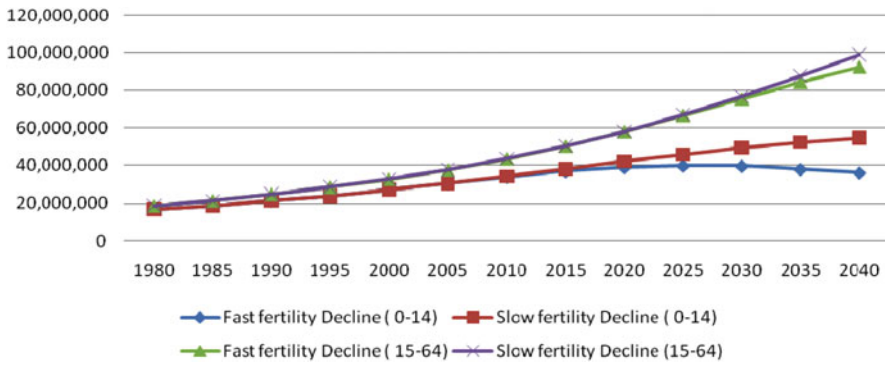


Fig. 4.2 1980–1994 actual and projections of age structure and dependency, 2007–2040, using the fast and slow declining fertility assumptions of the spectrum (source: Senait, 2010)

group are theoretically expected to support one dependent only. Under the slow fertility decline assumption, on the other hand, the age dependency ratio will not show a significant decline and remains at 0.63 without notably easing out the age dependency burden as shown in Fig. 4.2 above.

Latent in changing age structure and diminishing family size, there is a change in the status of women. As fertility declines, child bearing and rearing take smaller proportion of women’s time, leaving them free to pursue other previously unattainable activities such as education and employment (MacNay, 2003). With lesser family size, girls receive quality education as there is enough resource to share with boys. They are also freed from the drudgeries of life and are relieved of their poorly rewarded multiple responsibilities such as taking care of younger siblings, fetching water, milking, collecting firewood and other domestic chores.

The changing age structure creates a potential for social development, and the demographic dividend is realized only when proactive measures are made in areas other than population. An in-depth analysis of the population development linkages in Ethiopia over the past 15 to 20 years, where data is available, witness that there are improvements in both population and development areas, but much remains to be done. This is evident in the country’s progress in terms of employment, education and other social development indicators.

4.6.2 Unemployment

Data are compared from the 1999 and 2005 National Labor Force Surveys (NLFS), and the 2003, 2004 and 2009 Urban Employment and Unemployment Surveys (UEUS). The former survey showed that there is some decline in unemployment rate at national level between 1999 and 2005. The unemployment rate for the total country was 8% in 1999 (CSA, 2000) and declined to 5% in 2005 (CSA, 2006). On the other hand, urban Ethiopia showed higher but relatively stable levels between

2003 and 2009, changing from 26.1% in 2003; to 22.9% in 2004 and to 20.4% in 2009 (CSA, 2003, 2004, 2009).

There is a huge disparity in unemployment rate in urban and rural Ethiopia, and unemployment is more severe in urban areas as underemployment is for rural areas. For example unemployment rate in 2005 in urban Ethiopia was 20.6 while it was 2.6 for rural Ethiopia (although underemployment is severe in rural areas). However, the problem of urban unemployment is, in part, an outgrowth of the population structure and rural-urban imbalance in distribution.

A study by the World Bank showed that Ethiopia's urban labor supply has been growing at a sustained annual pace of 3.5%, partly due to internal migration (World Bank, 2007). Further increases can be expected due to population pressures on land and environmental degradation in rural areas, the momentum of the development process itself and the relatively higher urbanization rate of around 4% (CSA, 2010). Longer term determinants such as "regional imbalances in employment opportunity, improved communications, road and transport networks and changing aspirations of the younger generation" (Deshingkar and Grimm, 2005) also are reasons for the increase in urban labor force. In the absence of analysis of the recent census it is hard to quantify, but there are concerns about absorption into the urban economy, and downward pressures on wages of the local unskilled population (World Bank, 2007). (See Chapters 8, 9 and 10).

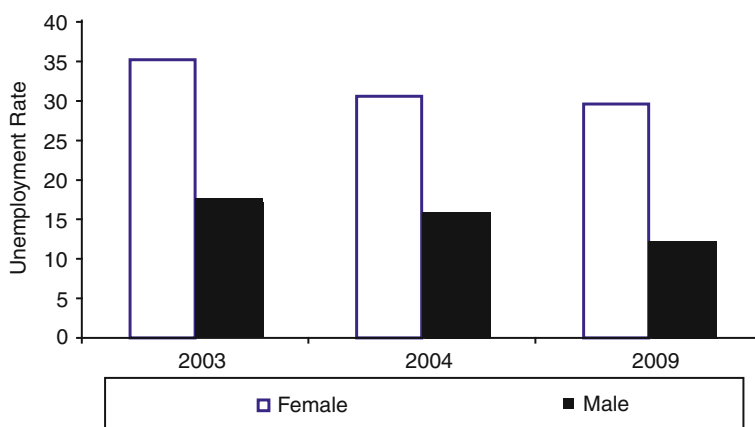


Fig. 4.3 Urban unemployment trend in Ethiopia by sex, using the current approach

Despite the relatively stable and higher unemployment level in urban Ethiopia over the past decade, disaggregating it by sex and age reveals that the youth (15–29 years) in general and females in particular take the disproportionate share of the urban unemployment problem. In general, females are two times more likely to be unemployed than males. The problem is even severe when we consider females in the age bracket of 25–29: female rates stay high (above 30%) from 15–19 through 25–29, while male rates, which are almost as high as 17.6 in the 15–19 age category, decline to nearly 12% by age 25–29.

The decline in male unemployment rate is not only with the age of the person, but there is also a dramatic decline in male unemployment rate over time where it declined to 12.2% in 2009 from 17.6% in 2003. (See Fig. 4.3) Nevertheless, unemployment rate for females remained significantly higher than that of males for different age groups. Also, the level remained above 30% from 2003 to 2009 without a notable decline as shown in Figure 4.4 below.

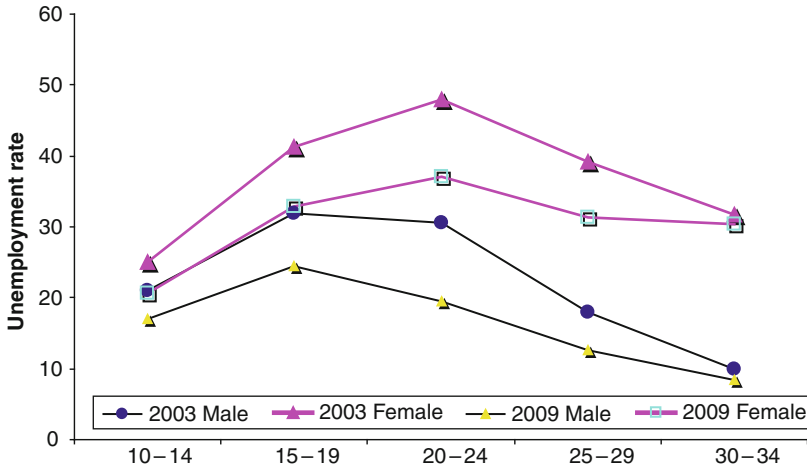


Fig. 4.4 Urban unemployment trend in Ethiopia by sex and age group, using current approach. Sources: CSA, Urban Employment and Unemployment Survey, 2003, 2004 and 2009

There is no a single major culprit to blame for the high rate of unemployment in urban Ethiopia. Review of literature on youth unemployment reveals that it is an outcome of demand and supply side problems. These include: the rapid growth rate of the (urban) population, the mismatch between the demand for and supply of labor, the low skill and entrepreneurial capacity of the youth (Getnet, 2001), the growth and job creation performance of the economy (EEA, 2005/2006), the growing youth/adult labor force in need of employment, the rigid labor market and institutional policies (Berhanu et al., 2005/2006; World Bank, 2007), the definition of unemployment used by CSA (World Bank, 2007), the aspiration on the part of the youth for well paid public sector jobs, the lack of social status for “bad” jobs, and external selection criteria, such as social network, working only after one has actually become unemployed (implicitly encouraging the youth to be unemployed rather than take up a temporary job) (Serneels, 2004).

Data from the 1994 census and the 2005 NLFS reveals that the labor force participation rate of females in the working age group has increased from 63.6% in 1994 to 75.2% by the year 2005, while male participation remain at higher rates (82.3 and 85.4%). The dramatic increase in participation of females between 1999 and 2005 is partly explained by the rising cost of living, forcing usual female homemakers, often discouraged from working, to have to consider working and the increase in college

graduate in general and women graduates in particular. Other possible explanations for the growing gender gap in youth unemployment in urban Ethiopia include: greater skills training of males, cultural barriers to women's working and government's urban job creation programs which favor males, especially the construction boom that is going on in urban areas.

4.6.3 Unemployment and Educational Training

In addition to the wide gender gap, the urban unemployment rate is high in absolute terms. Part of the problem lies in the education system. The poor quality of education did not equip graduates with the necessary skill and expertise to fit into the existing jobs, nor did it make them real entrepreneurs to establish and run their own businesses. One study shows that the mismatch between the skill requirements of the labor market on the one hand and the education/training skills of the youth on the other is a factor held responsible for the high and persistent levels of unemployment in the urban centers (Getnet, 2001). One other reason, in relation to the educational system, that contributed to youth unemployment is the legacy of the past educational system. The lack of appropriate skills for the job market and the excessively academic orientation contribute to creating the wrong kind of attitude and job expectation on the part of the youth, including the preference for white-collar jobs as opposed to agricultural and manual work (Berhanu et al., 2005).

Cognizant of the severe unemployment problem, the government of Ethiopia launched Technical and Vocational Training and Education (TVET) program in the late 1990s with the objective of producing and supplying well trained and qualified labor force in the market as per the demands of the employer (MoE, 2006/2007). The same report shows that the number of students or trainees enrolled in the program has increased to 106,300 in the year 2006 from only 3,000 in 1996/1997. It also indicates that the female participation has increased and reached 51% of the total TVET enrollments.

Although these TVET institutions have increased the number of graduates, there is still a high mismatch between the demand and supply of labor. One source of this mismatch between demand and supply is the absence of appropriate market survey by TVET institutions to determine the field of study that is needed by employer organizations; another is due to the non-involvement of different stakeholders such as parents, employer organizations and civic societies in the design and implementation of TVET programs. Thus, the graduates could not find or they have to wait a long time for a job.

Furthermore, in a comparative study of government and non-government TVET institutions, Alemu (2000) found significant differences in quality. The graduates from the sampled non-government schools had a significantly higher employment rate. Respondents from the two types of TVET schools also expressed different views on what were the major problems that hindered the implementation of vocational programs. Those from government schools identified lack of facilities,

absence of occupational information and public relation service. The respondents from non-government schools considered low absorptive capacity of the companies, duplication of training areas and absence of accreditation services as the main problems.

4.6.4 Education, Youth and Gender Gap

There is impressive improvement in primary school enrollment rate in Ethiopia over the past 15 years. This is partly due to the efforts taken by the government to meet the Millennium Development Goals of achieving universal primary education. However, the low status of females again is reflected in the gender gap that prevails in educational attainment, despite notable improvements in recent years. As indicated in the Fig. 4.5 below, females' significant increase in primary education is almost equal to that of males. More interestingly, the gender gap gets narrower with time and in 2008 it was 5.6% only, declining from its highest level of 16.6 in 1997.

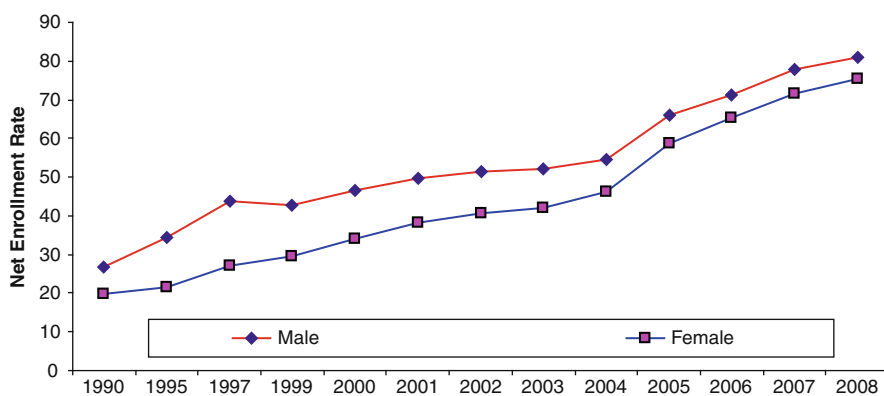


Fig. 4.5 Trends in net primary enrollment rate in Ethiopia by sex, 1990–2008 (source: World Bank, 2009)

One can partly acclaim the efforts of the government including the establishment of women's affairs office at national and regional level which focused on abolishing harmful traditional practices and the promotion of girl's education, for the observed improvement in the gender gap in primary education. In addition, the Ministry of Education (2005) also set a target "to address equity issues by narrowing the gap between male and female, among regions and rural and urban areas" in its Education Sector Development Program III objectives which would likely gear schools and other development partners to work towards it. The increasing number of female teachers, as female role models (Lasonen et al., 2005) might have also attracted girls to school, and contributed to the improvement of the gender gap in primary education.

The increase in enrollment rate in primary education means that in the future illiterate unemployment is likely to be less prevalent (Berhanu et al., 2005) in the country. Hence, investment in secondary education to absorb those who graduated from the primary level while simultaneously improving the absorptive capacity of the economy should get attention in the government's development plan in order to retain and transform the success achieved in primary education into development objectives, as well as to realize the upcoming youth potential.

Ethiopia's track record in terms of secondary education had been poor in the past. In recent years, however, the country is showing progress in secondary education enrollment rate. Nevertheless, females' record is lagging behind and ironically, unlike the trend in primary education, the gender gap in secondary education increased over time, growing from 4% in 1999 to 11% in 2006. As in employment, there exists a wider gender disparity in education, especially in secondary schools.

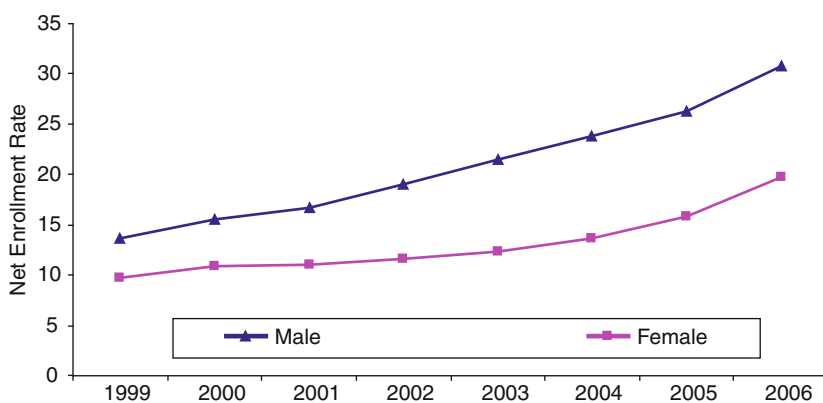


Fig. 4.6 Trends in net secondary enrollment rate, 1999–2006 by sex (source: World Bank, education statistics version 5.3, 2009)

There are four main categories of factors causing gender gaps: macro-level, legal and policy related, school-related, and socio-cultural. On the socio-cultural level, factors contributing to the gender gap in sub-Saharan Africa include: gender socialization, sexual and gender based violence, child labor, domestic labor, early marriages and the valuing of education for boys more highly (Randell and Gergel, 2009). Accordingly, gender disparities intensify in secondary education, as cultural attitudes reinforce the norm that girls do not need further education after primary school. If the financial expenses of education force parents to choose whether to send their son or daughter to school, they will choose the son because sons are seen as a higher economic investment for the future of the family. In relation to this, a study by Optat (2009) suggests that the persistent gender gap in educational attainment in Ethiopia is not only an outcome of biased resource allocation in favor of boys within households, but is also a product of different expectations by gender that the socio-cultural norms impose on the youth.

However, even when girls are provided with the opportunity to pursue secondary education, their preparation level is far below than that of boys, due to unequal treatment during primary school and lack of parental and familial support. Thus the transition from primary to secondary school is an important dropout point where boys are lauded for passing their examinations successfully and girls are left behind. Recent data from MoE (2009) show that there has been significant gender disparity in primary school completion rate, although now getting narrower over time. For example, primary completion rate for grade 8 was 26.3% and 42.1%, respectively, for female and male in 2005 and increased to 40.5% for females and 48.4% for males in 2009.

Another study by Pathfinder International (2006) found out that female early marriage is one of the major causes for the denial of education. The Ethiopian Demographic and Health Survey also indicate that girls who marry young tend to drop out of school and are more likely to bear children during adolescence, thus effectively ensuring that they will not return to school, or develop other work skills. Married girls receive little or no schooling and 73% of married women have received no education, compared to 45% of never-married women (CSA and ORC Macro, 2006).

School age for secondary education (15–18 years) of girls also overlap with their marriage age. The fact that the practice of early marriage is pervasive in rural Ethiopia makes secondary enrollment for girls in Ethiopia a difficult task to achieve. From supply side as well, the concentration of secondary schools in urban areas, which inhibits rural women from attending schools (through renting house and living alone), coupled with other opportunity costs, widens gender disparity in secondary education. This is evident from a report on proximity to schools. Accordingly, for almost all households in the country (95%), there is a primary school available within a distance of less than 10 km. But access to secondary schools is very poor. Secondary schools are available within 5 km radius for only 27% of total households in the country, and more than 50% of the rural households live 15 km or more away from a secondary school (MoFED, 2006).

4.7 Discussion

The above findings indicate that Ethiopia's position in capturing the demographic dividend is not that far from reality, but requires aggressive and timely measures in both demographic and development areas. The most important findings related to population and social development linkages are the gender disparity in secondary education, and unemployment and low status service jobs employment in urban areas.

The low internal and external inefficiency of the educational system in the country is partly responsible for the increasing rate of the educated unemployed in urban areas. Furthermore, the imbalance between the supply of and the demand for labor is rooted in the population structure, in which those who annually join the labor

force far exceeds those who exit and job opportunities that exist. Especially in urban areas, the growth of the economy has not been able to absorb such huge numbers. Therefore, unless in the medium to the long run, the rate of increase in population is reduced, this problem will persist even if the economy continues to perform at the current high rate. This is evident in the Spectrum projections where the annual average number of new jobs required under the fast declining fertility scenario is 1.3 million while 2.1 million new jobs are required by the year 2040 if fertility is to decline slowly. In addition to measures aimed at reducing population growth, the economic growth in the country should be labor-intensive to accommodate the increasing youth and youth adults that are joining the labor force.

4.7.1 Fertility Decline and Age Structure

In addition to its effect on population size, fertility changes the age structure, and this will have short term and long-term impact both at macro and micro levels. For example, with rapid declines in fertility, household (and family) sizes tend to reduce, and in smaller families, girls are more likely to be educated. Educated women are more likely to choose to work where they command higher wages and strengthen the labor force (Bloom et al., 2001). As a result, the proportion of women in the workforce tends to rise. Women, therefore, start families later and have fewer children, as the opportunity cost of being unemployed increases. When they do have children they are better able to provide for them, offering improved nutrition and health as well as participating more effectively in their education, especially in the formative early years. The result is increased educational quality, which is an even more important determinant of subsequent economic growth than the standard measures of educational coverage and attainment (Eric and Kim, 1995).

An important cultural area that impacts both unemployment and population issues is the status of women in a paternalistic society. Empowering women and enabling them with equal decision-making autonomy address population issues and ultimately reduce unemployment by increasing production and productivity. Therefore, as it has been advanced, to close the gender gap in primary education, policies are needed that aim at much more comprehensive, societal stance, including cultural change in values and attitudes, to narrow the gender gap in other aspects of socioeconomic areas. From the vantage point of value change as well, emphasis should be given to secondary education for females. The benefits to be obtained from educating females are double fold, as the African proverb goes: “If we educate a boy, we educate one person. If we educate a girl, we educate a family – and a whole nation”.

Using cross-country analysis, Bloom et al. (2007) found out that among sub-Saharan African countries, Ghana, Ivory Coast, Malawi, Mozambique, and Namibia have bright futures for growth because these countries have done relatively well in the institutional side, and there is a significant increase in working age share in the next 20 years. Cameroon, Nigeria, Senegal, Tanzania, and Togo have the greatest potential for increased economic growth from a demographic point of view, but will

likely have to significantly improve their institutional framework to fully reap the demographic dividend.

Ethiopia's future in terms of demography, as shown in the findings part, is promising. Nevertheless, using institutional quality and development indicators such as ICRG Scores, Polity Scores, Business Environment Rank and Sachs-Warner Openness indicate that Ethiopia stands in the middle of the pack together with countries such as Cameroon, Nigeria, Senegal and Tanzania, implying that the country must take proactive and aggressive measures in the institutional side as well.

4.8 Conclusions and Policy Implications

One can be less pessimistic or cynical about the impact of changing population structure, due to the possible opportunity of the dividend if and only if proactive actions are taken in areas other than population (while expediting the rural fertility transition simultaneously). Policies and programs in countries at incipient stages of the demographic transition must focus on the needs, aspirations and opportunities for young people in order to capture the upcoming potential and transform it into sustainable development.

These proactive actions include: creation of jobs for the youth, promotion of labor-intensive production technology, improving the internal and external efficiency of the educational system, encouraging healthy lifestyle, changes in the aspiration of the youth towards achievement-oriented culture, provision of infrastructures and improving the quality of institutions in terms of designing appropriate policies and implementing them to meet the demands of the youth. These are among the difficult preconditions that must be fulfilled in order to realize the opportunities thrown open by the demographic transition process.

If Ethiopia is to prosper and develop sustainably, the youth must be kept at the center and existing problems in education and employment must be addressed. Thus proactive measures need to be taken tailored towards integrating the youth and employment opportunities. This can be achieved through: restructuring the labor market for knowledge transfer and sustainable job engagement, enhancing the youths' capacity and creativity, raising the value of work and changing the social stigma attached to "bad" jobs, linking general and technical educations with job opportunities, increasing the level and quality of secondary education and further reducing gender gap in primary and secondary education.

Moreover, opening the country's trade to diversify its exports in terms of area of destination and commodity types, adopting labor-intensive technology, encouraging private investment and restructuring the economic system from agricultural led policy to a balanced one would absorb the existing and emerging labour force.

Over the past two decades, Ethiopia has made impressive improvements in primary education enrollment, but its track record in reducing youth unemployment is not that encouraging. Due to lack of productive rural land and skilled urban jobs, the youth turn out to be dependent, and this reduces individual savings that naturally are passed on to the national level. Beyond the current economic problems, the

unemployment of urban youth would also transmit problems to the future. The youth lack work experience, entrepreneurial ability, pecuniary benefits and skills that otherwise would have been accumulated. The youth then can grow to be potential burdens instead of real dividends.

Therefore investments in the above areas, needed to realize the dividend, are vital and actions must be taken earlier. Moreover, policies that favor such human resource development, as later age at marriage, secondary education and lower desired family size and fertility reduction in the past few years need to be sustained in order to capture the dividend sooner. Finally, yet importantly, existing research on the population and development nexus focused more on the supply side, demanding the government and other concerned bodies to supply social and economic infrastructure. Nonetheless, to fully reap the dividend, research should also be done on the demand side which address the often unmet aspirations, expectations and capabilities of the youth at community, regional and national level.

References

- Alemu Yibeltal. (2000). *A Comparative Analysis of Vocational and Employment and Non-government Schools/Training Centers in Ethiopia*. A master's thesis. Addis Abeba: College of Education, Addis Ababa University.
- Berhanu Denu, Abraham Tekeste, and Van Der Deijl, H.: (2005/2007). *Characteristics and determinants of youth unemployment, underemployment and inadequate employment in Ethiopia*. Employment Policies Unit, Employment Strategy Department, Employment Strategy Papers.
- Bloom, D.E., Canning, D., Fink, G., and Finlay, J. (2007). *Realizing the Demographic Dividend: Is Africa any Different?* Program on the Global Demography of Aging, Working Paper Series Program on the Global Demography of Aging, Harvard University, PGDA Working Paper No. 23
- Bloom, D.E., Canning, D., Nandakumar, A.K., Sevilla, J., Huzarski, K., Levy, D., and Bhawalkar, M. (2001). *Demographic Transition and Economic Opportunity: The Case of Jordan*.
- Bloom, D.E., and Jeffrey G. Williamson. (1997). *Demographic Transition and Economic miracles in emerging Asia*: National Bureau of Economic Research, Cambridge.
- Central Statistics Authority (CSA). (2000). *The 1999 National Labour Force Survey*, Addis Ababa, Ethiopia.
- Central Statistics Agency (CSA). (2003). *Urban Bi-annual Employment and Unemployment Survey*. Addis Ababa, Ethiopia.
- Central Statistics Agency (CSA). (2004). *Urban Bi-annual Employment and Unemployment Survey*. Addis Ababa, Ethiopia.
- Central Statistical Agency (CSA). (2006). *The 2005 National Labour Force Survey*, Addis Ababa, Ethiopia.
- Central Statistical Agency (CSA). (2009). *Urban Employment and Unemployment Survey*. Addis Ababa, Ethiopia.
- Central Statistical Agency (CSA). (2010). *The 2007 Population and Housing Census of Ethiopia: National Statistical Summary Report*. Addis Ababa, Ethiopia.
- Central Statistical Agency (CSA) and ORC Macro. (2001). *Ethiopia Demographic and Health Survey, 2000*. Addis Ababa, Ethiopia and Calverton, MD, Central Statistical Agency and ORC Macro.
- Central Statistical Agency (CSA) and ORC Macro. (2006). *Ethiopia Demographic and Health Survey 2005*. Addis Ababa, Ethiopia and Calverton, MD, Central Statistics Agency and ORC Macro.

- Central Statistical Authority (CSA). (1991). The 1984 Population and Housing Census of Ethiopia. Analytical Report, Vol. II, Addis Ababa, Ethiopia.
- Central Statistical Authority (CSA). (1999) The 1994 Population and Housing Census of Ethiopia: Results at Country Level, Vol. II Analytical report, Addis Ababa, Ethiopia.
- Deshingkar, Priya A., and Sven Grimm. (2005). *Internal Migration and Development: A Global Perspective*. International Migration Organization, IOM Migration Research Series. No. 19.
- Eric, H., and Kim, D. (1995). Schooling, Labor Force Quality, and Economic Growth. National Bureau of Economic Research, Working Paper No. 5399.
- Ethiopian Economic Association (EEA). (2005/2006). *Report on the Ethiopian Economy: Unemployment Challenges and Prospects*, Volume V. Addis Ababa, Ethiopia.
- Feng, W., and Mason, A. (2005). *Demographic Dividend and Prospects for Economic Development in China*. Paper presented for the UN Expert Group Meeting on social and Economic Implications of Changing Population Age Structures, Mexico City, August 31–September 2, 2005.
- Getinet Astatike Haile (2001). *Determinants of self-employment in urban Ethiopia: Panel data based evidence*. The Policy Studies Institute, 50 Hanson Street, London.
- Lasonen, Johanna; Kemppainen, Raija; and Raheem, Kolawole. (2005) Education and Training in Ethiopia: An Evaluation of Approaching EFA Goals, Institute for Educational Research, Working Papers, No. 23.
- Leahy, E. (2008/2009). *Beginning the Demographic Transition: Very Young and Youthful Age Structures*, New Directions in Demographic Security.
- Lee, R., and Mason, A. (2006). Back to Basics: What is the Demographic Dividend? *Finance and Development*, a quarterly Magazine of the IMF 43(3).
- MacNay, K. (2003). Women's changing role in the context of the demographic transition. 2004/ED/EFA/MRT/PI/48. Background paper prepared for education for all; Global Monitoring report 2003/04: Gender and education for all, UNESCO.
- Ministry of Education (MoE). (2005) Program Action Plan (PAP) Education Sector Development Program III (ESDP-III) 2005/2006 – 2010/2011 (1998 EFY – 2002 EFY), Addis Ababa Ethiopia.
- Ministry of Education (MoE). (2006/2007). *A century Journey of education and training in Ethiopia, 1908–2007*. Addis Ababa Ethiopia.
- Ministry of Education (MoE). (2007/2008). Education Sector Development Program Planning and Policy Analysis Department, *Education Statistics Annual Abstract*. Addis Ababa, Ethiopia.
- Ministry of Education (MoE). (2008/2009). Education Sector Development Program Planning and Policy Analysis Department, *Education Statistics Annual Abstract*. Addis Ababa, Ethiopia.
- Ministry of Finance and Economic Development (MoFED). (2006). *Building on Progress A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)*. Addis Ababa, Ethiopia.
- Ministry of Finance and Economic Development (MoFED). (2010). Growth and Transformation Plan (GTP) 2010/11-2014/15 Draft, September. Addis Ababa, Ethiopia.
- Optat, H.T. (2009). *Incapable to Aspire: A conceptualization of Ethiopian Youths' well being using the capability approach and exploring its consequences on life course plans*. Brown University Sociology Department and Population Studies and Training Center, Presented at the PAA Meetings, Detroit, April.
- Population Reference Bureau (PRB). (2007). Population and Economic Development Linkages: The 2007 Data Sheet.
- Randell, S.K., and Gergel, D.R. (2009). Opening Address Presented at the Federation of University Women of Africa Conference, Lagos, Nigeria; July 2009.
- Ringheim, K., Teller, C., and Sines, E. (2009). *Ethiopia at a Crossroads: Demography, Gender, and Development*. Washington, DC. Population Reference Bureau Policy Brief.
- Ross, J. (2004). Understanding the Demographic Dividend. POLICY Project, Futures Group, Washington, DC.
- Seife-Selassie Ayalew. (2003). *Population and development in Ethiopia*. In: Proceedings of the National Population Conference, 7–8 July, 2003, UN ECA Conference Center. National Office of Population, August 2003, Addis Ababa, Ethiopia.

- Senait Tibebe. (2011). Population, Family Planning and Long-Term Development Planning “Predicting an Unpredictable Future”. In: *Demographic Transition and Development in Africa: The Unique Case of Ethiopia*. C. Teller and Assefa Hailemariam (in Press).
- Serneels, P. (2004). *The Nature of Unemployment in Urban Ethiopia*. Center for the Study of African Economies, Oxford University.
- The Futures Group International. (1999). *Computer Programs for Examining the Socioeconomic Impacts of Population Growth*, RAPID Version 4. Washington DC.
- The Transitional Government of Ethiopia. (1993). Office of the Prime Minister. National Population Policy of Ethiopia, April 1993, Addis Ababa, Ethiopia.
- United Nations, World Population Prospects. (2009). The 2008 Revision, Population Data Base. <http://esa.un.org/unpp>
- World Bank. (2007). Urban Labour Markets in Ethiopia: Challenges and Prospects. Volume I: Synthesis Report; Poverty Reduction and Economic Management Unit. Country Department for Ethiopia; Africa Region.
- World Bank Group. (2009). *Education Statistics*. Washington, DC, World Bank Group.

Chapter 5

Better-Educated Youth as a Vanguard of Social Change? Adolescent Transitions to Later Marriage and Lower Fertility in Southwest Ethiopia

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Abstract In this chapter, we illustrate the process of social change through an examination of two markers of the transition to adulthood in Ethiopia: (1) entry into marriage, and (2) desired family size. The data include 2084 in-school youths aged between 13 and 17 years from the urban and rural areas of Jimma Zone of Southwest Ethiopia. We investigate how youths' own perceived individual aspirations and lifetime goals (i.e. agency) are associated with increased levels of education. Coupled with parental expectations and family and community context, these inform youth about the timing of the transition to adulthood. Our findings show that community norms of family formation and the level of socioeconomic development in their community are strong predictors of life course plans. Even though social identity also appears to affect how the youth envision their life course plans, agency, as conceptualized by the "capability approach", seems to have little impact on this cohorts' family formation plans. Thus, it appears that youth's desires to benefit from the expanding educational and occupational opportunities by reinterpreting family formations norms, e.g., by delaying marriage, have not yet been incorporated in the youths' life course planning (perhaps due to stringent social mores, as exemplified by the statistical significance of community norms as a predictor of life course plans). Addressing this palpable cohort-disparity between youths' perception of expanded opportunities and that of their parents who lived through relatively limited opportunities is crucial in enhancing the benefits of the recent structural investments in human capital in the region.

Keywords Life cycle · Transitions to adulthood · Youth · Marriage fertility · Capability approach · Social change · Psychology of international development

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5.1 Introduction

Changes in the timing of events marking the passage of youth to adulthood are a harbinger of social change through the succession of birth cohorts. As noted by Norman Ryder (1965), cohort succession can revolutionize the structure of social institutions by replacing traditional patterns with dramatically new behaviors, with society-wide implications for social change. In this chapter, we illustrate this process of change through an examination of two markers of the transition to adulthood in Ethiopia: (1) entry into marriage, and (2) fertility (small family size) plans. We investigate how youths' individual aspirations, associated with increased levels of education, coupled with parental expectations as well as family and community context, inform youth plans about the timing of the transition to adulthood. We define youths' life course agency as an *active* process through which they plan the trajectories of their life course transitions (Shanahan, 2000); agency is manifested through choices and actions, which they take, given the opportunity structures in their societies, and constraints of history and social circumstance (Elder et al., 2003).

The adolescents examined in this study are from urban and rural areas of Jimma Zone of Southwestern Ethiopia, and are between ages 13 and 17 years. Among the members of this cohort, 86% of boys and 82% of girls in Jimma Town (pop. 121,000 in 2007) are enrolled in and regularly attend school. On the other hand, 77% of boys and 73% of girls in accessible rural areas are enrolled in and regularly attend school (Jimma Longitudinal Family Survey of Youth). This compares to a gross enrollment rate (grades 9–10) in Oromiya zone of 38% in school calendar 2006–2007. The Jimma Zone data analyzed here are not comparable to the Oromiya figures since youths in this study age 13–17 years often are enrolled in other lower grade levels – many started school at delayed ages, and because of irregular attendance in the past, have not progressed to the expected levels of schooling for age. In fact, among this cohort only 40% of Jimma Town youths are enrolled in 8th grade or higher, 19% of youths in the small towns, and 3% of youths in rural areas.

Despite this, many in this cohort expect to complete their secondary education. These girls and boys have very high aspirations about their ultimate educational attainments, with four-fifths expecting to get more than 12 years of education (see Herman and Hogan, 2009; Lindstrom and Herman, 2010). Of course, given the relatively few (but expanding) centers of advanced commercial and technical training and post-secondary education programs available to them and their slow age progression through primary schooling, it is likely that only a few members of this cohort will be able to attend post-secondary education. Lately, however, there has been a noticeable expansion in private institutions that teach technical, vocational, and college degree courses in Ethiopia that have expanded educational opportunities.

This is one of the potentially transformative cohorts for Ethiopian society outside of Addis Ababa, being among some of the first to go onto secondary education in significant numbers. In other research based on this group of youths we have shown that a majority of this cohort sees occupational stratification as increasingly based on merit (such as years of education, vocational training, and fluency in Amharic)

instead of on ascribed factors (such as ethnic identity and religion) (Loft et al., 2010). The sampled adolescents believe that the level of education needed for all occupations is higher than that of their current incumbents, which is an indicator of increased credentialism. At the same time, young persons who believe that merit based on educational performance is an important aspect of occupational attainment act upon these expectations by increasing their plans for further education. This is an example of agency – adolescents with defined educational goals and a perception of how to achieve those goals live in a way that will help them attain their goals. Educational and occupational aspirations of the members of this cohort are highly responsive to perceptions of own well-being and agency (Herman and Hogan, 2009). For instance, youths who perceive themselves to be at a high risk of contracting debilitating health conditions in the future manifest markedly lower education aspirations (Lindstrom and Herman, 2010).

In addition, these adolescents (both boys and girls) believe they have considerable autonomy from their parents in regard to education and the choice of occupation. The one exception is rural boys, only half of whom expect to choose their own occupations; these are young men who believe they will be required by their families to become subsistence or cash crop farmers (for example, growing coffee, eucalyptus, and chat) (Policy Brief 19, 2007 JLFSY).

About half of the Jimma Zone adolescents studied here say they will choose their own spouse, whereas about a quarter say they could marry someone their parents do not approve of, and 90% of boys and girls say they could disapprove of parents' choice of spouse for them, if their parents in fact tried to find them a spouse (Policy Brief 10, 2007 JLFSY). They typically have egalitarian gender role ideologies, although young persons living in small towns and rural areas cling to the more traditional expectations of their predecessors. For example, only 23% of urban youths say the husband should have the final say in decisions that affect the household compared to 36% of those living in small towns, and 50% of those in rural areas. In the urban areas 15% say it is acceptable for a man to keep a mistress compared to one-quarter of those in small towns and rural areas.

The aim of this research is to find out whether the cohort in this study also expects to revolutionize the ways in which family transitions occur: do they plan to marry at a later age than their predecessors? Do they expect family sizes of two children or fewer? Since virtually every female hopes to become pregnant as soon as she marries, we do not consider the timing of birth in this study.

5.2 Background Literature

5.2.1 *Life Course Perspective*

This research is guided by five principles of the life course perspective that are useful to consider in this analysis: timing, linked lives, time and place, life-span development, and agency (Elder et al., 2003). We hypothesize that the different

opportunity structures available to this cohort interact with family and community settings to determine individuals' transitions into social roles such as marriage, and adulthood plans, such as intended family size.

In the case of the cohort we study, the construction of schools have made educational opportunities widely available for the first time, improved human capital, and created new behavioral expectations not observed in any prior cohort (timing). The *time and place* principle leads to the hypothesis that differences in size of place and community development are some of the place characteristics that are relevant to this cohort's pathways of family formation.

The principle of *linked lives* takes into consideration the basic sociological tenet that social interactions and socialization determines behavior. Individuals interact with others within networks of shared relationships, which emanate from the individuals embeddedness in both formal and informal institutions, such as family, schools, and friendship circles. These networks also provide a normative benchmark of social expectations on appropriate timing of life course events. In the case of this cohort, we measure the normative structure as the marriage practices of adults in the community; specifically, the average age at which parents in a given community expect their children to get married. We measure peer influences by contact with peers outside of the family and by membership in youth clubs, many of which are associated with promoting health, education, employment or other aspects of well-being among youth.

Individuals exhibit agency when they envision the trajectories of their life courses, and make choices and take actions toward achieving those trajectories. Agency is measured here by the extent to which young persons have interactions with peers (who may have new ideas about the family formation process) and their autonomy from parental authority. However, the extent to which young people exercise agency depends on the opportunities available in the places they live and the family situations in which they grow up. We measure family resources by family wealth and father's education. The number of brothers and sisters is used as an indicator of the parents' level of fertility.

Despite the overwhelming high prevalence of disheartening life circumstances stemming from poverty, civil unrest, and epidemics; youths in Africa manifest an unwavering resilience and optimism that signals a potential for positive social change in the future. Evidence of this resilience is documented in a volume titled *Makers and Breakers: Children and Youth in Postcolonial Africa* (Honwana and De Beck, 2005). The contributors of this volume highlight how African youth are reinventing their identities and "culture" despite their marginalized position in the post-colonial global economy by transforming their pain into determination that is bound to produce a veritable positive social transformation.

5.2.2 Conceptualizing Well-Being and Agency Using the Capability Approach

The Capability Approach looks beyond material basic needs for survival, by paying particular attention to opportunities and freedoms that individuals have as they

strive to expand their well-being. The Capability Approach asserts that in evaluating well-being the focus should be on what individuals are able *to do* or *be*, that is, on their *capabilities* (Sen, 1985; 1992; 1993; 1999). Within the capability framework, commodities and income are seen as a means to an end, an end that is improved well-being, but they are rarely seen as an end in themselves (Sen, 1985). The Capability Approach also rejects the commodity/income-based approaches to well-being because the ability to translate materials and services into *functionings* (e.g. converting food access to being well nourished, medical care access to being healthy, or to translate school access to become an informed and cultivated individual) differs across individuals (Sen, 1999). Simply put, individuals have different commodity requirements (Sen, 1992); for example, a manual laborer, a pregnant woman, and a librarian surely need different levels of carbohydrate intake. In this study the subjects are in a homogeneous age group having approximately the same general basic needs for shelter, food and clothing, schooling, and family support. What may differ among these adolescents is the extent to which these resources are available in the city, small town, and rural areas and by extension the resources endowment of their respective families. Most crucially, the youth differ in their perceptions of personal freedom (capabilities) to convert such resources to affect change in their own lives.

This cohort is able to be different from previous cohorts because of the establishment of a viable school system with its attendant educational opportunities. They also have less traditional ideas about decision-making (emphasizing their own role and minimizing their families' roles, and feelings of gender equality). Thus, their perceived freedom to convert resources (e.g. schools) into education, that is, their level of capabilities is markedly higher.

5.3 Methods

5.3.1 Data

The data for this paper come from the Jimma Longitudinal Family Survey of Youth (JLFSY, 2007). It is representative of the population of Jimma Town (population of 120,000; CSA, 2008), the small towns of Yebu, Serbo, and Sheki (about 5,000 each), and nearby rural areas. The Jimma Zone is located in the Southwest region of Ethiopia.

At the first stage, households were randomly sampled from within each study site, with the sample size in each site determined by the relative proportion of the youth population in the site using the population census and the overall target sample size. In the second stage, one adolescent boy and one adolescent girl were randomly selected from each household. Approximately 3,500 households were screened, resulting in a sample of 2,106 adolescents consisting of an approximately equal number of boys and girls aged 13–17 years.

Between October 2005 and February 2006, household data were collected from the household head or the spouse of the head using a household survey that recorded data on the age, sex, relationship to household head, ethnicity, religion, education,

occupation, marital status, and residence. Following this, the adolescents were directly interviewed using a separate survey. The adolescent questionnaires collected information on schooling, employment, perceptions of parents' expectations, aspirations for the future, health and health care access, health risks and vulnerability, nutrition and food security, gender values, fertility, and marital plans. The complimentary household questionnaire collected background information including migration experience for all current household members and adult children of the household head who have established their own independent households. The questionnaire also collected information on the residential location of relatives of the head and spouse, participation in exchange networks, and measures of economic assets and well-being. Trained interviewers in the Amharic and Afan Oromo languages collected questionnaire data.

This paper is based on 1,987 youths currently enrolled in and regularly attending school at the time of first interview, as we believe they are the vanguard of change. By vanguard of social change we mean the expected ideational and structure change in family formation – i.e. timing of entry into marriage and family size – that will ensue since this group will experience a significant improvement in educational and commercial/private sector opportunities, and as a consequence new pathways for social mobility.

5.3.2 Variables, Measures, and Definitions

Variable definitions are provided in Table 5.1; means and standard deviations are provided in Table 5.2. As a general strategy we have chosen to measure the timing of adolescent expectations about marriage, and family size in a conservative fashion, requiring that respondents be clearly in each of the categories in order to be classified as such. To that end, expected timings of marriage are divided into early or late, based on whether they fall below the median (early) or at the median or higher (late), defined specific to each sex. It is noteworthy that almost all of the adolescents, whether classified as early or late here, plan to marry at ages (median for girls of 25 years and for boys of 29 years), that are far in excess of the traditional age at marriage in Oromiya (17.1 years for women and 24.4 years for men).

The fertility rate in Ethiopia has traditionally been high, with an average TFR of 5.4 in the period 2003–2005, but urban fertility has fallen to 2.4 (CSA and ORC Macro, 2006: Table 4.2). Fertility among the Oromo traditionally has been higher (TFR 6.2 in 2003–2005) than in the rest of Ethiopia (CSA and ORC Macro, 2006: Table 7.7). The parents of the JLFSY cohort have a mean number of surviving children of 5.1. In contrast, one-half of the Jimma youths in this study expect to have two children or fewer, and those with larger family size preferences typically want three or four children. This cohort's family size preferences, if realized, will provide the conditions for a demographic dividend (see Chapter 4).

We used multiple items collected in the interviews to form summary measures of different dimensions of agency conceptualized by the capability approach (see Table 5.1). These include the extent to which youth value gender equality, believe

Table 5.1 Definitions of variables and measures: jimma longitudinal family survey of youth

Dependent variables: transition to adulthood variables

Plans to delay transition into marriage: a binary variable recorded as 1 if a youth anticipates delaying marriage, and recorded as 0 otherwise. Youths are defined as planning to delay marriage if they anticipate marrying at an age later than the anticipated median age of first marriage of her/his sex. For boys anticipated median age of marriage is 30 years, hence boys planning to marry after their 29th birthday are categorized as having plans to delay marriage whereas for girls median age is 25 years and hence girls planning to marry after their 24th birthday are categorized as having plans to delay marriage

Low fertility plans: a binary variable coded as 1 if a youth plans to have two children or fewer and recorded as 0 otherwise

Independent variables:

A: Agency indicators

High agreement with gender equality: the egalitarian gender values Index was created from factor loadings for agreement with six statements (0 = Agree, 1 = Disagree, 0.5 = Don't know) regarding gender roles and gender equality: The index included questions on whether a woman should always listen to her husband, normally a man should not have to do housework, marriage by abduction is acceptable, the husband should have the final say in all major family matters, there is nothing a woman can do if her husband wants to have a mistress, and female circumcision is a practice that should continue. Cronbach's Alpha for the six items is 0.58. Youths hold attitudes of gender equality if their score on the egalitarian gender index lies in the highest quartile. High values of the index correspond to approval of more egalitarian relationship

High decision-making autonomy: Decision-making autonomy index is created using factor loadings of responses on two questions: Could you take a job that your parents did not approve of? Could you marry someone that your parents did not approve of? Cronbach's Alpha: 0.46. A binary variable recorded as 1 if the youth score on decision-making autonomy index is in the highest quartile of the distribution

High social interaction with peers: A binary variable recorded as 1 if youth reports having opportunities to interact with age peers of either sex outside their families and recorded as 0 otherwise

Club membership: a binary variable recorded as 1 if youth belongs to at least one social club and recorded as 0 otherwise

B: Biographical, familial, and contextual predictors

Social identity

Age: chronological age in years, the youths were aged between 13 and 17 years

Female: coded as 1 for females, or zero otherwise

Ethnicity: coded as 1 if youth is Oromo, or zero as otherwise

Household resources

Household socioeconomic status (SES): an index of household assets created from factor loadings for ten household items: radio, television, electric stove, bicycle, motorcycle, electricity, protected drinking water, toilet, non-dirt floor, owns home. Cronbach's Alpha for the ten items is 0.56. High values of the index correspond to high economic status

Father's level of education: this variable is measured by years of education completed by youth's father

Number of siblings

Community context

Community's preferred marriage age: an average of the age at which all parents in the community would prefer their children to get married

Table 5.1 (continued)

Urban residency: A binary variable recorded as 1 if the youth is a resident of the city of Jimma and recorded as zero otherwise

Community development index: composite index created at the community/neighborhood level from factor loadings for mean values of four indices: household socioeconomic status, housing quality, sanitation, and egalitarian relationship index. Cronbach's Alpha for the four mean indices at the community level is 0.81. High values of the index correspond to higher levels of development

Table 5.2 Summary statistics: Jimma longitudinal family survey of youth, Jimma zone, Ethiopia. 2005 (*N* = 1987)

	Mean or proportion	Std. dev.
<i>Transition to adulthood variables</i>		
Late marriage	0.200	
Low fertility	0.476	
<i>Predictors variables</i>		
<i>Agency indicators</i>		
Gender equality	0.397	
Decision-making autonomy	0.294	
Extra-familial interaction with peers	0.364	
Social club membership	0.267	
<i>Socio-demographic controls</i>		
Age	14.785	1.338
Female	0.492	
Ethnicity (Oromo)	0.648	
Number of siblings	4.114	2.487
<i>Household wealth</i>		
Household wealth	0.002	0.981
Father's education	4.598	4.704
Number of siblings	4.114	2.487
<i>Community context</i>		
City (rural as ref)	0.358	
Community development	0.258	0.930
Parents' preferred age at marriage	25.858	

that they, as individuals, have high autonomy in key life course decisions, and whether they have unstructured and structured opportunities for interaction with peers. We include three sets of biographical and contextual factors as indicators of capabilities to plan for the future. For attributes that define social identity we include age, sex, and ethnicity. These variables are critical markers of social and cultural positions that may affect perceptions of norms of behavior. As a measure of household resources, we include an index of household assets as a proxy for family's socioeconomic status, a variable measuring fathers' level of education as an indicator of non-traditionalism of parents, and the number of siblings as a measure of resource depletion.

Lastly, we include a third set of variables (see Table 5.1) which characterize the community in which the youth resides, including a binary indicator of urban or rural residency and a measure of the level of socioeconomic development of the community in which the youths reside. These variables measure access to institutions such as educational and health facilities that may affect young persons' well-being and life course aspirations. We also include a measure of community (adult) norms regarding entry into marriage.

5.3.3 Analytical Technique

We use logistic regression models to determine the effects of the agency, household resources, and community context on the odds that a youth has plans to delay marriage or plans to have low fertility. We estimate separate models for the two outcome variables – marriage plans and fertility plans. Results are expressed as odds ratios – the odds of young persons with a particular characteristic (independent variable) to the odds that persons without that characteristic – on the outcome (late age at marriage or small family size). Odds ratios close to 1.0 indicate that the independent variable has no impact. Odds ratios substantially greater than 1.0 indicate the independent variable increases the probability of the outcome; odds ratios substantially less than 1.0 indicate the independent variables decreases the probability of the outcome. Statistical tests of significance indicate whether the odds ratios are different than 1.0 in the population represented by the sample; we use a significance level of 0.05 or less as the criterion for significance in this analysis.

5.4 Results

Family resources (measured as household wealth and father's education) are not important for adolescents' expectations of age at marriage (see Table 5.3). This is in contrast to other nations in which family resources are important to the capacity to move from traditional ages at marriage (Manda and Meyer, 2005).

Variables measuring social identity are important in family formation plans as predicted by the life course perspective. As adolescents grow older they are more likely to expect delayed marriage; however, expected family size stays the same regardless of the age of the adolescents. Gender is important for the number of children expected – young women expect to have smaller family sizes than do young men (OR = 1.5). That is quite common in societies moving from a high fertility regime to a low fertility one – women are the leaders and men follow.

The number of siblings an adolescent has (an indicator of the fertility of their parents) has no impact on expected family size. This finding is unexpected – typically children from larger families want more children (Murphy, 2007). This suggests that the forces of change are not confined to family experiences. This lack of effect of

Table 5.3 Results of logistic models predicting the youth plans on two transitions to adulthood plans, Jimma zone, Ethiopia. 2005 (N = 1987)

	Late marriage		Low fertility	
	Odds ratio	Std. err.	Odds ratio	Std. err.
<i>Agency indicators</i>				
Gender equality	1.200	0.146	1.078	0.108
Decision-making autonomy	0.718*	0.095	0.654**	0.069
Extra-familial interaction with peers	1.122	0.148	1.171	0.127
Social club membership	0.813	0.108	1.031	0.109
<i>Socio-demographic controls</i>				
Age	1.076***	0.045	0.979	0.034
Female	1.066	0.137	1.510**	0.160
Ethnicity (Oromo)	1.078	0.138	0.817*	0.085
Number of siblings	1.014	0.024	0.980	0.019
<i>Household wealth</i>				
Household wealth	0.883	0.076	0.952	0.065
Father's education	0.993	0.015	1.019	0.012
<i>Community context</i>				
City (rural as ref)	0.913	0.138	1.123	0.136
Community development	1.000	0.088	1.625**	0.123
Parents' age at marriage	1.532**	0.141		

* $p < 0.05$, ** $p < 0.016$, *** $p < 0.10$.

parents' number of children reinforces this idea that the parents' behaviors do not matter much for this revolutionary cohort. Surprisingly, the Oromo, who have traditionally had later ages at marriage (roughly 2–3 years later than the Amhara; CSA and ORC Macro, 2006: Table 6.4) are not more likely than other ethnic groups to delay marriage further (OR = 0.98) once the cohort shifts to favoring quite late ages at marriage. The Oromo are less likely to have low fertility expectations than other ethnic groups (OR = 0.81).

We now address the importance of community norms and opportunity structures – in those communities in which adults have later ages at marriage, these young persons expect to have later ages at marriage. Surprisingly, the JLFYS youths in rural areas and small towns do not differ significantly from Jimma Town youths in either plans for early marriage or small family sizes. This may be because Jimma Town has relatively few resources compared to other cities in Ethiopia. It may also be that youths who live in cash-crop oriented communities and have somewhat greater access to educational and employment opportunities than typical rural residents of the Oromiya region, anticipate reaping the benefits from such institutions, and as a consequence intend to delay family formation and anticipate having smaller and easy to manage family sizes.

Finally we address the indicators of agencies which we measured by capabilities. Extra-familial social interactions, the extent to which adolescents have contacts with peers away from their families, which might be more common in a highly mobile

population, does not have an effect on expected age at marriage or family size. Nor does an expressed belief in gender role equality affect these two outcomes. This is surprising given our expectation that traditional sex role attitudes would decrease age at marriage and increase ideal family size. Perplexingly, young persons who report they have greater autonomy in making their own decisions say they expect to have an earlier age at marriage and larger family sizes. Clearly, the greater agency of this cohort compared to prior cohorts does not always promote the emergence of new patterns of family formation. In this case, it seems to be social identity, local norms, and opportunities that are producing expectations of much later ages at marriage and small size families.

5.5 Conclusions

This chapter examines changes in expected family formation roles among a historically unique cohort. We argue that the recent expansion of school enrollment and increased years of schooling and adolescents' growing belief that occupational attainment is done increasingly on the basis of merit has created a cohort that is distinctly different. Although we do not have data for the previous cohorts, given the recent increasing trends in social development in the country (e.g. health, education, safety net and gender; see [Chapter 4](#)) and its attendant modernizing effects on social behavior (in principle) we expect the cohort to have more egalitarian gender roles and to claim more autonomy from their families in decision-making than earlier cohorts. The plan of nearly all members of this cohort to marry at later ages and to have smaller families than what was experienced by prior cohorts is a remarkable shift that will reduce population growth in the future and could contribute to a demographic dividend. Combined with the better human capital of this cohort, some of the preconditions are getting in place for increased economic development. As the leading cohort in this change, these adolescents likely will only witness the beginning of this revolutionary change; but successive cohorts should enjoy the full advantages of educational and occupational opportunities in their transitions to adulthood.

The life course approach is useful in highlighting the factors that affect early life transitions from adolescence to adulthood in this historically unique cohort. While immediate family resources do not directly affect their life course plans, the changing norms of marriage, as well as the needed cultural preconditions and rising costs of getting married in their local community have a strong predictive influence on the ages at which these young people expect to get married.

The level of community development (see definition [Table 5.1](#)) also affects members of this cohort. Members of this unique cohort who live in more urban and/or developed communities with better opportunity structures expect smaller family sizes. While family socioeconomic resources do not seem to matter, the ascribed social identities of young persons have great influence on how the members of this cohort perceive themselves and their futures. The Oromo, with their historical situations as subsistence and commercial farmers and herders, and with a need for large numbers of surviving children, more often desire larger family sizes. But even the

Oromo among these youths now expect family sizes no larger than three or four children.

These young women, anticipating life courses that will involve greater human capital investments and paid work, are much less likely to see their futures only as housewives and mothers of many children. They expect to marry and have children as tradition dictates, but in their own time and in their own way. As the members of this cohort get older they seem to become more serious in their life course plans, being more likely to expect later ages at marriage and small families. In fact, one study showed that many female students in the rural and urban areas of the Jimma Zone expect to migrate abroad, mostly to the Middle East (see [Chapter 8](#)). Whether this intention becomes a reality for the JLFYS cohort will become apparent in future waves of the survey. These are indications of agency – members of this cohort are planning for their futures according to their social identities, changing local norms for the family life course, and the potential opportunities in their communities and elsewhere.

Other measures of agency (corresponding to one aspect of Sen's capabilities) are not particularly important for life course plans. Indeed, beliefs in gender equality do not lead to plans to delay marriage and to decrease family size. Surprisingly, also the extent to which they anticipate to exercise autonomy in employment choice and spouse selection (see definition of autonomy in [Table 5.1](#)) does not seem to influence their family formation plans. There are other exogenous factors that influence employment, further education and transitions in family formation. One possibility, for example, is that parents are reacting to the changes in educational and occupational opportunities and the rising of the legal age at marriage from 15 to 18 years to want their children to marry later and have smaller family sizes so that they will enjoy socioeconomic success. This may be the first cohort for whom somewhat greater opportunities are present and the changed family life course an option, so that their parents (who did not have these options themselves) are ready to accept social change that offers the possibility for the advancement of their children. Even so, the aspirations of the parents and of the young persons themselves for high levels of socioeconomic success are unlikely to be matched with actual socioeconomic experiences of this cohort as it reaches adulthood.

To sum up, we speculate that agency is not statistically significant because the youths still consider their parents' desires regarding their life course plans as an authority hence the high statically significance of household and community norms variables. There appear to be a disparity in the sense of perceptions of the available educational and occupational opportunities between the youth (who are experiencing the recent expansion of opportunities such as the growing educational enrollment, and their parents, who unfortunately grew up in an environment of highly limited opportunities. Therefore, in order to expand the real choices of pathways for social mobility in the area, other than merely constructing schools, social programmers may need to focus equally in addressing issues associated with youths' perception of opportunities available to them, that is, agency, which at times may be at odds with those of their parents and older cohorts who did not experience similar sets of opportunities.

References

- CSA. (2008). Summary and Statistical Report of the 2007 Population and Housing Census. Addis Ababa, December. www.csa.gov.et
- CSA and ORC Macro. (2006). *Ethiopia Demographic and Health Survey (EDHS) 2005*. CSA and ORC Macro, Addis Ababa, Ethiopia and Calverton, MD.
- Elder, G.H., Johnson, M.K., and Crosnoe, R. (2003). The Emergence and Development of Life Course Theory. In Mortimer, J.T., Shanahan, M.J. (eds.), *Handbook of the Life Course*. New York, NY, Kluwer Academic/Plenum Publishers.
- Herman, M.O., and Hogan, D. (2009). The Impact of Well-being and Agency, Conceptualized by the Capability Approach, on Human Capital Aspirations and Life Course Plans of Ethiopian youth. Paper presented at the annual meeting of the Population Association of America, New Orleans, LA.
- Honwana, A., and De Beck, F. (eds.). (2005). *Makers and Breakers: Children and Youth in Postcolonial Africa*. Oxford, James Currey.
- Lindstrom, D., and Herman, M.O. (2010). The Role of Poor Health Status, Risks of Debilitating Conditions in the Future, and Perceived Barriers to Occupational Attainment on the Educational Aspirations of Ethiopian Youth (Under Review).
- Loft, L.T., Spearin, C.E., Hogan, D., Belachew, T., Tessema, F., Gebremariam, A., and Lindstrom, D. (2010). Not Just Luck: The Emergence of a Merit-Based System of Stratification in Rural Ethiopian. Paper presented at the annual meeting of the Population Association of America, Dallas TX.
- Manda, S., and Meyer, R. (2005). Age at First Marriage in Malawi: A Bayesian Multilevel Analysis Using a Discrete Time-to-Event Model. *Journal of the Royal Statistical Society* 168(2): 439–455.
- Murphy, M. (2007). Is the Relationship between Fertility of Parents and Children Really Weak? *Social Biology* 46(1–2): 122–145.
- Policy Brief Number 10, Jimma Longitudinal Family Survey of Youth. (2007). *Decision-Making Autonomy among Adolescents in Jimma Zone*. Brown University, Population and Training Center and Jimma School of Public Health.
- Policy Brief Number 19, Jimma Longitudinal Family Survey of Youth. (2007). *Adolescent Attitudes about Male and Female Equality in Jimma Zone*. Brown University, Population and Training Center and Jimma School of Public Health.
- Ryder, N. (1965). The Cohort as a Concept in the Study of Social Change. *American Sociological Review* 30(6): 843–861.
- Sen, A.K. (1985). *Commodities and Capabilities*. Oxford, Elsevier Science Publishers.
- Sen, A.K. (1992). *Inequality Reexamined*. Cambridge, Cambridge University Press.
- Sen, A.K. (1993). Capability and Well-being. In Sen, A., and Nussbaum, M. (eds.), *Quality of Life*. Oxford, Oxford University Press.
- Sen, A.K. (1999). *Development as Freedom*. Oxford, Oxford University Press.
- Shanahan, M.J. (2000). Pathways to Adulthood in Changing Societies: Variability and Mechanisms in Life Course Perspective. *Annual Review of Sociology* 26: 667.

Part III
Health and Nutrition

Chapter 6

Women's Decision-Making Autonomy and Their Nutritional Status in Ethiopia: Socio-Cultural Linking of Two MDGs

Yibeltal Tebekaw

Abstract The main objective of this chapter is to explore the relationship between women's empowerment and their nutritional status in Ethiopia. We used a nationally representative data from the 2005 Ethiopian DHS and employed a logistic regression model for the multivariate analysis. The findings indicate that 28% of Ethiopian women were moderately and severely undernourished, but the level is three times higher in rural areas (32.1%) than urban areas (10.2%). Holding other main determinants constant, the odds of undernutrition among respondents with low decision-making autonomy is 54% (OR = 1.54) greater than those with high decision-making autonomy. Women living in a larger household size (5–8 persons) are 1.34 times (OR = 1.34) at higher risk of undernutrition than women with lower household size (1–4). We conclude that women's decision-making autonomy is an important determinant of their nutritional status. Women's educational attainment, employment status, and household property (wealth) are the major pathways through which the decision-making autonomy of women affects nutritional status. The need to incorporate women's empowerment as part of the national nutrition strategy as well as further indepth research are suggested in order to see the effects of the agro-ecological zones and cultural factors on women's nutritional status.

Keywords Women's decision-making autonomy · BMI · Undernourishment · Nutritional status

6.1 Introduction

Malnutrition¹ is a major public health and human development problem especially in developing countries. Worldwide, FAO estimates that, mainly as a result of high food prices, the number of chronically hungry people in the world rose by 75 million

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¹Malnutrition refers to any disorder of nutrition whether it is due to dietary deficiency, under-nutrition, excess diet, or over-nutrition (Britannica Student Encyclopedia, 2005).

in 2007 to reach 923 million (FAO, 2008). In 2004, 92% of all worldwide hunger related deaths were associated with chronic hunger and malnutrition (WFP, 2005). The global hunger index (GHI²) also shows that the world has made slow progress in reducing food insecurity since 1990. According to this report, Ethiopia is among the countries with very high GHI value (31) or among the countries with the lowest rank (82nd out of 88 countries). The recent advent of higher food prices has also uneven effects across countries of the world (Grebmer et al., 2008; FAO, 2008).

The status of women in a society is also one important determinant of the nutritional status of women, although not widely documented except the application of the concept in many demographic studies. Women's lower social status challenges their decision-making autonomy on the desired family size, health care-seeking behavior and the amounts and types of food fed to children and themselves and amount of time to spend on child-rearing (Haddad, 1999; Heaton and Forste, 2007). In Ethiopia, male dominance remains more pronounced in the society, public and private spheres. Women traditionally enjoy little independent decision-making on most individual and family or household issues, including the option to choose whether to get modern health services during illness, birth, reproductive health services and others (Bogalech and Mengistu, 2007).

This paper has combined two important global and national development issues, the rights of women towards decision-making and women's health in terms of nutrition. The study identifies the link between women's household decision-making autonomy and a public health and human development problem, i.e. malnutrition. The recommendation based on this finding will serve as a reference to design specific programs to solve the problem and ultimately this will contribute to the achievement of the third and fifth MDGs, i.e. women empowerment and gender equality and improving maternal health. This chapter identifies the nexus between some population and socioeconomic variables and health/nutrition. It also relates to thematic area of "Health and Nutrition" assuming that social change includes changes in the status of women in the society.

Although improvements in women's status is a key factor in women's health status in general and their nutritional status in particular, its relative importance is not clearly understood as many researchers fail to make distinction between the direct measures of women's decision-making autonomy and proxy indicators such as education, employment or household wealth status. In many earlier studies, most of the attention was directed to the impact of proxy variables on nutritional status of women through the proximate determinants of malnutrition i.e. disease and inadequate dietary intake. The various aspects of women's decision-making autonomy (DMA), including their access to and control over resources have often been overlooked. Therefore, this study tries to investigate the influence of women's empowerment on their nutritional status.

² GHI is a multidimensional approach to measuring hunger and malnutrition by combining three weighted indicators: the proportion of undernourished as a percentage of the population (the share of population with insufficient dietary energy intake); the prevalence of underweight in under-five children (weight loss & reduced growth); and the mortality rate of under-five children (fatal synergy between inadequate dietary intake and unhealthy environments).

The main limitation of the study is that it surveyed only women of reproductive ages, most of them mothers of one or more children (81%). The sample population in this study includes only those who are currently married (15–49), i.e. during the time of the data collection. Besides, the research findings might not be reflections of the current or most recent situation of the research questions. Pregnant women and lactating women were excluded because of fear of weight gain during pregnancy and the impact of lactation on maternal weight. DHS, being a cross-sectional data, it only allows observing associations and hence the relationship between the different independent variables and nutritional status (BMI) would contain biases of an unknown magnitude and direction or may not be seen as causal. Besides, the type of women's empowerment measured may be too crude to capture the type of empowerment that shapes nutritional status.

6.2 Background

Malnutrition and hunger have been found to increase the incidence and fatality rate of conditions that cause up to 80% of maternal death (Hall and Rosenthal, 1995). Women who are underweight prior to pregnancy and who gain little weight during pregnancy are at increased risk of complications and death (FAO, 2005). Malnourished mothers are more likely to give birth to low birth-weight babies who face a greatly increased risk of dying in infancy. They are also more likely to suffer from stunting during childhood which will greatly increase their own risk of dying during childbirth or giving birth to another generation of low birth-weight babies.

Underweight or chronic energy deficiency (CED) is common among women in developing countries. Evidence for maternal malnutrition indicates that between 5 and 20% of African women have a low BMI as a result of chronic hunger. In these countries there is some evidence that individuals with a BMI below 18.5 kg/m² show a progressive increase in mortality rates as well as increased risk of illness. Some 51.3% of women in Bangladesh were underweight, about half of them were moderately or severely underweight, with a BMI below 16.99 kg/m². In Africa all levels of underweight i.e. mild, moderate and severe underweight, are highly prevalent (ACC/SCN, 2000; Uthman and Aremu, 2007).

With reference to a recent cross-country study result, the prevalence of undernutrition is widespread in Burkina Faso, Niger, and Senegal, where approximately 20% of women are underweight (Bradley and Mishra, 2008). The proportions of women who are malnourished in selected sub-Saharan African countries for which a DHS was recently conducted range from 7 (Cameroon) to 37% (Eritrea). Ethiopia has one of the highest proportions of malnourished women. The percentage of women who are overweight or obese ranges from a low of 4% in Ethiopia to a high of 29% in Cameroon (Macro International Inc., 2008).

Women's role in food production, preparation and child care are critical foundations for the social and economic development of a community. However, efforts in this direction are hampered by malnutrition (Oniang'o and Mukudi, 2002). Nutrition is one of the essential determinants of maternal health; the right to adequate

food being one of the fundamental human rights preserved in many international documents (<http://www.pdhre.org/rights/food.html>).

Perhaps the greatest challenge that Ethiopia has faced today is that of food insecurity. This is mainly due to the poor agricultural technology, limited rural infrastructure; shrink in land size, non-availability of off-farm employment and other factors. Food insecurity incorporates low food intake, variable access to food, and vulnerability (Devereux, 2000).

The prevalence of undernutrition in Ethiopia is the highest in sub-Saharan Africa (Bradley and Mishra, 2008). EDHS (2000) report shows that over 30% of women were found to be chronically undernourished (BMI<18.5). Five years later the prevalence of malnutrition fell to 27%. The prevalence of overweight for 2005 was only 4%. This shows that underweight appears to be a more serious concern than overweight or obesity among Ethiopian women (CSA and ORC Macro, 2001, 2006; Macro International Inc., 2008). The highest level of women's malnutrition/undernutrition was in the Somali Region (44%) while the lowest level was in Addis Ababa (16%). According to the two DHS reports, rural women, very young women (15–19) and women with no or little education are much more affected by CED compared to their counterparts. Moreover, household economic status, employment status of women and decision-making autonomy on their income, age and marital status are important predictors of women's nutritional status (Woldemariam and Timotiows, 2002).

6.3 Objectives

The main objective of this research is to explore the relationship between women's empowerment and their nutritional status in Ethiopia. The research tries to answer three core questions: is women's autonomy an important determinant of women's nutritional status in Ethiopia; what has domestic violence to do with the nutritional status of women; and what are the pathways through which women's decision-making autonomy functions to influence their nutritional status?

6.4 Methodology

6.4.1 Description of the Sample

The source of data for this study was the Ethiopia Demographic and Health Survey 2005, the second national representative survey following the 2000 EDHS. In the EDHS 2005, a total of 14,717 eligible women were identified from the households and interviews were completed for 14,070 women with a response rate of about 96%. The size of the then currently married, non-pregnant and non-lactating women totals 3,159, of which only 1,627 had anthropometric measurements, and were thus considered in this study. The details of the methodology are mentioned in DHS 2005 report (CSA and ORC Macro, 2006).

6.4.2 Variable Identification

6.4.2.1 Dependent Variable

The dependent variable in this study is women's nutritional status which was measured in terms of Body Mass Index (BMI). In this study the dependent variable was dichotomized with 1 being less than 18.5 and 0 being 18.5 or above.

6.4.2.2 Description of Independent Variables

The principal independent variables of interest are those reflecting women's involvement (final says) in decisions regarding four domains of household life: making large household purchases, making day-to-day household purchases, deciding on respondent's own health care and visits to family/relatives. In addition, another indirect measure of women's empowerment (autonomy), women's attitude towards wife beating was also used. Besides, a few proxy measures were included in the analyses and type of residence was taken as a control variable to capture differences in women's life styles and living standards.

The 2005 EDHS collected information on direct measures of women's autonomy. In particular, questions were asked on women's participation in specific household decisions and in their attitudes towards wife beating. For each question in the survey, five options were presented as replies: (1) respondent alone, (2) respondent and husband/partner jointly, (3) respondent and other person in the household, (4) husband alone, (5) someone else. For statistical purposes, the response "respondent alone" has been renamed as "female autonomy" to show her exclusive autonomy; the responses "respondent and husband" and "respondent and other person" were categorized as "joint decision" and the responses husband alone and someone else³ are categorized as "husband's decision". Furthermore, an index was developed on women's decision-making autonomy. In doing so,

- women who have full/independent autonomy in at least two of the above four specified decision-making areas were assumed to have "high" decision-making power;
- women having the full autonomy in having their final say in only one of the four or those who make joint decision-making in all of the four decision-making areas were assumed to have "medium" decision-making power; and
- the remaining were assumed to have "low" decision-making power.

Women's educational attainment, employment,⁴ and household property possession were included as the proxy measures of women's autonomy. Household

³ From the frequency distribution, the value for the response "someone else" was nil and that is why husband's decision was used as a third category.

⁴ In line with the DHS data, employment status in this study reflects occupational status.

property possession was based on information related to household ownership of a number of consumer items (radio, television, refrigerator, bicycle, motor cycle and car). Based on the ownership of these six items, an index was developed to ease the statistical analysis and interpretation of results. For possession of one of these household items, a respondent received one point, otherwise zero points. The index took values between zero and five. Hence,

- those women who reported that they have none of these items were assumed to have “very low” household property possession;
- those who have only one of these items were assumed to have “low status”; and
- those women who reported that they have at least two of the above items were considered to have “medium or high” household property possession.

6.4.3 Statistical Analyses

To measure the impact of women’s decision-making autonomy on nutritional status, bivariate analyses and multivariate logistic regression models were employed, using SPSS (version 15.0) software.⁵

A series of three different models were fitted to investigate factors predicting the occurrence of women’s undernutrition among the then currently married non-lactating and non-pregnant women of reproductive age groups. The first model was fitted to see the effects of women’s characteristics and decision-making autonomy on women’s malnutrition without partner factors. The second model was fitted to see the effects of partner’s factors and women’s decision-making autonomy as determinants of women’s malnutrition. The last model was fitted to see the effects of socio-demographic variables on women’s malnutrition.

6.4.4 Ethical Issue

Since the analyses of this paper were confined to secondary data, primary ethical approval is not required.

6.5 Results

A total of 1,627 currently married non-pregnant and non-breastfeeding women of age groups 15–49 were considered in this study. About 21% of the respondents are found within the age group of 15–24, 25.2% within 25–34 and the majority (53.7%)

⁵ In this study only married, non-pregnant and non-lactating mothers were included to avoid the impact of weight gain during pregnancy on the interpretation of the statistical values.

within the age group of 35–49. The mean and median ages were 34 and 35 years respectively with a standard deviation of 9.6 years.

As to the regional distribution of respondents, most of the respondents (79.8%) represent three regions: Oromiya (33.0%), Amhara (28.2%) and SNNP (18.5%); while the remaining 20.2% represent the rest of the regions (6) and the two administrative councils (cities). Most of the respondents were illiterate (76.4%), 17.0% attended their primary education and 6.6% attended secondary and higher educations. More than 82% of the respondents reside in the rural part of Ethiopia. Occupationally, the majority of the respondents (61.8%) were unemployed during the time of data collection and among those working, more than half (57.6%) were engaged in agricultural activities. The study population was predominantly Orthodox Christian (49.5%) followed by Muslims (32.6%) and Protestants (14.6%). Respondents from other religions or beliefs represent 3.3% of the study population.

Ethiopian women are more affected by undernutrition than over nutrition. In this study, more than 28% of them were undernourished and about 6% were overweight (Overweight = 4.8% (BMI = 25.00–29.99 kg/m²) and obesity = 1.6% (BMI >= 30 kg/m²)). Among the undernourished ones, 3.5% were severely undernourished (BMI < 16.00 kg/m²), 4.6% moderately undernourished (BMI = 16.00–16.99 kg/m²) and the remaining 20.1% (BMI = 17.00–18.49 kg/m²) were mild undernourished.

Household property possession seems to have an inverse relation with women's CED. The proportion of women with CED is substantially high among those with very low household property possession (32.4%) and very low among those with medium or high household property possession (8.5%). Household size has positive relation with CED. Women having a household size of 1–4 were the least affected by undernutrition (21.6%) compared to those with household size of 5–8 (31.8%) and 9+ household sizes (35.4%) (Table 6.1).

Based on their level of participation in decision-making, women have been identified under three decision-making categories: those who have high decision-making power, medium decision-making power and those having low decision-making power. Many of the women were found to have medium decision-making power (56.3%) and comparable proportions of them have high (23.7%) and low (20.0%) decision-making power. As the result indicates, in all household level decision-making autonomy levels, women's decision-making autonomy has negative association with undernutrition. For this particular case, lowest magnitudes or prevalences of CED (20.8%) were observed when women are autonomous. In other words, highest prevalences of CED (38.9%) were observed when women are indecision. Tests of association (chi-square) indicate statistically significant association between women's autonomy and their BMI values at p-value < 0.001.

Figure 6.1 was designed to further explore the relationship between decision-making autonomy and CED. When women report that they have their final say in none of the decisions, they are more likely to have CED as compared to when they have final say in one or more of the specified decisions. The highest proportion (35.7%) of women with CED is observed when women reported that

Table 6.1 Mean BMI of respondents by socio-demographic characteristics

Characteristics	Body mass index			No. of cases	Chi-square value
	Mean	<18.5	≥18.5		
<i>Age groups</i>					
15–19	19.6	28.8	71.2	145	6.9
20–24	20.1	23.6	76.4	180	
25–29	20.5	25.9	74.1	249	
30–34	21.1	24.7	75.3	212	
35–39	20.1	27.5	72.5	259	
40–44	20.3	31.5	68.5	278	
45–49	20.2	31.9	68.1	304	
<i>Religion</i>					
Orthodox	20.6	25.5	74.5	744	15.7*
Protestant	20.3	22.8	77.2	210	
Muslim	19.9	34.3	65.7	626	
Others	20.3	35.4	64.6	47	
<i>Educational attainment</i>					
No education	19.8	32.6	67.4	1,124	52.1**
Primary education	21.1	18.7	81.3	321	
Secondary +	24.5	3.1	96.9	182	
<i>Place of Residence</i>					
Urban	23.1	10.2	89.8	487	97.9**
Rural	19.7	32.1	67.9	1,140	
<i>Employment status</i>					
Unemployed	20.1	31.7	68.3	1,000	32.0**
Professional/ Non-manual	22.2	12.5	87.5	287	
Agricultural	20.2	30.0	70.0	269	
Manual (skilled/unskilled)	20.8	16.0	84.0	64	
<i>HH property possession</i>					
Very low	19.7	32.4	67.6	797	33.2**
Low	20.8	26.2	73.8	507	
Medium/high	24.2	8.5	91.5	296	
<i>Household size</i>					
1–4	20.9	21.6	78.4	634	20.6**
5–8	20.2	31.8	68.2	841	
9+	19.9	35.4	64.6	152	
<i>Decision-making autonomy</i>					
High	21.3	20.8	79.2	505	32.6**
Medium	20.6	26.6	73.4	798	
Low	19.7	38.9	61.1	316	
<i>Wife beating</i>					
Not justified	21.6	22.3	77.7	356	4.9**
Justified	20.2	29.6	70.4	1,207	
<i>Total</i>	20.8	28.3	71.7	1,626	

Source: CSA and ORC Macro (2006), * $p < 0.01$ and ** $p < 0.001$; no symbol refers to no significant association.

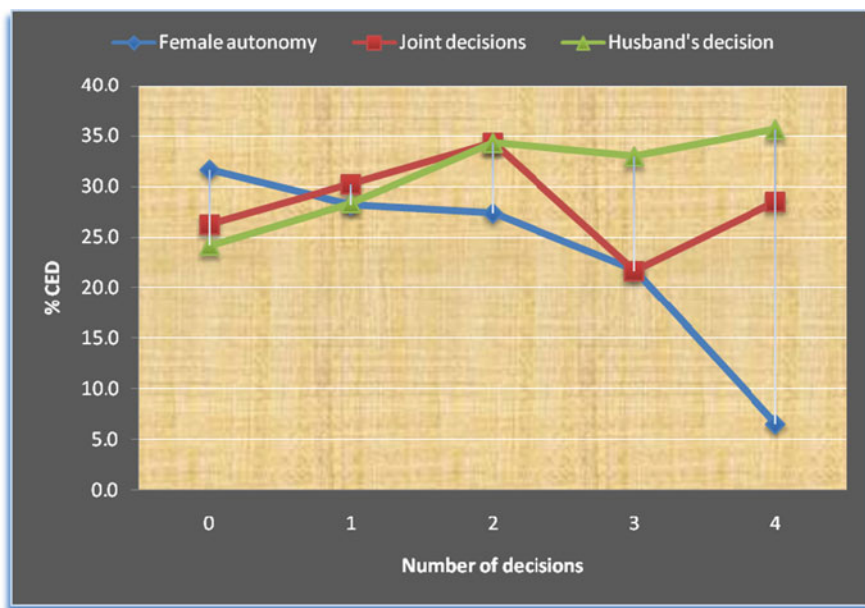


Fig. 6.1 Percentage of women with chronic energy deficiency (CED) by the number of decisions made by respondent, by husband and jointly (Source: CSA and ORC Macro, 2005, own calculation)

their partners have final say in all of the decisions but lowest proportion of women with CED (6.6%) is observed when women reported that they have final say in all of the decisions. The results suggest that women who have the highest level of autonomy are better-off in their nutritional status compared with women who have joint decisions and those who have no final say in any of the decisions. But there is a different scenario when women participate in joint decision-makings i.e. surprisingly, the proportion of undernourished women shows a progressive increment with an increase in the number of joint decisions up to a certain extent. Then it shows a rapid decline when women make joint decisions in most of the cases. This can be a good evidence to show the importance of DMA in Ethiopian women's nutritional status.

In this study, partner's educational attainment and occupational status are the other variables analyzed against women's undernutrition. The findings depict that women whose partner's were illiterate were the most affected by CED (32.9%) among others. On the other hand, those women whose partner's attained secondary or higher education were less affected (11.5%) than those with primary education (27.3%) (Chi-square p-value < 0.001).

With regards to husband's occupation⁶ and wife's CED, similar trends are seen like that of CED and women's occupation (employment status). Women who

⁶ The frequency of partners by their occupational status indicates that only 1.7% of them were not working during the time of data collection. This might lead to misinterpretation of results.

reported that their husbands were engaged in agricultural activities at the time of data collection were the most affected by CED (32.5%) among others, followed by those whose husband's were not working (26.9%). On the other hand, women who reported that their husbands were engaged in manual (skilled and unskilled) were the least affected by CED (11.1%). In general the descriptive analyses show that most of the socio-economic and demographic variables have statistically significant association with women's nutritional status. The most important determinants will be identified in the multivariate analyses.

6.5.1 Predictors of CED from Multivariate Models

In the previous section, we have seen the bivariate analysis and the presence of statistically significant association between the independent and dependent variables. As per the descriptive analysis of women's malnutrition and its differentials by socioeconomic variables, most of the covariates are interrelated. In this analysis technique, statistical associations are interpreted without controlling the effects of one variable over the other. To see the strength of correlation between the independent variables and the dependent variables, a multivariate analysis⁷ was applied and the findings are as follows.

6.5.1.1 Women's Characteristics as Determinants of Their Nutritional Status

Table 6.2 depicts a multivariate analysis of women's characteristics and women's CED. Here, initially the relationship between the number of decisions women made on the four household level decision-making areas and women's undernutrition was explored by fitting univariate and multivariate regression models.

The full model (in Table 6.2) includes women's characteristics along with their decision-making autonomy. In this model, female autonomy maintained its effect on women's undernutrition with more percentages than the univariate model when other variables are controlled. Clearly, women who have full decision-making autonomy in 2, 3 and 4 of the decision-making areas are less likely to be undernourished by about 34% (OR = 0.66, CI = 0.44, 0.97), 60% (OR = 0.40, CI = 0.22, 0.73) and 48% (OR = 0.52, CI = 0.28, 0.95) respectively than those with no full decision-making autonomy, and women who made joint decisions in 4 of the areas are less likely to be undernourished (OR = 0.56, 95 CI = 0.37, 0.84). But, female autonomy in only 1 of the decisions and women's joint decision-making in 1, 2 and 3 of the decisions showed no significant association on their nutritional status.

Household economic status, women's educational attainment and their employment status were also important factors affecting maternal undernutrition (Table 6.2). Women with medium or high household economic status are less likely to have CED (OR = 0.39, 95% CI = 0.23, 0.66). Compared to those with very low

⁷ The main objective of the multivariate analysis is to examine the relationship of each variable with women's malnutrition when the effects of other variables are held constant.

Table 6.2 Model I logistic regression of women's autonomy and their characteristics associated with women's undernutrition (odds ratio)

Variables	B	S.E.	Exp(B)	95.0% C.I. for EXP(B)	
				Lower	Upper
<i>Female autonomy</i>					
0 (comparison)					
1	-0.20	0.16	0.82	0.59	1.13
2	-0.42	0.20	0.66**	0.44	0.97
3	-0.92	0.31	0.40*	0.22	0.73
4	-0.66	0.31	0.52**	0.28	0.95
<i>Joint decisions</i>					
0 (comparison)					
1	0.00	0.19	1.00	0.69	1.44
2	-0.01	0.19	0.99	0.69	1.43
3	-0.33	0.22	0.72	0.47	1.10
4	-0.58	0.21	0.56**	0.37	0.84
<i>Household economic status</i>					
Very low (comparison)					
Low	-0.32	0.13	0.73**	0.56	0.94
Medium/high	-0.94	0.27	0.39*	0.23	0.66
<i>Educational attainment</i>					
No education (comparison)					
Primary education	-0.38	0.18	0.68**	0.48	0.96
Secondary +	-0.97	0.37	0.38**	0.18	0.78
<i>Employment status</i>					
Unemployed (comparison)					
Professional/non-manual	-0.44	0.21	0.65**	0.43	0.97
Agricultural	0.15	0.15	1.17	0.87	1.57
Manual	-0.14	0.35	0.87	0.44	1.70
Constant	-1.82	0.15	0.16		

Source: CSA and ORC Macro (2006), Own calculation * $p < 0.01$, ** $p < 0.005$.

household economic status, women with low household economic status are less affected by undernutrition (OR = 0.73; CI = 0.56, 0.94). Educational attainment is also negatively associated with women's CED. Those women with secondary or above educational levels (OR = 0.38) and with primary education (OR = 0.68; CI = 0.48, 0.96) are less likely to be undernourished than those with no education. On the other hand, women engaged in professional or non-manual activities are less likely to be undernourished by about 35% (OR = 0.65; CI = 0.43, 0.97) than the unemployed, but engagements in agricultural and manual activities showed no significant association with CED.

6.5.1.2 Women's Characteristics and Partner's Characteristics as Determinant Factors for Nutritional Status

Similar to Model-I, in Table 6.3, a multivariate regression model was fitted to explore the relationship between the three indices of women autonomy and

Table 6.3 Model II logistic regression of women's characteristics and husband's characteristics associated with women's chronic energy deficiency (CED) (odds ratio)

Variables	B	S.E.	Exp(B)	95.0% C.I. for EXP(B)	
				Lower	Upper
<i>Female autonomy</i>					
0 (comparison)					
1	0.00	0.16	1.00	0.74	1.36
2	-0.03	0.19	0.97	0.67	1.41
3	-0.49	0.31	0.61	0.34	1.11
4	-0.08	0.30	0.92	0.51	1.66
<i>Husband's decision</i>					
0 (comparison)					
1	0.11	0.17	1.11	0.80	1.55
2	0.28	0.18	1.32	0.93	1.88
3	0.49	0.23	1.63*	1.05	2.53
4	0.45	0.22	1.57*	1.02	2.42
<i>Household economic status</i>					
Very low (comparison)					
Low	-0.23	0.14	0.80	0.61	1.05
Medium/high	-0.60	0.30	0.55*	0.31	0.99
<i>Educational attainment</i>					
No education (comparison)					
Primary education	-0.37	0.20	0.69	0.47	1.02
Secondary +	-0.88	0.40	0.41*	0.19	0.91
<i>Employment status</i>					
Unemployed (comparison)					
Professional/Non-manual	-0.35	0.21	0.71	0.47	1.07
Agricultural	0.11	0.15	1.12	0.83	1.51
Manual	0.06	0.36	1.06	0.53	2.13
<i>Husband's education</i>					
No Education (comparison)					
Primary education	-0.07	0.16	0.93	0.68	1.28
Secondary +	0.10	0.25	1.10	0.68	1.79
<i>Husband's employment status</i>					
Unemployed (comparison)					
Professional/Non-manual	-0.35	0.52	0.70	0.26	1.93
Agricultural	0.19	0.49	1.21	0.46	3.17
Manual	-0.31	0.54	0.73	0.25	2.13
Constant	-1.55	0.20	0.21		

Source: CSA and ORC Macro (2006).

* $p < 0.05$, ** $p < 0.001$, own calculation.

undernutrition. The indices are based on the number of decisions a woman participated on the specified decision-making areas. Two categories were created for each of the four decision-making questions with five categories each. If the respondent says she has the final say, the response is coded as female autonomy (1 if woman has final say, 0 otherwise) and if decision is made by the husband alone, response

is coded as husband's decision (1 if husband has final say, 0 other wise). The scores for each of the indices range between 0 and 4.

The full Model-II (Table 6.3) depicts the effects of women's characteristics and partner's characteristics on women's undernutrition. In this model, husband's decision retained a strong positive association showing a higher odds of undernutrition when husbands have the final say in 3 (OR = 1.63; CI = 1.05, 2.53) and 4 (OR = 1.57; CI = 1.02, 2.42) of the decisions. Household economic status and women educational attainment were also important determinants of maternal undernutrition. Women with medium/high household economic status are less likely to have CED than those with very low household economic status (OR = 0.55, CI = 0.31, 0.99). Women with secondary or higher educational attainment are less likely to have CED than women with no education (OR = 0.41, CI = 0.19, 0.91), but no association was observed with women's employment status and other partner's characteristics.

6.5.1.3 Socioeconomic Determinants of Women's Nutritional Status

As can be seen in Table 6.4 (Model-III), the logistic regression selected region, household size, educational attainment and decision-making autonomy as risk factors for maternal undernutrition (CED) among the predictor variables. On the other hand, women's age; household economic status, place of residence, women's employment status, husband's employment and educational attainment seem to have no statistically significant effect on women's malnutrition.

Women from Gambela Region are 1.82 times (OR = 1.82; CI = 1.02, 3.25) more likely to be affected by CED compared to women from Tigray Region. There seems no association between the other regions and CED among the currently married non-lactating and non-pregnant women in Ethiopia.

Although the overall level of literacy among the respondents is low with more than 76% of them with no primary or secondary education (Table 6.1), still there seems to be some difference in the nutritional status of the illiterate and the relatively educated respondents. The decreased likelihood of being undernourished was observed for women with secondary and higher education. These women are less likely to be affected by CED by 44% (OR = 0.44, CI = 0.19, 0.99) as compared to the reference category. This might indicate that women with better education take care of their health and nutritional status or dietary intake than the less/uneducated ones.

After controlling the effects of other predictor variables, women's decision-making autonomy was found to be one of the most important determinant factors to explain maternal nutritional status. The odds of undernutrition among respondents with low decision-making autonomy is 54% (OR = 1.54; CI = 1.07, 2.21) more than those with high decision-making autonomy. In other words, women who have no or minimal autonomy to have their final says on their own health care, on large household purchases, daily household needs purchases and the freedom to visit their families or relatives are at a higher risk of being chronically malnourished (1.54 times) than those with better final says on the specified decision-making areas. The other risk factor for maternal undernutrition is the size of households. Women

Table 6.4 Model III logistic regression of variables associated with women's CED (odds ratio)

Variables	B	S.E.	Exp(B)	95.0% C.I. for EXP(B)		N
				Lower	Upper	
<i>Socio-demographic characteristics</i>						
<i>Region</i>						
Tigray (Comparison)						
Afar	-0.10	0.30	0.90	0.50	1.64	129
Amhara	-0.33	0.26	0.72	0.43	1.19	136
Oromiya	-0.09	0.26	0.92	0.55	1.53	229
Somali	-0.29	0.32	0.75	0.40	1.40	220
Ben-Gumuz	0.12	0.29	1.13	0.64	1.99	104
SNNP	-0.02	0.27	0.98	0.58	1.68	113
Gambella	0.60	0.30	1.82*	1.02	3.25	189
Harari	0.17	0.36	1.19	0.59	2.41	109
Addis Ababa	-0.08	0.42	0.92	0.40	2.11	114
Dire Dawa	0.25	0.36	1.29	0.64	2.60	169
<i>Household property possession</i>						
Very low (Comparison)						
Low	-0.15	0.14	0.86	0.65	1.14	507
Medium/high	-0.41	0.33	0.67	0.35	1.27	296
<i>Household size</i>						
1-4 (Comparison)						
5-8	0.30	0.14	1.34*	1.02	1.77	841
9+	0.09	0.24	1.09	0.68	1.74	152
<i>Place of residence</i>						
Urban (Comparison)						
Rural	0.50	0.28	1.65	0.94	2.88	1,140
<i>Women's characteristics</i>						
<i>Educational attainment</i>						
No Education (Comparison)						
Primary education	-0.40	0.21	0.67	0.45	1.01	321
Secondary +	-0.83	0.42	0.44*	0.19	0.99	182
<i>Employment status</i>						
Unemployed (Comparison)						
Professional/Non-manual	-0.33	0.22	0.72	0.47	1.10	287
Agricultural	0.16	0.17	1.18	0.85	1.63	269
Manual	0.12	0.37	1.13	0.55	2.31	64
<i>Women's Autonomy in Decision-making/women status</i>						
<i>Decision-making autonomy</i>						
High (Comparison)						
Medium	0.16	0.15	1.18	0.87	1.59	798
Low	0.43	0.18	1.54*	1.07	2.21	316

Table 6.4 (continued)

Variables	B	S.E.	Exp(B)	95.0% C.I. for EXP(B)		N
				Lower	Upper	
<i>Wife beating</i>						
Not justified (Comparison)						356
Justified	0.07	0.18	1.08	0.76	1.52	1,207
<i>Husband's characteristics</i>						
<i>Educational attainment</i>						
No education (Comparison)						906
Primary education	-0.17	0.17	0.84	0.60	1.18	329
Secondary and above	0.00	0.26	1.00	0.60	1.65	384
<i>Employment status</i>						
Unemployed (Comparison)						27
Professional/Non- manual	-0.44	0.53	0.64	0.23	1.83	375
Agricultural	-0.16	0.51	0.85	0.31	2.31	1,044
Manual	-0.29	0.56	0.75	0.25	2.25	165
Intercept	-1.52	0.20	0.22			

Source: CSA and ORC Macro (2006), author's calculation.

* $p < 0.05$.

living in a household size of 5–8 persons are 1.34 times (OR = 1.34; CI = 1.02, 1.77) at higher risk of being affected by CED than women with lower household size (1–4).

Household economic status which showed significant association with maternal undernutrition in models I and II didn't maintain its effect on undernutrition when other socio-demographic variables are added in the model. Many of the variables in the model: age of women, type of place of residence, domestic violence/attitude of women towards wife beating, household economic status and husband's characteristics show no significant association with women's undernutrition and this might be due to unidentified different factors like the effect of an uncontrolled third variable.

6.6 Discussion

Anthropometric, socioeconomic and demographic data from 1,627 women living in Ethiopia has provided the opportunity to analyze the distribution of CED in a relatively recent year (2005), and within a wide range of Regional States and City Administrations. Nationwide probabilistic samples, large sample sizes, highly standardized data collection procedures, and appropriate multivariate analyses – all favor the internal and external validity of study findings. The present study tried

to answer the stated research questions by examining whether women's autonomy is an important determinant of their nutritional status; if domestic violence in the context of women's attitude towards wife beating determines undernutrition; and the possible pathways through which these variables influence women's nutritional status.

Women from Benishangul Gumuz and Gambela regions were affected by CED more than any other region in Ethiopia, followed by Afar and Tigray regions. Though the decision-making power of the women in Benishangul Gumuz and Gambella was not the lowest, women of these regions have experienced the highest prevalence of undernutrition. These findings are in line with Woldemariam and Timotiws (2002) reports, in which they indicated that Gambela has the highest percentage of undernourished women similar to Somali, Afar and Benishangul Gumuz regions (CSA and ORC Macro, 2006). The possible reasons for these variations could be many including socioeconomic, demographic, cultural and environmental factors. Difference in the proportion of educated women and lack of access to health services might be among the fundamental ones. Even in the presence of good health service coverage, among less educated population there can be less health care utilization rate. Recent trends in population growth in these two regions might have some effect on the food supply or food security of the inhabitants. According to the 2007 Ethiopian Population and Housing Census statistical report, highest population growth rates were recorded for these two regions (CSA, 2008).

The difference in ecological zones of each region can also be considered here. The regions with the higher proportion of women with undernutrition are the lowlands. These areas are more vulnerable to communicable diseases/vector borne diseases like malaria which are immediate determinants of nutritional status. The agricultural system, breaking down of land into small pieces with increase in population size, types of crops produced and their dietary styles may also matter. Study findings by Tsegaye et al. (2003) indicated that women living in lowlands are more malnourished than the highlanders. The lower BMI levels in Amhara and Tigray regions may be because of low productivity of arable lands, following land degradation in need of large yields from smaller areas which in turn are attributed to high population density in the highlands. The final says of women on agricultural products, unlike their active participation in the productivity, also matters in their access to resources. Further studies can bring more scientific evidences on disparities between women's nutritional status and socio-cultural and demographic variables.

Regarding women's attitude towards justification of wife beating by a husband, a very high proportion (82.0%) of them reported that a husband is justified to beat his wife in at least one of the five reasons. This is much higher than a similar study finding from Zimbabwe where only 53% believed that wife beating was justified in at least one of the five situations (Hindin, 2003). This result indicates that the status of women in the society is much lower as compared to the status of men. Nevertheless, there seems no association in the multivariate analysis between women's nutritional status and their attitude towards wife beating unlike the bivariate result. An uncontrolled third variable might be confounding these results or there might not

be any true association between attitude of women towards wife beating and their nutritional status.

As to women's DMA, in the bivariate analysis, women have more autonomy on daily household needs purchases than on their health care, large household purchases or visits to family/relatives. This is an indication that women are not involved in big and important decisions and hence certain dimensions of women's autonomy may be more important to nutritional outcomes than others. For example, in the multivariate part, women who are fully autonomous and those who make joint decisions showed a negative association with women's undernutrition. These findings accentuate the importance of examining the different dimensions of women's autonomy separately in order to understand which factors most affect the nutritional status of women.

As to the DMA-nutritional status nexus, women who have no final says on the specified situations are more affected by CED as compared to those who have the autonomy or who participate in joint decision-making practices. Based on the autonomy index, women's undernutrition was found to be inversely associated with decision-making autonomy. Women with high decision-making autonomy were the least affected and those with low decision-making autonomy were the most affected by CED.

The relationship between educational status and maternal undernutrition, regardless of socio-demographic characteristics like, place of region, age, religion, and place of residence, suggests that women with secondary or higher education are less affected by CED than the relatively less-educated women in both the bivariate and the multivariate analyses. A comparative study on maternal malnutrition in ten sub-Saharan African countries and a study in the SNNPR of Ethiopia support this finding: the higher the level of education the lower the proportion of women with CED (Edilberto, 1997; Teller and Gugsu, 2000; Tsegaye et al., 2003). A similar study finding in rural Bangladesh indicates that women with at least primary education have more probability of becoming nourished compared to women with no education (Rahman and Nasrin, 2009). This might be because education may enable women to make independent decisions and to have greater access to household resources or income control and health care that are important to maternal nutrition. Therefore, education plays a significant role by influencing health-seeking behaviors, attitudes and practices towards appropriate feeding and care.

Women's employment status was also found to have an important influence on women's undernutrition. The bivariate analysis shows that unemployed women (31.7%) and those engaged in agriculture sector (30.0%) are the most malnourished. When agricultural products are sold in the market place, the income earned may be used to purchase goods and services that contribute to nutritional changes. The lower the income from selling agricultural products is the lower it is to purchase goods and services.

In actual terms, malnutrition is not simply caused by a lack of food overall, but by a lack of high-quality foods such as whole grains, fiber, fruits, and vegetables (IFPRI, 2004). The multivariate part identified that women engaged in professional and/or non-manual economic activities are less affected by undernutrition.

The women engaged in professional/non-manual activities are mainly educated ones which can take care of their health and nutrition with better decision-making autonomy.

6.7 Conclusion and Policy Implications

Understanding the relative importance of the various determinants of malnutrition among Ethiopian women is the key to designing evidence-based effective programs to address women's malnutrition. The proportion of malnourished women vary by place of region, type of place of residence, household size, partner's educational attainment and employment status with statistically significant chi-square values in the bivariate analysis. Rural women, women with high household size, women from the lowlands of Ethiopia, women whose partners were relatively less educated or with no education and those whose partners are unemployed and engaged in agricultural activities were at high risk of being undernourished than the other counterparts.

The multivariate analysis adds to our knowledge on issues related to disparities of women's empowerment in malnutrition among women in Ethiopia. The magnitude of the gap described in this study gives baseline information that will help programmers, researchers and policymakers in the management of malnutrition among underpowered women. On average, the nutritional status of women with very low household economic status, with relatively lower educational attainment and with lower decision-making autonomy is poorer than those with better economic status, educational attainment and empowerment. The present study is important in that it documented women's empowerment as an important determinant of women's undernutrition, a major research question that was theoretically stated prior to these findings. In line with this the research has identified that women's educational attainment, employment status, and household economic status are the most important proxy measures of women's undernutrition. In other words, these are the major pathways through which the decision-making autonomy of women affects their nutritional status or BMI levels.

Unless the obstacles that prevent women from practicing their potential are removed including through rural development, it will be difficult if not impossible to avoid malnutrition and achieve intended national development goals. Improvements in women's nutritional status can only be seen when the needy are not exposed to the risks of CED. On the basis of the findings, the following recommendations are forwarded:

Ensuring women's decision-making role at household levels should be an important part of the national nutrition strategy. The findings also show that individual characteristics are important predictors of women's empowerment. But since empowerment is a multi-dimensional phenomenon, with women relatively empowered in some spheres but not in others, further research might play a major role in identifying whether community or individual characteristics are better predictors of women's empowerment in their surroundings.

Design and implement programs addressing the nutritional needs of women especially those in the most affected regions and those with lower household economic status. The interventions could be continuous nutritional health promotion and education as part of maternal health care programs. Education on nutrition and health can stimulate demand for more or different foodstuffs, health services, or disease-prevention measures. Not to limit the effect of education or to see outcomes, there should be the means and opportunities to act on that knowledge as well.

To curb the negative effect of large household size on women's nutritional status, one of the critical priorities should be the continuation of the intensive national family planning program.

Finally, further research is suggested to investigate the effects of agro-ecological zones or climatic variations, domestic violence against women and other socio-cultural factors on women's malnutrition.

References

- Administrative Committee on Coordination/Subcommittee on Nutrition (ACC/SCN). (2000). *Fourth Report on the World Nutrition Situation*. Geneva, ACC/SCN in collaboration with IFPRI.
- Bogalech, A. and Mengistu, A. (2007). *Women's Empowerment in Ethiopia: New Solutions to Ancient Problems*. Ethiopia, Pathfinder International.
- Bradley, S.E.K. and Mishra, V. (2008). *HIV and Nutrition among Women in Sub-Saharan Africa*, DHS Analytical Studies No. 16. Calverton, MD, Macro International Inc.
- Britannica Student Encyclopedia. (2005). *Malnutrition*, Encyclopedia: Britannica Premium Service, <http://www.britannica.com/ebi/article?tocId=9275642>.
- Central Statistical Agency (CSA) and ORC Macro. (2001). *Ethiopia Demographic and Health Survey 2000*. Addis Ababa, Ethiopia and Calverton, MD, CSA and ORC Macro.
- Central Statistical Agency (CSA) and ORC Macro. (2006). *Ethiopia Demographic and Health Survey 2005*. Addis Ababa, Ethiopia and Calverton, MD, CSA and ORC Macro.
- Devereux, S. (2000). *Food Insecurity in Ethiopia: A discussion paper for DFID*. <http://cram-forum.jrc.it/Shared%20Documents/Food%20Insecurity%20in%20Ethiopia.pdf>
- Edilberto, L. (1997). *Maternal nutritional status. DHS Comparative Studies No. 24*. Calverton, MD, USA: Macro International Inc.
- Federal Democratic and Republic of Ethiopia Population Census Commission (2008). Summary and Statistical Report of the 2007. Population and Housing Census: Population size by age and sex. December 2008, Addis Ababa.
- Food and Agriculture Organization of the United Nations. (2005). *The state of insecurity in the world 2005*. Rome: Food and Agriculture Organization of the United Nations, 2005. <ftp://ftp.fao.org/docrep/fao/008/a0200e/a0200e.pdf>
- Food and Agriculture Organization of the United Nations. (2008). *The State of Food Insecurity in the World 2008: High Food Prices and Food Security-Threats and Opportunities*. Rome, Italy, Food and Agriculture Organization of the United Nations.
- Grebmer, K.V., Fritschel, H., Nestorova, B. et al. (2008). Global Hunger Index. *The Challenge of Hunger 2008*. Bonn, Washington DC, Dublin.
- Haddad, L. (1999). Women's Status: Levels, Determinants, Consequences for Malnutrition, Interventions, and Policy. *Asian Development Review* 17(1, 2): 96–131, Asian Development Bank.
- Hall, J.A. and Rosenthal, R. (1995). Interpreting and Evaluating Meta-analysis. *Evaluation for Health Professionals* 18(4): 393–407.

- Heaton, T.B. and Forste, R. (2007). Domestic Violence, Couple Interaction and Children's Health in Latin America. *Journal of Family Violence* 23: 183–193, Springer Science + Business Media, LLC 2007.
- Hindin, M.J. (2003). *Understanding Women's Attitudes Towards Wife Beating in Zimbabwe*. Bulletin of the World Health Organization 2003.
- International Food Policy Research Institute. (2004). The Changing Face of Malnutrition. IFPRI Forum. Ed. Uday Mohan. Published by IFPRI and its 2020 Vision Initiative. Washington DC, USA.
- Macro International Inc. (2008). *Nutrition of Young Children and Women, Ethiopia 2005*. Calverton, MD: Macro International Inc.
- Oniang'o, R. and Mukudi, E. (2002). *Nutrition and Gender*. In *Nutrition: A Foundation for Development*. Geneva, ACC/SCN.
- Rahman, M.M. and Nasrin, S.O. (2009). Mothers Nutritional Status in an Impoverished Nation: Evidence from Rural Bangladesh. *The Internet Journal of Nutrition and Wellness* 7, 1.
- Teller, C. and Gugsu Yimer. (2000). Levels and Determinants of Malnutrition in Adolescent and Adult Women in Southern Ethiopia. *Ethiopian Journal of Health Development* 14(1): 57–66.
- Tsegaye Demissie, Yared Mekonen, and Jemal Haider, (2003). Agroecological Comparison of Levels and Correlates of Nutritional Status of Women. *Ethiopian Journal of Health Development* 17(3): 189–196, <http://ejhd.uib.no/ejhdv17-no3/6Tsegaye%20Demissie.pdf>.
- Uthman, O.A. and Aremu, O. (2007). *Malnutrition Among Women in Sub-Saharan Africa: Rural-Urban Disparity*. *Rural and Remote Health* 8:931. (Online source <http://www.rh.org.au>)
- Woldemariam Girma and Timotiows Genebo. (2002). *Determinants of Nutritional Status of Women and Children in Ethiopia*. Calverton, MD, ORC Macro.
- World Food Program. (2005). *Emergency Food Security Assessment Handbook*. Rome, WFP.

Chapter 7

Maternal Mortality and Human Development in Ethiopia: The Unacceptably Low Maternal Health Service Utilization and Its Multiple Determinants

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Abstract We explore the trends in maternal mortality and health service utilization, and the effects of women's education, place of residence and age at marriage on the latter by reviewing national representative data of Demographic and Health Surveys and other related research. The DHS surveys in 2000 and 2005 show that, while the maternal mortality ratio changed from 871 to 673 deaths per 100,000 live births, this decline is not statistically significant. The maternal mortality ratio further declined somewhat to 590 deaths per 100,000 live births in 2008. Moreover, antenatal care, skilled delivery and postnatal care service utilization did not increase in this 5-year period and remained the lowest in Africa. Maternal mortality is the only health and education MDG that may not be on track for the year 2015 in Ethiopia. Efforts to prevent maternal deaths require a broader range of sectors (beyond health) and partners (beyond government), such as: men as well as women, international organizations, governments, civil society and the media. All are important in expanding health services as well as improving the status of women through improving their educational status.

Keywords Maternal health · Women education · Service utilization · Early marriage · MDGs · Maternal mortality · Status of women · Ethiopia

7.1 Introduction

Complications of pregnancy and childbirth are the leading cause of death and disability among women of reproductive age in less developed countries. Maternal mortality in developing countries has been described as a neglected tragedy in terms of the magnitude of the problem. It is also a tragedy in terms of equity and social justice. Globally, at least 585,000 women die each year from complications of pregnancy and childbirth. Differences in societal, cultural and economic factors

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and barriers to access are reflected in the significant variance of maternal mortality indicators among the developed and developing regions. The measures of maternal mortality show that the problem is very severe particularly in sub-Saharan African region compared to other regions of the world and progress towards decreasing maternal mortality is extremely slow (WHO et al., 2007). The maternal death rate in some countries of East Asia and Latin America has decreased by as much as 50%. However; in Africa and South Asia, the complications remain the most frequent cause of death for women. The risk of a woman dying as a result of pregnancy or childbirth during her lifetime is about 1 in 7 in Niger, 1 in 27 in Ethiopia and about 1 in 48,000 in Ireland (WHO et al., 2007).

The death of a mother has serious health, demographic, economic and social consequences. The welfare of children and family is heavily compromised when a mother dies. The family and the society lose the immense social and economic contributions of young and productive women.

7.2 The Ethiopian Situation in Global Context

Ethiopia is sub-Saharan Africa's second most populous country. It is a young nation: 45% of the population is below the age of 15 years (CSA, 2010). Marriage is the principal indicator of women's exposure to the risk of pregnancy, which comes very early in Ethiopia. The median age at first marriage among women aged 25–49 is 16.1 years (CSA and ORC Macro, 2006). Girls who are married are expected to bear children as soon as possible, contributing to the epidemic of pregnancy complications. Despite Ethiopian women's integral social, economic, and familial roles, their health status remains among the poorest in the world. Ethiopia's maternal mortality ratio is among the highest by the developing countries standard, and continues at an unacceptably high level.

The most recent research findings on maternal mortality, using the most up-to-date modeling and triangulation of data sources (Hogan et al., 2010) indicated that, more than 50% of all maternal deaths were in only six countries in 2008 (India, Nigeria, Pakistan, Afghanistan, Ethiopia, and the Democratic Republic of the Congo). The maternal mortality ratio of Ethiopia was 1,061 (with uncertainty bound range of 665–1,639 in 1980; 968) (range of 600–1,507) in 1990; 937 (range 543–1,537) in 2000, and further declined to 590 (range of 358–932) in 2008. These estimates are based on the census, surveys (DHS) and published work reporting population based studies on maternal mortality – national or sub national (Hogan et al., 2010). These new findings differ little from the two Ethiopian DHSs, it was 871 and 673 per 100,000 live births in 2000 and 2005, respectively, and not a statistically significant decline (CSA and ORC Macro, 2006).¹ Although maternal mortality records vary widely by source and are highly controversial, the best

¹The other source of information on maternal mortality trend indicated that the maternal mortality ratio is 470 deaths per 100,000 live births in 2008 in Ethiopian. (WHO et al., 2010).

estimates for Ethiopia suggest that 24,000² women and girls die each year due to pregnancy-related complications (FGI, 2006). Maternal deaths constituted about a quarter (25.3%) in 2000 and a fifth (21.3%) in 2005 of all adult female deaths aged 15–49, respectively (CSA and ORC Macro, 2001 and 2006).

Some of the direct medical causes of maternal mortality include hemorrhage or bleeding, sepsis/infection, complications from abortion, hypertensive disorders, and obstructed labor. In Africa, hemorrhage, sepsis and the impact of HIV/AIDS contribute significantly to maternal deaths. In the region, 33.9% of deaths are caused by hemorrhage, 9.7% sepsis/infection 9.1% hypertensive disorders and 6.2% HIV/AIDS (Khan et al., 2006).

The tragedy, as well as the opportunity, is that most of these deaths can be prevented with cost-effective health services, alongside increased women's education. Reducing maternal mortality and disability depend on identifying and improving those services that are critical to the health of Ethiopia's women and girls, including antenatal care, emergency obstetric care, adequate postpartum care, and services for family planning.

In Ethiopia, although physical availability of primary health care services has increased substantially in the recent years, with potential health service coverage³ reported around 90%, health service utilization is unacceptably low, with a per-capita utilization of around 0.32 visits per person per year. The gap between health service availability and utilization shows that the physical increase in services does not guarantee adequate utilization. Hence, improving health will require increasing the demand for preventive and promotive services, particularly in the critical maternal health services.

Moreover, the contraceptive prevalence rate among currently married couples for modern methods is one of the lowest in the world, even in comparison to neighboring countries. It did, though, increase from 6.3 in 2000 to 13.9% in 2005 among married women. During the same time, unmet need for family planning/contraception was 34% (CSA and ORC Macro, 2006).

Ethiopia ranks by far lowest in antenatal care (ANC) coverage and skilled attendance at birth when compared with other sub-Saharan African countries. About nine in ten women received ANC service from a health professional in Rwanda, Malawi, Ghana, Lesotho, Kenya and Senegal compared with less than three in ten Ethiopian women (ORC Macro, 2007). The percentage of births delivered by a health professional is 10 times higher in the Cameroon (62%) than in Ethiopia (6%). Similarly, the proportion of births delivered in a health facility is more than 10 times higher in Senegal (62%), Malawi (57%) and Lesotho (52%), than in Ethiopia (5%) (ORC Macro, 2007).

²The sources used to calculate these estimates are the 2000 Ethiopia DHS and the 1995 WHO/UNICEF/UNFPA estimates of maternal mortality.

³Population covered in percentage based on the existing health centers and health posts in a 10 km radius catchment area.

However, the Federal Ministry of Health (FMoH) has made a strong commitment to the reduction of maternal mortality. FMoH has been utilizing the Health Services Development Programme (HSDP III) strategies to address the issues. It has established ambitious targets for the year 2009–2010 for ANC (80%), Skilled Attendant⁴ (32%) and Postnatal Care (31%), and is monitoring its progress through an improved health information system. As of the second year of the HSDP III (fiscal year 2007–2008), the FMoH service statistics reports that there has already been remarkable progress towards reaching the above targets: ANC reached 59%, skilled attendance at birth reached 20%, and postnatal care coverage 25% (MoH, 2009).

A baseline survey for “The Last 10 km” (L10K) Project, which was carried out in late 2008 and early 2009 in somewhat more accessible areas of the four major regions of Ethiopia (Amhara, Oromia, SNNP and Tigray), found that over half of the women (54%) received one ANC visit and 9.2% delivered at health institutions for their most recent birth in the year preceding the survey (JSI, 2009).

In Ethiopia, pregnancy, poor health and nutritional status, communicable diseases, high workload, early marriage, high fertility, inadequate access to and underutilization of health service and the low status of women in the society are among the many underlying causes of maternal mortality (MoH, 1996). This chapter explores women’s education, age at first marriage and place of residence as major reasons for low maternal service utilization which hinders the efforts in reducing maternal mortality and morbidity in the country. Articles published in international and national journals and other relevant studies on the themes of maternal health care service utilization and human development were reviewed. Recommendation and policy implications are forwarded so that policy makers and implementers will give due attention not only to the medical but also to the underlying causes (women’s education and early marriage) of maternal mortality in the country.

7.3 Background

7.3.1 Definitions of Maternal Mortality

The Tenth Revision of the International Classification of Diseases (ICD-10) defines a maternal death as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (WHO, 2004).

The 42-day limit is somewhat arbitrary, and in recognition of the fact that modern life-sustaining procedures and technologies can prolong dying and delay death, ICD-10 introduced a new category, namely the *late maternal death*, which is defined

⁴A skilled attendant is: an accredited health professional – midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postpartum period and in the identification, management and referral of complications in women and newborns (Herschderfer, 2004).

as the *death of a woman from direct or indirect obstetric causes more than 42 days but less than 1 year after termination of pregnancy* (WHO, 2004). *Direct obstetric deaths* are those resulting from obstetric complications of the pregnant state (pregnancy, labor and puerperium) from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above. *Indirect obstetric deaths* are those resulting from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes, but was aggravated by physiologic effects of pregnancy (WHO, 2004).

The drawback of the above definition is that maternal deaths may not be so classified because the precise cause of death cannot be given even though the fact of the woman having been pregnant is known. To facilitate the identification of maternal deaths in circumstances where cause of death attribution is inadequate, ICD-10 introduced another category, that of *pregnancy-related death*, which is defined as: *the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death*.

7.3.2 Causes of Maternal Deaths

Since the launching of Safe Motherhood Initiative in 1987, knowledge of the causes of maternal disability and death and of the appropriate interventions in poor settings has increased considerably. Health and reproductive health behavior, access and utilization of services and status of women are of the major determinants.

Women's poor health and nutrition before pregnancy, inadequate, inaccessible and unaffordable health care during childbirth are the factors contributing to the high level of maternal death and disability. Socio-economic and cultural realities also make a lot of contributions i.e. poverty, women's unequal access to resources including health care, food and preventive services, their heavy physical workload, which often continues throughout pregnancy, and their lack of decision-making power in families, communities and societies. According to Shane (1997) these factors can broadly be classified into four categories (as cited in Habtamu, 2001).

7.3.2.1 Medical Factors

As it is discussed in Section 7.3.1 of this chapter, pregnancy related pathogenic causes can be divided into two major groups: "Direct causes" and "Indirect causes". More than 80% of maternal deaths worldwide are due to five direct medical causes: ante partum and postpartum hemorrhage/severe bleeding, sepsis, unsafe abortion, obstructed labor and hypertensive disease of pregnancy. Indirect causes of maternal mortality cause about 20% of the maternal deaths (WHO et al., 2007). One of the most significant of these indirect causes is anemia. Other indirect causes include malaria, hepatitis, heart disease and increasingly in some settings HIV/AIDS.

A study conducted in Adama, Ethiopia, has found out the major causes of death, based on records covering a 7-year period from 1993 to 2000. There were 16,279 women admitted for maternal cases in Adama hospital during the period. The study

has shown, among women who suffered from severe bleeding (hemorrhage), 23.1% died. Of women who had pregnancy and childbirth related infection, 17% died. Of the total of women, 250, tested for anemia 19.2% died. Among the women included in the study there were 756 women who experienced obstructed labor, among whom 8.1% died. About 14.5% of women who had malaria died. 4.4% of women died due to other direct causes such as ectopic pregnancy and rupture of uterus (Habtamu, 2001).

7.3.2.2 Health Service Factors

The World Health Organization (WHO) identifies four fundamental strategies that support safe motherhood initiative: antenatal and postnatal care, family planning service, safe and clean delivery service and essential obstetric care. These are the four main health service factors that determine maternal mortality. Most women in Ethiopia do not have health facilities where these services are provided within their immediate neighborhood. The same study in Adama indicated that among mothers who came from somewhere else out of Adama town, as large as 6.4% died which by far is greater than the percentage, 0.5 that died among those living within Adama town (Habtamu, 2001). This clearly suggested that availability of facilities within the neighborhood where women can have prompt and easy access to proper and quality service can significantly reduce maternal mortality.

7.3.2.3 Demographic Factors

Some women are more likely than others to suffer from pregnancy related complications because of their age, the number of times they have been pregnant and problems they have had from pregnancy. Different studies have found out that older women aged above 35 years, primiparae (parity = 0) and grand multiparae (parity > 4) are more likely to experience a complication during pregnancy. Young women, whose pelvis is not fully developed, are more likely to have obstructed labor, as a result maternal death and disability could arise (as cited in Habtamu, 2001).

7.3.2.4 Economic and Socio-Cultural Factors

Adverse socio-economic conditions and some cultural practices that are unfavorable to good health can cause maternal death. Social factors, particularly those related to a woman's perceived role in the society such as education and level of decision-making have impact on her health seeking behavior and utilization. Poor women are more likely to die due to maternal cases as they make less use of skilled care during pregnancy and childbirth and their access to referral service during obstetric emergencies is limited by transport and other related costs. A housing probability survey in which 9,315 women were interviewed was conducted in 1983 to detect the incidence of maternal mortality in Addis Ababa, Ethiopia. Maternal mortality

for the 2-year period from 11 September 1981 was 350/100,000 live births (excluding abortions). A logistic regression analysis selected antenatal care, occupation and income as determining factors for maternal mortality, after adjusting for age, parity, education and marital status (Kwast et al. 1988). Social, cultural, and personal reasons support the persistence of some traditional practices that can negatively affect women's health outcomes, such as female genital cutting and early marriage. All these factors have a greater contribution to the very low maternal health care service utilization in Ethiopia.

7.3.3 Measuring Maternal Mortality

The number of maternal deaths in a population is essentially the product of two factors: the risk of mortality associated with a single pregnancy or a single live birth, and the number of pregnancies or births that are experienced by women of reproductive age. The maternal mortality ratio (MMR) is defined as the number of maternal deaths in a population divided by the number of live births; thus, it depicts the risk of maternal death relative to the number of live births. The ratio is considered by authoritative sources to be “a more useful measure of maternal mortality since it measures the obstetric risk associated with each live birth” (CSA/ORC Macro, 2006: 233). By contrast, the maternal mortality rate (MMRate) is defined as the number of maternal deaths in a population divided by the number of women of reproductive age; thus, it reflects not only the risk of maternal death per pregnancy or per birth (live birth or stillbirth), but also the level of fertility in the population. In addition to the MMR and the MMRate, it is possible to calculate the adult lifetime risk of maternal mortality for women in the population (WHO et al., 2007).

However, even in countries with high levels of maternal mortality, a maternal death is a relatively rare event. Therefore the measurement requires very large samples, and sampling errors are large. Deaths often do not take place in health institutions and the status of pregnancy may not have been identified when a woman dies. Hence, changes in maternal health status are often measured by intermediate or process indicators. The process indicators are generally linked to utilization of maternal health services and changes in these indicators are expected to bring change in maternal mortality indicators in the long run. Thus, maternal health service utilization and women's residence, age at marriage and educational status is the focus of this chapter.

7.3.4 Models and Factors Determining Maternal Health Service Utilization in Ethiopia

Several different models or frameworks exist to help program managers and communities understand the determinants of maternal mortality. The existence of skilled

care does not guarantee its use. The “Three Delays Model” identifies the points at which delays can occur in the management of obstetric complications at the community and facility level and try to link them to other factors. *The first delay* (the delay in deciding to seek care) may relate to a number of factors, including the lack of knowledge about obstetric danger signs, community perception of poor quality facility care, or the lack of health services availability which increases the opportunity costs and therefore reduces the likelihood of care seeking. *The second delay* (the delay in identifying and reaching a medical facility) relates to the geographical proximity and accessibility of health services, and includes factors such as the availability of transportation. *The third delay* (delay in receiving appropriate care at health facilities) is related to factors in the health facility, including the availability of staff, equipment, and resources as well as the quality and (in some cases) the cost of services. Diminishing these delays requires policy commitment and action at all levels, but is feasible even in low resource settings.

In Ethiopia lack of health services, low utilization of health services, high fertility, harmful traditional practices such as early marriage and female genital mutilation are among the likely factors for the high maternal mortality (Ethiopian Society for Population Studies, 2008).⁵

Studies demonstrating the high levels of maternal mortality in developing countries and research identifying causes of maternal deaths have repeatedly emphasized the need for goal-oriented antenatal care and availability of trained personnel to attend women during labor and delivery. Although obstetric emergencies cannot be predicted through antenatal screening, women can be educated to recognize and act on symptoms leading to potentially serious conditions; this is one strategy for reducing maternal mortality (Bhatia and Cleland, 1995). To improve the health of mothers and newborns WHO recommended four essential care visits during pregnancy (WHO, 2009). In addition, it appears to have a positive impact on the utilization of postnatal healthcare services.

7.4 Ethiopian Literature

Several Ethiopian studies have examined socio-economic and demographic factors affecting ANC utilization. In most rural areas of Ethiopia like other African countries, rural women’s access to maternity care service is relatively very low; women had to travel long distance to get to the nearest health facility. The scarcity of vehicles, especially in remote areas, and poor road condition can

⁵Lead author of the booklet is Associate Professor Assefa Hailemariam, Institute of Population Studies, Addis Ababa University.

make it more difficult for pregnant women to reach the nearest health facility. Walking is the primary mode of transportation even for women in labor (Yared and Asnakech, 2002). Studies found strong associations between parity and ANC utilization. High parity women tended to use the service more often than their counterparts (i.e., low parity women) in Ethiopia (Yared and Asnakech, 2002). A study conducted in the Southern part of Ethiopia in 1997 indicated that higher parity women tend to delay prenatal care than lower parity women (Belay, 1997).

Studies found that women's education was the best predictor of ANC visits. The use of antenatal care services is strongly related to the mother's level of education. More educated women are less likely to be influenced by traditional practices that are contrary to modern health care, and more capable of dealing with modern institutions. Women with better education were more likely to receive the recommended number of ANC visits (4 visits). Educated women are more likely to start ANC visits early than less educated women. Regardless of income differences, more educated mothers may be aware of early care and birth outcome (Belay, 1997).

Several studies on ANC in relation to psychosocial factors indicated that women who were single were less likely to use ANC than those who were married. Unmarried and widowed/divorced women may have a fear of accessing the service due to possible stigma associated to pregnancy out of wedlock. Married women were more likely to receive ANC and seek it earlier; according to Belay before the third trimester of pregnancy (Belay, 1997; Hayelom, 2008).

The knowledge and attitude of women and partners towards the service is also one of the factors that affect maternity service utilization. Positive husband's/partner's attitude towards ANC was found to be among the most important predictors of prenatal care utilization (Mesganaw, 1992; Belay, 1997). Absence of illness during pregnancy and lack of awareness are the major reason for not attending antenatal care (Mesganaw, 1992; Belay, 1997; Hayelom, 2008).

7.5 Objective and Methodology

The objective of this chapter is to examine the effect of women's education status, place of residence and age at first marriage on maternal health care utilization in Ethiopia. This study used nationally representative data from the 2000 and 2005 EDHS to analyze the relationship between maternal health service utilization (antenatal care, delivery care and postnatal care) and independent variables (place of residence, age at first marriage and women's level of education).

Bivariate analyses were done using SPSS, version 15.0 software. Chi-square tests were used to test for statistical significance of associations between the dependent and the independent variables. Six thousand five hundred thirty eight ever-married women who participated in the 2005 EDHS were considered in the bivariate analysis.

7.6 Results

7.6.1 Maternal Health Service Utilization

Table 7.1 shows the percent distribution of mothers who utilized maternal health service in the 5 years preceding the two DHSs and the percentage point change between EDHS 2000 and 2005 by selected background characteristics.

Percentage of antenatal care service use by women of age at birth less than 20 declined from 28.8 in 2000 to 27.3% in 2005. There is slight increase among women of age at birth 20–34 and 35–49. High urban-rural difference is observed in both survey periods. Around seven in ten urban women who had birth in 5 years before the surveys received ANC service (at least one visit) from skilled providers as compared to two in ten rural women. When the percent use is compared between the two survey periods there is an increase from 2000 and 2005 in both rural and urban areas.

Despite more recent improvements in the country's overall educational level, Ethiopian women of reproductive ages are among the least educated when compared with women in other sub-Saharan African countries. According to EDHS 2005, about 66% of women in reproductive age have no education (ORC Macro, 2007). As it is indicated in the literature, the Ethiopian DHS also indicated that the proportion of illiterate women who received ANC service from a skilled provider is much lower than women with secondary and higher education.

In 2000, two in ten illiterate women used the service whereas seven in ten women with at least secondary education used ANC services. Increase was observed in 2005 by women with secondary and higher education; eight in ten women visited health facilities for ANC service. Women with primary education used the service better than the illiterate; however, there was a decline in percentage of women who used the service from 45 to 39.4% from 2000 to 2005. There was almost no increase in the proportion of women who used antenatal care service from skilled health providers between the two survey periods; increasing from 27 in 2000 to 28% in 2005.

A skilled care during childbirth is very crucial for the health of the mother and the newborn baby. Overwhelming majority of births in Ethiopia is delivered without the attendance of health professionals. As illustrated in Table 7.1, the use of skilled birth attendant is particularly affected by mother's education, residence and age at birth. For example, in 2000, urban women were fifteen times as likely as rural women to give birth attended by a skilled health provider. Women with secondary or higher education are eighteen times as likely as women with no education to use health professionals during childbirth. The likelihood of younger women to use health professionals during childbirth is higher than older women. The difference has increased in 2005; urban women are seventeen times as likely as rural women, and women with at least secondary education are twenty seven times as likely as women with no education to give birth attended by health professionals. A major change is observed in the proportion of women with secondary and higher education who received skilled care from health professionals; 45% in 2000 to 57.7% in 2005.

Table 7.1 Maternal health service utilization in Ethiopia by background characteristics: EDHS 2000 and 2005

Background characteristics	EDHS 2000	EDHS 2005	Percentage point change
<i>Antenatal Care (at least 1 visit)</i>			
Mother's age at birth			
<20	28.8	27.3	-1.5
20-34	28.0	29.1	1.1
35-49	21.3	22.7	1.4
Residence			
Urban	66.6	68.9	2.3
Rural	21.6	23.7	2.1
Women's education			
No education	21.0	21.7	0.7
Primary	45.0	39.4	-5.6
Secondary and higher	71.7	80.9	9.2
Total	26.7	27.6	0.9
<i>Skilled Birth Attendance</i>			
Mother's age at birth			
<20	6.0	6.9	0.9
20-34	6.1	5.8	-0.3
35-49	3.7	3.8	0.1
Residence			
Urban	34.5	44.6	10.1
Rural	2.3	2.6	0.3
Women's education			
No education	2.5	2.3	-0.2
Primary	10.4	8.5	-1.9
Secondary and higher	45.0	57.7	12.7
Total	5.6	5.7	0.1
<i>Postnatal care (within 2 days of delivery)</i>			
Mother's age at birth			
<20	10.0	4.8	-5.2
20-34	8.0	5.1	-2.9
35-49	6.0	2.7	-3.3
Residence			
Urban	38.1	30.9	-7.2
Rural	3.9	2.1	-1.8
Women's education			
No education	4.4	1.8	-2.6
Primary	13.5	6.6	-6.9
Secondary and higher	47.9	40.8	-7.1
Total	7.8	4.6	-3.2

Source: CSA and ORC Macro 2001 and 2006.

The proportion of urban women who give birth attended by health professionals increased from 34.5 in 2000 to 44.6% in 2005. Decline in the proportion of women is observed in illiterate, with primary education and 20-34 of age at birth from 2000 to 2005. There has been a very small increase in the percentage of women who have

received skilled care during childbirth in the 5 years period between the surveys; from 5.6% in 2000 to 5.7% in 2005.

The majority of maternal deaths occur during childbirth and within 2 days after delivery (Stanton et al., 2000). Thus, postnatal care is important for both the mother and the child to treat complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child. Surprisingly, the proportion of women who received PNC within the critical 2 days after delivery declined from 7.8 to 4.6% (Table 7.1).⁶ The decline is observed in all categories of the selected background characteristics. While this decline in utilization of PNC remains unexplained, there is a substantial difference between urban and rural residents, and those who are illiterate and those who have secondary education and above.

7.6.2 Age at First Marriage Place of Residence and Educational Level

Table 7.2 shows the relationship between age at first marriage, a major socio-cultural factor and a development factor, women's education and place of residence. For this descriptive analysis, 6,538 ever-married who had at least one live birth are considered. The minimum age at marriage was reported to be 7 and the maximum 38 years. The majority of the women (77.2%) married before age 18; around 21% of women married at age 7–13, and 28% between age 14 and 15 and 16–18.

Table 7.2 Percent distribution of age at first marriage of ever-married women of reproductive ages by place of residence and education (EDHS, 2005)

Respondents characteristics		Age at first marriage				Total
		7–13 yrs	14–15 yrs	16–18 yrs	>18 yrs	
Place of residence	Urban	8.6	11.5	16.0	27.4	15.7
	Rural	91.4	88.5	84.0	72.6	84.3
	Total	21.2	28.0	28.0	22.8	100
		1,388	1,833	1,828	1,489	6,538
Highest educational level	No formal education	83.0	79.4	74.0	66.0	75.6
	Primary	14.1	16.7	18.2	13.7	15.9
	Secondary and above	2.9	4.0	7.8	20.3	8.5
	Total	1,388	1,833	1,828	1,489	100

⁶EDHS (2000) presented the data on PNC as mothers who delivered in and out of health facility and timing of first postnatal checkup; whereas, EDHS (2005) presented irrespective of place of delivery. Mothers who delivered at health facility are assumed to have received a postnatal checkup.

Of those married before age 18, 87.7% lived in rural and 12.3% in urban areas. This confirms that early marriage practice and low level of women's decision-making power in rural area is very severe. The majority of the women (75.6%) have no formal education, 15.9% had primary and only 8.5% had secondary and higher education. As the level of women's education increased, the age at marriage also increased. Of the women married at age 7–13 years, 83% had no formal education, 14.1% had primary and 2.9% had secondary and higher education.

7.6.3 Bivariate Analysis of the Effect of Women's Education Age at First Marriage Place of Residence on Maternal Health Service Utilization

We now present the association of age at first marriage, women's education level and place of residence with maternal health service utilization (ANC, delivery and PNC) in bivariate analysis.

7.6.3.1 Age at First Marriage, Women's Education, Place of Residence and ANC Service Utilization

Age at marriage was significantly associated with health service use during pregnancy ($p < 0.001$). A large proportion of women with secondary (84.4%) and higher (98.4%) education consulted a health professional during their pregnancy. Uneducated women had the highest proportion of not seeking ANC services from skilled health care providers. The difference in use of ANC services by different levels of education was statistically significant. ($p < 0.001$).

In the rural areas 23.1% of women who had one live birth in the 5 years preceding the survey received any antenatal care from health professionals. In urban areas, however, 75.3% of the women consulted a health professional during their pregnancy. Place of residence was significantly associated with antenatal care service utilization. ($p < 0.001$) (Table 7.3).

7.6.3.2 Age at First Marriage, Women's Education, Place of Residence and Delivery Service Utilization

There is a statistically significant association between age at first marriage and utilization of skilled care during childbirth ($p < 0.001$). Women's education has considerable association with health care service utilization during childbirth. The chi square test confirms that there are statistically significant association between women's level of education and utilization of service during delivery ($p < 0.001$). The urban-rural gap in using skilled care during childbirth is also very high. Around 60% of urban and only 4% of rural women gave birth assisted by professional health care providers. This association between place of residence and skilled delivery care utilization is highly significant ($p < 0.001$) (Table 7.3).

Table 7.3 Maternal care utilization by respondents' background characteristics

Background characteristics	Percent of women	Number of women	Chi-square (χ^2)
<i>Antenatal care (1+visit): health professional</i>			
<i>Age at first marriage</i>			
7–13 Years	28.5	1,387	66.769*
14–15 Years	26.6	1,833	
16–18 Years	31.9	1,828	
Above 18 years	39.2	1,489	
<i>Level of education</i>			
No formal education	22.3	4,942	1,062.567*
Primary	45.4	1,038	
Secondary	84.4	493	
Higher	98.4	64	
<i>Place of residence</i>			
Urban	75.3	1,029	1,096.178*
Rural	23.1	5,508	
<i>Delivery assistance: health professional</i>			
<i>Age at first marriage</i>			
7–13 Years	7.4	1,388	257.546*
14–15 Years	7.7	1,833	
16–18 years	11.8	1,828	
Above 18 years	24.2	1,489	
<i>Level of education</i>			
No education	4.4	4,943	2,199.063*
Primary	18.8	1,038	
Secondary	70.2	493	
Higher	92.2	64	
<i>Place of residence</i>			
Urban	59.8	1,029	2,487.099*
Rural	3.7	5,509	

Source: CSA and ORC Macro, 2006.

* $p < 0.001$.

7.7 Discussion and Conclusions

Ethiopia has shown positive developments in many health indicators since the early 1990s: the health service system has expanded, particularly focusing on expanding primary health coverage since the early 2000s. There has been a significant increase in the number of human resources for health. During 2003–2007, the number of nurses increased from 14,160 to over 18,000 (HSDP-III Independent Review Team, 2008), and the country has moved up from having the worst doctor-patient ratio in the world of 1:48,000 in 1999 to 1:42,000 (WAMAI, 2009).

As part of an ongoing task-shifting initiative, the efforts to train health officers and general practitioners to conduct emergency life-saving obstetrics surgeries have shown progress. There has also been success in moving forward the agenda of

task-shifting in order to make the most efficient use of existing human resources (WHO, 2008).

In spite of all these recent improvements in supply and coverage, the utilization is still at very low level, particularly the maternal health care service. Each year in Ethiopia, more than 24,000 women die due to pregnancy related causes. Most of the maternal deaths are caused by abortion, sepsis, hemorrhage, and obstructed labor. A relatively high percentage of death occurs right after birth, and the risk is highest among teenage mothers. The majority of these deaths are preventable with affordable interventions. Many more women die as they battle malaria, TB, HIV/AIDS and other preventable illnesses, with underlying situation of chronic under-nutrition.

Maternal mortality is not only a health problem but it is also an indicator of the performance of the health system, and of a country in meeting the overall socio-economic development objectives. Hence, studies on maternal mortality are of great importance in proposing policy actions and development activities through which the tragedy of maternal death can be reduced. The government of Ethiopian set a target to further reduce maternal mortality ratio from 590 to 267 deaths per 100,000 live births by the year 2015 in the new HSDP IV (MoH, 2010). Many factors, socio-economic and cultural, can prevent women from getting medical advice or treatment. Women's low status in society, lack of access to and control over resources, limited educational opportunities, poor nutrition, and lack of decision-making power contribute significantly to adverse pregnancy outcomes. Information on such factors is particularly important in understanding and addressing the barriers women may face in seeking care during pregnancy, at the time of delivery and after delivery.

The establishment of quantitative goals for reduction in maternal mortality by national organizations and international agencies increases the pressure on governments to provide more accurate estimates of maternal mortality. Reliable data on the levels and causes of maternal death can be used for planning, monitoring, and evaluating programs. Such data can also be used for priority setting and advocacy, which can help increase awareness about safe motherhood and encourage accountability.

However, maternal mortality is difficult to assess for various reasons. First of all, a maternal death is a somewhat infrequent event; even in areas with high ratios the absolute number of maternal deaths is relatively low. Secondly, maternal deaths tend to be underreported and/or misclassified even in countries with a satisfactory vital registration system. In most developing countries vital registration systems are incomplete and correct attribution of cause of death is the omission. Due to the fact that a majority of births in Ethiopia occur at home, there is a serious problem in discussing maternal mortality in Ethiopia in the absence of accurate information, due to the scarcity of actual studies (needs large sample and it is very expensive) and in the absence of vital registration system. This lack of information on maternal mortality is both cause and effect of the neglect of women's health since the information is very important for planning and decision-making.

Ensuring safe motherhood requires recognizing and supporting the rights of women and girls to lead healthy lives. It requires raising awareness of complications associated with pregnancy and childbirth, providing access to high-quality health

services (antenatal, delivery, postpartum, family planning, etc.), and eliminating harmful practices. These interventions are still limited in the rural areas where the government of Ethiopia has given attention in recent years.

In addition to the medical causes, various researchers have found out the underlying causes of maternal mortality related to development. As compared to the sub-Saharan African countries, Ethiopia ranks the lowest in percent of educated women in reproductive age group. The relationship between women's educational status and maternal health service utilization suggests that women with secondary or higher education are more likely than the relatively less-educated women to utilize maternal health service during pregnancy, childbirth and after birth. Low level of women's education has also a greater contribution to early marriage. Not only the level of women's education but also other social, cultural and religious reasons support the persistence of some traditional practices that can negatively affect women's health outcomes.

7.8 Recommendations

The Ethiopian health policy states that strengthening health service to mothers and children as a priority. The Ministry of Health has clearly indicated its intentions to expand and strengthen sexual and reproductive health service. While the number of health centers and health posts has increased substantially, the health system suffers from a critical shortage of skilled health workers (especially midwives and physicians) and health-service managers. In addition, equipment and supplies has limited the benefits. The Ethiopian government having recognized these gaps has included other partners in the provision of health care. The sequential Health Sector Development Programs in the past eight years (HSDP-III, 2008; MoH, 2010) upholds the participation of private sector. Such encouragement of the private sector fits well into the global trend of public –private partnership. The advantage of such partnership in Ethiopia, in view of the substantial number of private health facilities, cannot be overemphasized.

Efforts to prevent maternal deaths require a concerted and multifaceted intervention entailing a political and financial commitment. Stronger multiple partnerships are needed, with the private sector, and also with men in order to accelerate the uptake of reproductive health services by giving attention to rural areas.

Unless institutional delivery by skilled providers is made available for the majority of pregnant women, it will not be possible to achieve set national targets and the Millennium Development Goals. The residential variation also suggests, improving access to quality of maternal health services particularly in rural areas with a better allocation of human and material resource, maternal mortality can be reduced. To this end, upgrading the skill of health officers and degreed nurses on emergency obstetric care, etc. and their placement; including midwives outside big cities is needed.

In addition to the broader health service related interventions in strengthening community level maternal health services and enabling health facilities capable

of handling emerging complications additional measures should be taken. These include: enabling women and girls to have the autonomy to make informed choices regarding their sexual lives, marriage and pregnancy which may assist the effort in accelerating the rate of decline of MMR. Second, ensure that young women postpone first marriage/pregnancy by strengthening the efforts that girls and women are enrolled in secondary schooling and expansion of community education.

To design evidence-based strategies to reduce maternal mortality and achieve MDG 5, accurate estimate of maternal mortality and information on causes of deaths should be available for policymakers and practitioners. For this main reason establishing vital events registration system in the country is crucial.

References

- Belay Tessema. (1997). *Correlates of Antenatal Care Attendance Among Women in Yirgalem Town and Surrounding Peasant Associations*, Southern Region, Ethiopia, Master's Thesis in Demography. Addis Ababa University, Ethiopia.
- Bhatia, J.C. and Cleland, J. (1995). Determinants of Maternal Care in a Region of South India. *Health Transition Review* 5: 127–142.
- Central Statistical Authority (CSA) and ORC Macro. (2001). *Ethiopia Demographic and Health Survey 2000*. Addis Ababa, Ethiopia and Calverton, MD, Central Statistical Authority and ORC Macro.
- Central Statistical Agency (CSA) and ORC Macro. (2006). *Ethiopia Demographic and Health Survey 2005*. Addis Ababa, Ethiopia and Calverton, MD, Central Statistical Agency and ORC Macro.
- Central Statistical Agency (CSA). (2010). *Summary and Statistical Report of the 2007 Population and Housing Census, Population Size by Age and Sex*. Ethiopia, Addis Ababa University.
- Ethiopian Society of Population Studies [ESPS]. (2008). *Maternal Mortality Findings from EDHS 2005*. Ethiopia, Addis Ababa University.
- Ministry of Health (MoH). (1996). *Guidelines for Family Planning Services in Ethiopia*. Ethiopia, Addis Ababa University.
- Ministry of Health (MoH). (2009). *Health and Health Related Indicators*. Ethiopia, Addis Ababa University.
- Ministry of Health (MoH). (2010). Health Sector Development Program IV, 2010/11-2014-15. First Draft, June. Addis Ababa, Ethiopia.
- Futures Group International (FGI). (2006). *Maternal and Neonatal Program Effort: MNPI 2005 Survey Report*, Available at <http://www.policyproject.com/pubs/mnpi.cfm>
- Habtamu Hika. (2001). *Correlates of Maternal Mortality: The Case of Adama Hospital, East Showa Zone*, A Master's thesis in Demography. Addis Ababa University, Ethiopia.
- Hayelom Kassayou. (2008). *Factors Affecting Antenatal Care Attendance in Maichew Town, Southern Tigray*, A Master's Thesis in Demography Submitted to Addis Ababa University, Ethiopia.
- Herschderfer, K. (2004). WHO, ICM and FIGO Launch: 'Making Pregnancy Safer: The Critical Role of the Skilled Attendant'. *International Midwifery (Magazine/Journal) International Confederation of Midwives* 17(6): 65(1).
- Hogan, M.C., Foreman, K.J., Naghavi, M., Ahn, S.Y., Wang, M., Makela, S.M., Lopez, A.D., Lozano, R. and Murray, C.J.L. (2010). Maternal Mortality for 181 Countries, 1980–2008: A Systematic Analysis of Progress Towards Millennium Development Goal 5. *Lancet* 375: 1609–1623. DOI: 10.1016/S0140-6736(10)60518-1.
- HSDP-III Independent Review Team. (2008) *Ethiopia Health Sector Development Program (HSDP-III) (2005/06–2010/11) Mid-Term Review*. Vol.1, Component Report, Final Report. Addis Ababa, Ethiopia.

- John Snow Inc (JSI). (2009). *Baseline Household Health Survey in Amhara, Oromia, SNNP and Tigray Regions: The Last 10 Kilometers*. Ethiopia, Addis Ababa University.
- Khan, K.S., Wojdyla, D., Say, L., Gülmezoglu, A.M., and Van Look, P.F.A. (2006). WHO Analysis of Causes of Maternal Death: Systematic Review. *Lancet* 367: 1066–1074.
- Kwast, B. and Liff, J.L. (1988). Factors Associated with Maternal Mortality in Addis Ababa, Ethiopia. *International Journal of Epidemiology* 17(1): 115–121.
- Mesganaw Fentahun. (1992) *Factors Affecting Antenatal Care Attendance and Place of Delivery by Pregnant Women in Gulele District of Addis Ababa*. A Master's Thesis in Public Health Submitted to Addis Ababa University.
- ORC Macro International Inc. (2007). *Trend in Demographic and Reproductive Health Indicators in Ethiopia*. Calverton, MD, Macro International Inc.
- Stanton, C., Abderrahim, N. and Hill, K. (2000). An Assessment of DHS Maternal Mortality Indicators. *Studies in Family Planning* 31: 111–123. DOI: 10.1111/j.1728-4465.2000.00111.
- WAMAI. (2009). Reviewing Ethiopia's Health System Development. *Japan Medical Association Journal* 52(4): 279–286.
- WHO. (2004). *ICD-10: International Statistical Classification of Diseases and Related Health Problems*. Volume 3, Tenth Revision-Second edition, Geneva, WHO.
- WHO. (2008). *Making Pregnancy Safer: Annual Report 2007* WHO/MPS/08.01
- WHO. (2009). *Integrated Management of Pregnancy and Childbirth: WHO Recommended Interventions for Improving Maternal and Newborn Health*. Second Edition, Geneva, WHO.
- WHO, UNICEF and UNFPA, World Bank. (2007). *Maternal Mortality in 2005: Estimates Developed by WHO and UNICEF, UNFPA and the World Bank*. Geneva, Department of Reproductive Health and Research, World Health Organization.
- WHO, UNICEF and UNFPA, World Bank. (2010). *Trends in Maternal Mortality: 1990 to 2008: Estimates Developed by WHO and UNICEF, UNFPA and the World Bank*. Geneva Department of Reproductive Health and Research, World Health Organization.
- Yared Mekonnen and Asnakech Mekonnen. (2002). *Utilization of Maternal Health Care Service in Ethiopia*. Calverton, MD, ORC Macro.

Part IV
Population Distribution, Migration,
Urbanization and Labor Force

Chapter 8

Migration and Urbanization in Ethiopia: Addressing the Spatial Imbalance

Assefa Hailemariam and Aynalem Adugna

Abstract We assess the levels and trends of migration and urbanization in Ethiopia by focusing on migratory streams and the spatial distribution and growth of urban centers. Data from the three national censuses and national labor force, vital registration and migration surveys are used. Rural–rural and rural–urban migration declined but urban–urban migration increased during the period 1984–1999. We show that as a response to land shortages in rural Ethiopia, small towns and medium-sized cities are seeing unprecedented revival and economic renewal. Many small towns are registering faster growth rates than medium-sized towns, and both are witnessing a much faster increase than Addis Ababa, which registered a relatively lower inter-censal growth rate (2%). We find that temporary migration is a very common demographic response to population-resource imbalance and is dominant in both rural–urban and urban–urban streams. Migrants (both temporary and permanent) with secondary school education form a substantial percentage in the urban–urban migration stream. Marriage and other family-linked causes show a strong relation with being female, of rural origin, and from the northern Amhara and Tigray regions. Our findings suggest that the 1993 National Population Policy objective calling for a reduction in rural–urban migrations needs to be revised so as to foster small and medium town developments and off-farm labor mobility.

Keywords Gender · Urbanization · Migratory Stream · Internal migration · Urban–urban · Rural–rural · Urban–rural · Labor mobility

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8.1 Introduction

Long-term and long-distance migration in Ethiopia represents age-old linkage mechanisms of ensuring survival in the face of natural catastrophes, war, and pestilence. It also involved individuals in search of better economic prospects (Mberu, 2006). More significant historically are, however, short-distance (but not necessarily short term) migrations such as labor circulation, marriage- and family-related relocations. These are more widespread, and form the basis of the social and economic fabric of the nation.

Even though similar causes and typologies of migrations help explain much of the mobility in the rest of Africa, the Ethiopian experience diverges from the rest, at times significantly, due in part, to its unique history and varied landforms. More recently, government policies geared toward combating the effects of draught, famine, and environmental degradation have sought to relocate millions of individual citizens to destinations that, seemingly, offer a more equitable population – resource balance (Markos, 2001; Kloos and Aynalem, 1989).

One of the objectives of the 1993 National Population Policy was to reduce rural–urban migration (TGE, 1993). However, the main engine of rural–urban linkages and urban growth in Ethiopia in the last half century (and in the decades before), has been rural–urban migration (Raffiq and Assefa, 1987; Bekure, 1999). However, Ethiopia is not alone or unique in this regard. In the words of Todaro, “one of the most significant of all postwar demographic phenomena and the one that promises to loom even larger in the future is the rapid growth of cities in developing countries” (Todaro, 1997).

The growth impacts of rural–urban migrations are magnified several fold when the percentage urban or the degree of urbanization is low. This is the case in Ethiopia where only 16% of the population is urban.¹ It is estimated that 1% of rural out-migration adds 6% to the urban growth rate when the level of urbanization is around 14% (which is almost the exact percentage for Ethiopia). On the other hand, the degree of urbanization increases only 1% when the level of urbanization is 50% (Cour, 2002). A number of studies, including those in many Asian countries have led to a common conclusion that migration is a driver of growth and an important route out of poverty with significant positive impacts on people’s livelihoods and well-being (Deshingkar and Grimm, 2004).

A recent World Bank report on migration asks: “to what extent is internal migration a desirable phenomenon and under what circumstances?” (Lall et al., 2006). The answer is multi-pronged. On the one hand, migration can be an important livelihood strategy for poor groups across the world and not just a response to shocks (Deshingkar and Grimm, 2005). On another extreme, migration has been the main

¹The Ethiopian CSA defines urban areas as “localities with 2000 or more inhabitants” though in practice (i) all administrative capitals (regional, zonal and woreda capitals), (ii) localities with urban dweller’s associations not included in (i), and (iii) all localities not included in either (i) or (ii) whose inhabitants are primarily engaged in non-agricultural activities are considered urban (World Bank, 2007).

catalyst in the spread of HIV in the southern and eastern Africa over the last two decades, thereby generating new waves of return migrations of the afflicted – those seeking comfort, medical help, and community support in their places of origin (Crush et al., 2006).

Migration to democratic countries has empowered women by ensuring enhanced legal rights, open access to education, and equal employment opportunities, but it has also meant the continuation of a second-class citizenship in others countries. In Ethiopia, women migrants' access to the formal sector of the economy is limited. For example, just over one-quarter of all civil servants in Ethiopia are women and of these women, 98.2% work in lower positions, while only 1.8% work in professional positions (Emebet, 2002).

This chapter presents an assessment of the levels and trends of internal migration in Ethiopia by focusing on possible underlying forces and flow directions. We also investigate its relationship with urbanization. Furthermore, we analyze the spatial aspects of urbanization with a focus on recent growth trends in large and medium-sized urban centers (population 15,000 or higher²) at the time of the 2007 census.

8.2 Background

Migration trend analyses beginning in the mid-1980s point to subtle (and not so subtle) shifts in the nature of permanent and temporary moves in Ethiopia, but hard cross-referenced evidence is difficult to come-by. As a result, there are more questions than answers. What are the characteristics of the typical Ethiopian migrant in terms of age, gender, education, occupation, ethnicity, etc? Who migrates, why, and with what frequency? Are there regional dimensions to distances travelled and length of absence (temporary vs. permanent)?

Given the government's October 2009 appeal for food-aid acknowledging that 6.2 million Ethiopians are on the verge of starvation, risk of famine is likely to be the main push factor forcing people out of homes at least in the short term. The conceptual diagram below attempts to provide some answers. The numbers on the chronically and seasonally food insecure are based on a recent paper by Teller and colleagues (Teller et al., 2009) (Fig. 8.1).

8.3 Objectives

Migration will continue to be one of the engines of economic growth in Ethiopia and one of the main drivers of its future urbanization trends. In realization of this fact, we present:

²The Preliminary Report of the 2007 Ethiopian Population and Housing Census presents urban centers with population size of only 15,00 and above.

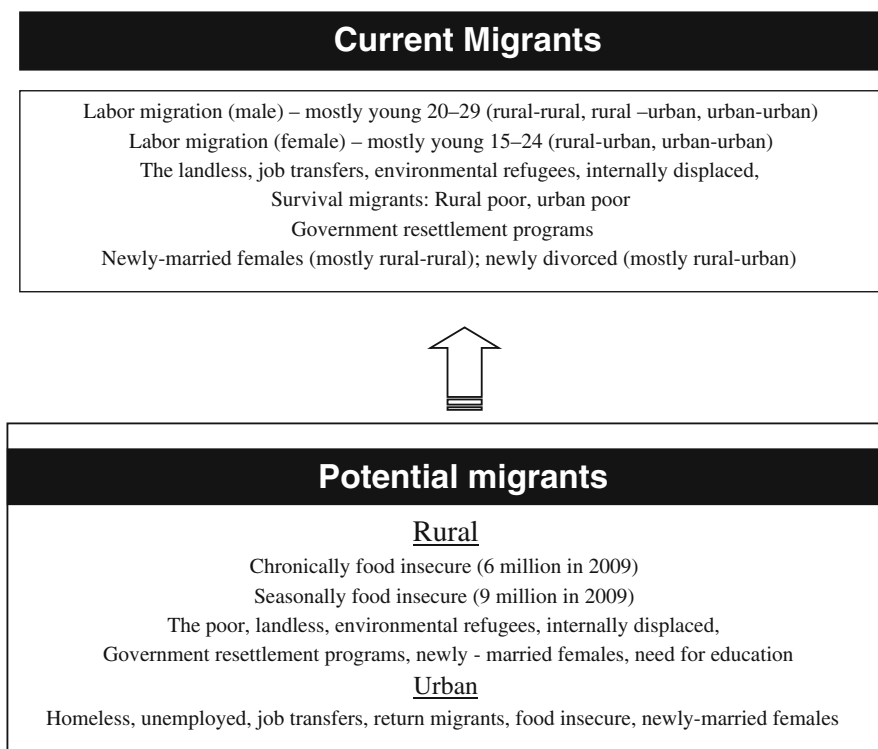


Fig. 8.1 Actual and potential migration streams in Ethiopia. A simple conceptual framework

- (a) The background factors at the root of major migratory flows in the country.
- (b) Migrant characteristics and important selectivity features distinguishing migrants from the natives of destination cities as well as those choosing to stay home.
- (c) An assessment of regional variations in levels of urbanization
- (d) The varied rates of urbanization ranging in impacts from the more than doubling of scores of cities between the country's first (1984) census and the last, to little growth or actual loss of populations by a few urban centers.
- (e) A synthesis of past growth trends with the view to identifying important determinants of future changes in migration streams and urbanization trends.

8.4 Methodology

The main data sources are published secondary documents from the Central Statistical Agency including data from the 1984 and 1994 National Population and Housing Census Reports of Ethiopia. The 1999 National Labour Force Survey

(NLFS) of Ethiopia is used to study internal migration streams. The recently completed National Labour Force Survey (2005) could not be used, however, because unlike the 1999 NLFS, it does not have enough data on migration. An in-depth analysis of the 1994 Population and Housing Census of Ethiopia entitled “Migration and Urbanization in Ethiopia, with special reference to Addis Ababa, 2001”, and Migration, Gender and Health Survey in Five Regions of Ethiopia (1998) conducted by the Demographic Training and Research Center (DTRC) of Addis Ababa University and Population Studies and Training Center (PSTC) of Brown University form the core of our analyses on migrant characteristics. This will involve analysis of migrant selectivity including education, length of stay, marital status, and future intentions. The population size of major urban centers and other data have been updated by using the first draft report of the 2007 Population and Housing Census of Ethiopia (CSA, 2008a).

One of the major problems in migration and urbanization research has been the frequent boundary changes and the difficulties it created in the analysis of urbanization and spatial variations. There had been several regional reclassifications since the conduct of the first census in 1984. There were 14 provinces in the country at the time including Eritrea, which became an independent country in 1991. Half a decade later this changed to 18 administrative regions and zones. Fourteen new regions were created following the coming to power of a new government in May 1991; a division which lasted until August 1995 when it was replaced by the current regionalization scheme with nine regional states and two city administrations. We have made necessary adjustments and modifications to show continuous trends in urbanization, and regional variations in migration volumes.

8.5 Migration: Levels and Spatial Variations

8.5.1 Trends and Levels of Migration

It had been said that migration is a form of geographical mobility between one geographical unit and another, generally involving a change of residence from the place of departure to the place of arrival (UN, 1958). It is broadly classified as internal and international migration, and the focus of this sub section is on internal migration in Ethiopia. Internal migration is defined, according to CSA (1991) as a residential mobility from one geographical unit to another within the same country. Examination of available data reveals that, despite its low economic development, heterogeneous cultural groups and difficult physical terrain, Ethiopia experienced a relatively high level of internal migration in the decades before the rural land reform of the mid-1970s (CSA, 1991).

The level of migration in an area is measured by calculating the percentages of migrants in the population. In the 1984 census 16.4% of the total population was reported as migrants (that is, those who have moved, at least once in their life time,

from a given *wereda*³ or town in which they were born to any other *wereda* or town in the country). Caution is called for in analyzing the trend of migration because the 1994 census figures do not include data on the two predominantly nomadic regions – Affar and Somali regions.

In 1984, 14.9% of males and 17.8% of females in the country were reported as migrants, where the sex ratio of the migrants was 84.4 (males per 100 females). The 1994 census found that the level of internal migration by sex was 13.1 and 15.2% of the males and of the females migrants, respectively. In both sexes, the figure for the 1994 census is lower than it was in the 1984 census. Similar caution has to be made in comparing migration by sex because the 1994 census has not presented data on Affar and Somali regions. It would be useful to know recent trends in the migration habits of male and female Ethiopians but available data (including the 2007 census data) lack sufficient details to allow gender-specific analysis.

8.5.2 Migration Streams

Migration streams can be identified by referring to the origins (i.e. birth place) and destinations of migrants. This section considers the rural-urban dimensions with four types of migration flows: rural–urban, rural–rural, urban–rural and urban–urban. The hypothesis of the mobility transition proposes that migration patterns change over time as countries develop and become more urbanized. It is suggested that migration evolves from being primarily rural–rural to rural–urban and finally to urban–urban.

The figure below shows recent changes in migratory flow patterns. It is based on CSA's National Labor Force Survey which covered both urban and rural areas with the exception of six zones in Somali and two zones in the Afar region (CSA, 1999). To avoid confusions resulting from boundary changes and recent ethnic-based administrative restructuring, questions on previous place of residence were asked only of migrants arriving in the 5 years prior to the survey. All households in the study sample were interviewed. The proportion of Ethiopians who could be described as migrants in the 1999 study was 19.6% with a significant difference between urban areas (49.3% migrants) and rural locations (15%). Regionally, the lowest percentages of in-migrants were in Amhara and SNNP. Females were more mobile than males.

If corroborated by other data, the most noticeable change during the 15-year period considered in Fig. 8.2 would be the rise in the proportion of urban-to-rural migrants most of whom are likely to be return migrants. The seven fold increase signifies a clear departure from historical trends of a predominantly rural-to-urban

³Woreda is an administrative division equivalent to a district. Woredas are composed of a number of kebeles or neighborhood associations, which are the smallest unit of local government in Ethiopia. Woredas are typically collected together into zones, which form a kilil (Regional administration).

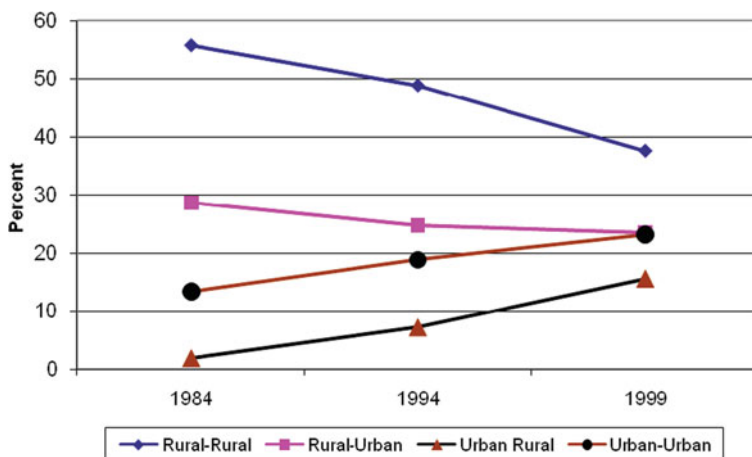


Fig. 8.2 Migration trends by rural and urban origins and destinations, 1984–1999 (Source: based on CSA 1991 and 1999, DTRC/PSTC 1998 and CSA 1999 NLFS)

flow, and unlikely to be the norm in other African countries (Adepoju and Hammar, 1996; Lall et al., 2006).

The sharp decline in the proportion of rural–rural migrations indicates a significant down-ward shift in the percentage of movers seeking to remain residents of rural Ethiopia. Rural–urban migration also declined while urban–urban migration increased. Evidence from the 1994 census shows (Golini et al., 2001) that most migrations are short-distance (within the administrative regions of origin). A good example comes from the 1994 census in Tigray where 92% of new migrants were Tigreans. In Amhara, 85% of new migrants were Amharas. With less than two thirds (65%) of new migrants being Oromos, Oromiya presented a slightly less homogenized ethnic composition of new arrivals (Golini et al., 2001).

8.5.3 Regional Variations

Exclusion of the “place of birth” question from the 1994 and 2007 census questionnaire has meant that the 1984 census year remains the latest period for which a nation-wide migration data are available. In CSA’s report of the 1994 census (CSA, 1999), SNNP and Amhara had the lowest in-migration rates of about 10%. Oromiya had the third lowest percentage of persons reporting themselves as migrants. Expectedly, Addis Ababa had the highest. This is expected, because the city’s beginnings as the nation’s capital and its accelerated growth over the last half century have been fueled by migration; especially of persons originating in distant and nearby rural countryside.

Of the primarily rural regions, Gambella and Benishangul Gumuz have the highest proportion of non-natives. Given the focus of the Derg government on hitherto unattractive migrant destinations for its resettlement programs, and the

continuation of similar policies under the current government, these two regions can be thought of as new government favored destinations. Gambella and SNNP had roughly identical percentages of migrants settling in urban and rural destinations. Over four-fifths of Benishangul-Gumuz migrants interviewed in the 1994 census were living in rural areas, as did nearly three-quarters of those interviewed in SNNP and Gambella.

Unfortunately, the listing of migrant proportions by destinations does not contribute to the understanding of migrant selectivity including age, gender, educational status, and marital status. Moreover, the sources of migrants are not shown. For Gambella and Benishangul-Gumuz, however, government resettlement programs may have contributed the lion's share. The predominantly rural representation in these two regions is indicative of a rural-based resettlement, and conforms to the overall goal of all government resettlement programs of the past and present. The highest percentages of migrants settling in urban areas at the time of the 1994 census were those in Tigray.

8.5.4 Migrant Selectivity

A 1998 migration and health survey of the five regions in Ethiopia covering four large regions – Oromia, Amhara, SNNPR and Tigray – and five cities – Addis Ababa, Mekele, Bahir Dar, Awassa, and Jimma – adopted a combined random and purposive sampling techniques to ensure gender balance and representation of various population subgroups in sufficient numbers. Similarly designed studies were carried out in two other countries – Vietnam and South Africa (Djamba, 2001) around the same time. Much of the analysis below on the topics of household size, age distribution, marital characteristics, education, total number of moves, reason for moving, and future plans, are based on published results of this survey (DTRC and PSTC, 2000). This will help to add a new dimension to our focus on rural–urban linkages in Ethiopia by allowing valuable insights into the processes of migrant selectivity, their coping strategies at places of arrival, and future prospects for the overall success of the aims and aspirations of each individual migrant.

8.5.4.1 Household Size

Only 1.6% of permanent migrants and 2.1% of non-migrants lived alone but, not surprisingly, the majority of temporary migrants (52.5%) lived alone (DTRC and PSTC, 2000). Uncertainty about length of stay, the need to lower cost by leaving family members behind, inability to access or afford accommodations suitable for more than one individual, and cultural inappropriateness as well as undetermined risks (for females) of lodging with a roommate of an opposite sex, are among likely causes limiting choices for temporary migrants and forcing them to remain loners. The proportion of temporary migrants with a family size of only two persons is also high (13%) in comparison to permanent migrants and non-migrant natives. The highest percentage in the 9+ family size-groups is among permanent migrants,

suggesting the possibility that long-term migrants might be facing more serious issues of overcrowding than non-migrants (DTRC and PSTC, 2000).

8.5.4.2 Age-Sex Distribution

The age-sex structure of non-migrants in the 1998 survey is compared with that of two other categories of migrants – temporary migrants and permanent migrants.⁴ The study's sample design sought to achieve gender balance and representation of adequate number of migrants in the three main migration categories.⁵ The analysis here could be viewed as a test-case to determine whether the sampling strategy has caused distortions in other areas, including age distribution patterns. The age structure of non-migrants is expected to produce a typical pyramid characteristic of the age pyramid for the rest of Ethiopia with a wide bottom tapering rapidly toward higher ages. The first observation for non-migrants is the low percentages of children in the 0–4 and 5–9 age groups, and the precipitous decline in numbers and percentages from age 15–19 to age 20–24, and from ages 25–34 to 35–44 (DTRC and PSTC, 2000).

The contrast between the age structure of permanent migrants and temporary migrants is as expected. The highest percentages for permanent migrants are in the 25–34 and 35–44 age groups. Among temporary migrants, the age structure peaks early with nearly a third of the population in the 15–19 age group. The percentages for this group remain high in the subsequent age groups of 20–24 and 25–34 (DTRC and PSTC, 2000). In conclusion, we can assert with some degree of confidence that the age distribution of permanent migrants is an evolved version of the age distribution of temporary migrants.

8.5.4.3 Marital Characteristics

A stark contrast is noted between temporary and permanent migrants in marital characteristics (DTRC and PSTC, 2000). While differences are expected to narrow as temporary migrants gain a foothold in their new place of domicile the disruptive effects of migration on marriage and family formation are very evident. However, a direct comparison between all of the temporary migrants and all permanent migrants fails to take into account differences in age structure.

On average, temporary migrants are younger and significant proportions have not reached the legal age of marriage. Less than a third of females describing themselves as permanent migrants were never married while two thirds of females who considered their presence as temporary were never married. The difference between

⁴Permanent migrants are persons born elsewhere, but considered themselves to be usual residents at the place of interview, or those born at place of current residence and usual residents there, but had been away from the place of interview for at least 6 months since age 13, while temporary migrants were born elsewhere than at place of interview and considered their usual place of residence in a place other than the interview location (Djamba 2000).

⁵Temporary, Permanent and Non-migrants

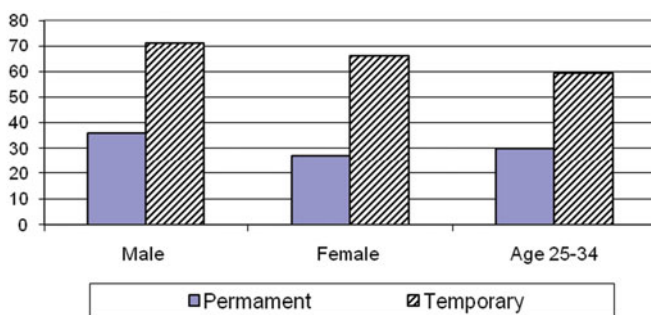


Fig. 8.3 Proportion of all sampled never married males and females by migration status and age (Source: DTRC and PSTC 2000)

the proportions of the unmarried among male permanent and temporary migrants is roughly in the same order of magnitude (Fig. 8.3) as females. Overall, roughly half as many temporary migrants as permanent migrants are married and the differences remain significant even after the age effect is accounted for by comparing only the migrants in the 25–34 age groups. This falls in line with the expectation that long-settled migrants would have the luxury of time and accumulated resources to engage in important life activities including marriage.

8.5.4.4 Education

Educational status of migrants is at once a factor of self-selection representing the best yardstick in the assessment of self-worth by an individual migrant, and a predictor of the likelihood of successes to be realized at places of destination. A comparative statistical analysis of Ethiopia and South Africa using a similarly designed survey data gave the unlikely result that “while education appears an important determinant of migration among Ethiopians, it has no significant effect in South Africa” (Djamba, 2001).

A careful examination of the 1998 migration data makes the likely challenges to be faced by those self-reporting their status as “temporary” migrants very evident, and confirms the often claimed assertion that migrant selectivity is a very rational process. For example, the migrant group with the highest percentage of illiterate migrants in all age groups except one (age 35–49), were those who self-reported their status as “temporary”. Lower levels of illiteracy are observed in all age groups of non-migrant natives below age 35, beyond which a reversal occurs with migrants showing an educational advantage over non-migrants (DTRC and PSTC, 2000). Urban–urban migrants have a higher level of education (whether self-described as temporary or permanent) than rural–rural migrants or rural–urban migrants. In general, migrants of urban origins have a higher level of education than migrants of rural origin. This applies both to permanent migrants, and to those who have self-reported their status as temporary migrants. Whether due to self-selection, or acquisition of higher levels of learning after moving, migrants with secondary school education

form a substantial percentage in the urban–urban migration stream. This is true both for temporary and permanent migrants (DTRC and PSTC, 2000).

8.5.4.5 Number of Moves

The proportion of migrants who moved seldom – once or twice – is compared with the proportion that moved three or more times using the 1998 survey data (DTRC and PSTC, 2000). Some in the later group could be thought of as habitual movers. An expected pattern of increasing percentages of persons who moved three or more times with a rise in age of migrants is observed. A very interesting contrast is also noted based on migration status – temporary versus permanent. The percentage of temporary migrants involved in three or more lifetime moves increases sharply with increasing age but, understandably, the picture for permanent migrants is mixed and more complicated. Since there is no upper or lower limit to the number of times a migrant has to move before settling down, it is, for instance, not surprising that roughly the same percentage of permanent migrants in the age groups 13–24 and 35–49 reported themselves as having moved three or more times (DTRC and PSTC, 2000). It is also not surprising that the highest percentage of temporary migrants reporting themselves as having moved three times or more are also the oldest.

8.5.4.6 Reasons for Moving

The 1998 migration study lists major classes of stated reasons behind migrants' decisions to move (DTRC and PSTC, 2000). Among the reasons cited, marriage and other family-linked causes show a strong link with being female, of rural origin, and from Amhara and Tigray. Being male represents a very important exception, and reflects a universal cultural norm in which the bride (not the groom) leaves home. Being male is strongly linked with job-seeking, and job transfer, showing the primacy of economic reasons in individual decision-making of male migrants. A comparative study between Ethiopia and South Africa produced a similar result in which “permanent migration related to work and better life is predominantly a male form of spatial mobility in both countries” (Djamba, 2001). Looking for a better life is the least important factor in all categories considered except for males. Marriage and family reasons are supreme among migrants in the “rural-origin” category (DTRC and PSTC, 2000). Last but not least, whether due to translation problems, or because of respondents' unwillingness to associate relocation with a search for good times, “looking for a better life” proved to be by far the least important selectivity factor.

8.5.5 Future Migration Plans

Not surprisingly, individual migrants self-reporting their migration status as temporary, rather than permanent, are heavily represented among groups planning to move

again within 3 years of the 1998 survey (DTRC and PSTC, 2000). A high population (60–70%) of such migrants plan to move. A look at differences by migrant characteristics, whether personal or socioeconomic, shows a clear absence of significant differences in the desire to move again. Among non-migrants, being from the Amhara region and in the age group of 13–24 is linked with a slightly heightened desire to move. This also applies to permanent migrants in the 13–24 age groups (DTRC and PSTC, 2000).

8.6 Migration's Effects on Urbanization

Increasing urbanization is closely linked with other processes of change such as economic growth and industrialization. It is the result of social, economic and political developments that lead to changes in land use and transformations from rural to metropolitan patterns of organization and governance (Tarver, 1996). Although natural increase (births less deaths) is an important factor contributing to the growth of cities, rural–urban migration plays the leading role in the urbanization process.

In many developing countries, poverty drives people from rural areas forcing them to migrate to the city in search of employment, food, shelter and education. Most people in Africa move to the urban areas because they are 'pushed' out by factors such as poverty, environmental degradation, religious strife, political persecution, food insecurity and lack of basic infrastructure and services; or because they are 'pulled' into the urban areas by the advantages and opportunities of the city including education, electricity, water etc. Even though in many African countries the urban areas offer few jobs, young people are often attracted there by the amenities of urban life (Tarver, 1996).

8.6.1 Recent Trends in Urbanization

Ethiopia is characterized by a low proportion of urban population and rapid rate of urbanization compared to other countries in Eastern Africa. The proportion of total population living in urban centers (percent urban) was 6% in 1960, 10.4% in 1980 and 15% in 2000, whereas the respective figures for Eastern Africa, were 7.4, 14.7 and 21% (Selome and Assefa, 2010). Slightly more than 16% of the total population of Ethiopia lived in urban areas at the time of the 2007 census putting the country in the category of the least urbanized countries in the world.

On the other hand, the number of urban centers increased by 7.4% per annum between 1967 and 1984 and by 6.7% between 1984 and 1994, while urban population increased by 5.1 and 5.8%, respectively (Fig. 8.4).

Localities with 50,000 or more inhabitants increased by 6.9% per year between 1967 and 1984, by 12.1% between 1984 and 1994, and by 5.8% between 1994 and 2007. There was no change in the number of localities with 100,000 or more inhabitants between 1967 and 1984 but between 1984 and 1994, it increased by

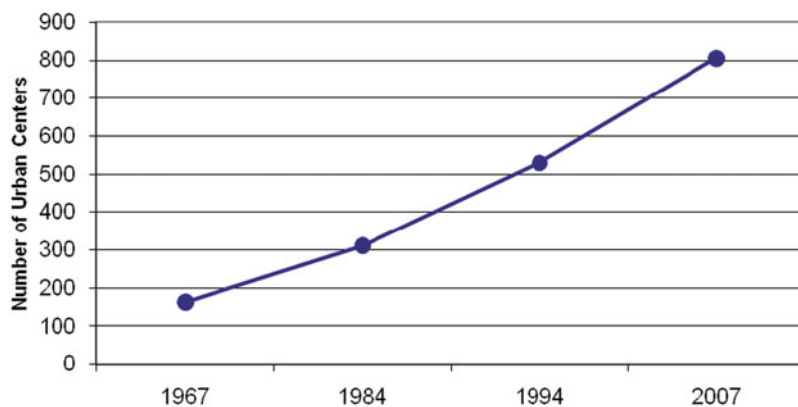


Fig. 8.4 Trends in growth of urban centers: 1967–2007 (Source: Rafiq and Assefa Hailemariam (1987), CSA (1991, 1999, 2008))

28.9% and between 1994 and 2007 by 5.1%. Localities with 100,000 or more inhabitants increased three fold between 1984 and 1994. Selome and Assefa (2010) show that since the 1980s, Ethiopia sustained a higher rate of growth of urban population compared to countries in Eastern Africa.

Ethiopian urbanization is dominated by the prevalence of small size settlements. The proportion of total urban localities falling in the size class of 2,000–4,999 inhabitants was 66.4% in 1967, 59.3% in 1984 and 55.7% in 1994. The median size of localities was 3,953, 4,097 and 4,427 inhabitants, respectively, in 1967, 1984 and 1994 (Rafiq and Assefa, 1987; Selome and Assefa, 2010).

Table 8.1 presents population sizes and growth rates for the top twelve Ethiopian cities. The data come from three different censuses (1984, 1994 and 2007 censuses). All of the cities registered significant annual growth rates during the inter-censal periods 1984–1994 and 1994–2007. However, the rate of growth was much higher during the inter-censal period 1984–1994 than the period 1994–2007 due, most likely, to the various civil conflicts which caused a large influx of in-migrants from the war-affected areas (Golini et al., 2001).

During 1984–1994 decade Jijiga was the fastest growing city (growing at 8.2% per year) followed by Hawassa (6.1%), Bahr Dar (5.4%) and Dire Dawa (5.2%). However, Hawassa was the fastest growing urban center in the 1994–2007 period followed by Jijiga, Shashemene and Gondar. Bishoftu was the slowest growing city among those with a population of 100,000 or higher (growing at 2.6% per year) between 1984 and 1994. Mekele was found to be the slowest growing city with a growth rate of only 1.9% per year between 1984 and 1994. In general, most of the cities (67%) have recorded growth rates of 3% or higher over the 24 years since the first national census of 1984 (Table 8.1).

The inter-censal period considered in Table 8.1 spanned the last 8 years of the Derg and a decade and half of economic liberalization and market reform under the current government. It would be interesting, therefore, to know if the two regimes

Table 8.1 Population sizes and growth rates of principal towns and cities between the last three census (population 100,000+) 1984–2007

Urban centers	Population			Growth rate		
	1984	1994	2007	1984–1994	1994–2007	1984–2007
Addis Ababa	1,423,182.0	2,084,588.0	2,738,248.0	3.6	2.1	2.8
Dire Dawa	99,980.0	173,188.0	232,854.0	5.2	2.3	3.6
Adama	77,256.0	127,842.0	222,035.0	4.8	4.2	4.5
Gondar	80,675.0	112,249.0	206,987.0	3.1	4.7	4.0
Hawassa	36,367.0	69,169.0	158,273.0	6.1	6.4	6.3
Bahr Dar	54,773.0	96,140.0	155,355.0	5.4	3.7	4.4
Jijiga	24,716.0	58,360.0	125,584.0	8.2	5.9	6.9
Mekele	62,668.0	96,398.0	122,650.0	4.1	1.9	2.9
Jimma	60,218.0	88,867.0	120,600.0	3.7	2.3	3.0
Dessie	71,565.0	97,314.0	120,029.0	2.9	1.6	2.2
Shashemene	31,884.0	52,080.0	102,062.0	4.7	5.2	5.0
Bishoftu	55,657.0	73,372.0	100,114.0	2.6	2.4	2.5
Total	2,078,941.0	3,129,567.0	4,404,791.0	3.9	2.6	3.2

Source: Schmidt and Kedir (2009).

had differing impacts on urban growth rates in general and urbanization trends in particular. Did the urban housing, land reform, and economic policies espoused by the Derg have the unintended consequence of limiting movements and individual choices thereby keeping migration, both short- and long-distance, to a minimum? An online source contends that “restrictions on travel, lack of employment, housing shortages, and social unrest in some towns during the 1975–1980 period also contributed to a decline in rural-to-urban migration” (<http://www.country-data.com/cgi-bin/query/r-4415.html>). The relatively low growth rates of Dessie, Bishoftu and Addis Ababa during the 1984–2007 period appears to justify this statement.

Three cities - Jijiga, Hawassa and Shashemene - registered the highest growth rates during the 1984–2007 period. Hawassa’s growth rate of 6.3% per year for the period is the second highest after Jijiga’s but this increase is less due to physical expansion and more in response to migration from rural origins (nearly 5% per year) with a doubling time of 15 years (Samson and Mulugeta, 2009). Shashemene more than tripled its size between the first and last census while Jijiga grew five-fold from a modest size of just over 23,000 in 1984 to its current size. Adama and Bahr Dar nearly tripled in size between 1984 and 2007.

Addis Ababa is still the primate city but there are indicators suggesting that its functional primacy is diminishing somewhat. Figure 8.5 presents three measures of this tendency: (i) Percentage of total population urban, (ii) Addis Ababa’s population as a percentage of total urban population and (iii) Addis Ababa population as a percentage of the country’s total. Rates of change for these measures between the three census years show that urbanization has been increasing while the primacy of Addis Ababa has been declining. Addis Ababa’s relative decline in primacy could be attributed to the emergence of regional capitals as competitors.

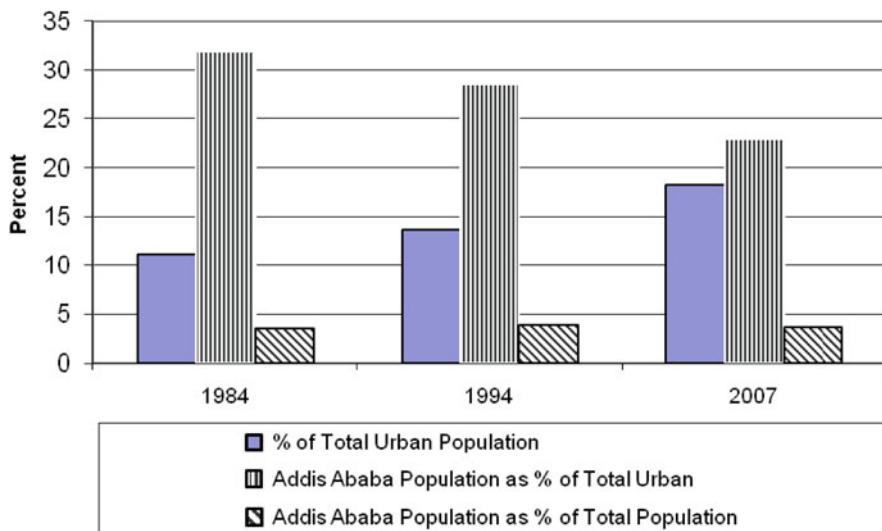


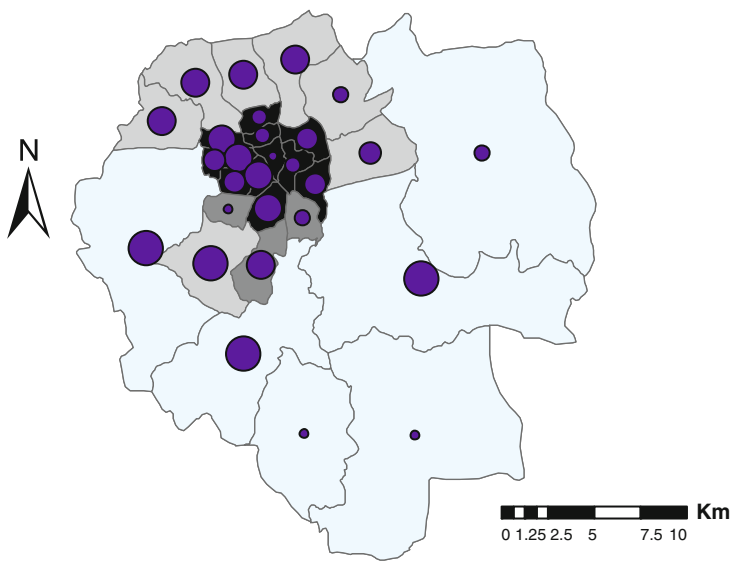
Fig. 8.5 Addis Ababa city population as a percentage of total urban population and total country population, 1984–2007 (Source: CSA, 1984, 1994; 2008a)

Figure 8.6 shows population densities in various zones of Addis Ababa. The data come from CSA’s medium variant (2008) population projection by *Wereda*. Densities in the city ranged from 658 people per square kilometers around the peripheries to 87,420 persons per square kilometer in the core business districts. It is not difficult to imagine what life is like for residents of the highest density neighborhoods which got to be this way not as a result of vertical city growth as in most developed cities but rather in response to excessive overcrowding in the slums of the city center.

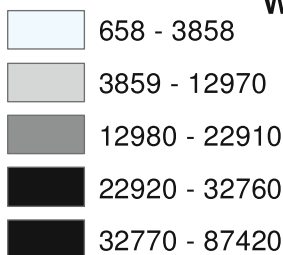
8.6.2 Urban–Urban Interactions

It can be argued that, of all similarly-sized regions in Ethiopia, the region shown in Fig. 8.7 has the most connectivity as well as the highest number of urban centers and populations per unit area. The proportional circles represent the population sizes of named cities and towns. Geographically, much of the featured region falls within low-lying *Weredas* and Zones, including the Rift Valley, with moderate to high temperatures and varied amounts of annual precipitation.

The all-weather road networks and relative availability of urban service centers represent the best-case scenario of urban connectivity in the country. It is also exhibit number one for what is wrong with urban connectivity in Ethiopia; namely, the predominantly radial network structure insuring linkage with distant cities while road links with neighboring urban centers remain absent or very minimal. Many road links seem to end in the middle of nowhere, but other research might show that these are not dead-end connections devoid of a functional purpose.



Density (Persons per km square)



Wereda population size

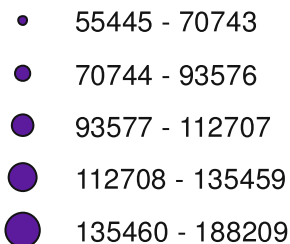


Fig. 8.6 Population densities, sub-cities of Addis Ababa

The fabled hierarchical structure in which an urban center is linked to a number of nearby centers that are lower in size (and are in turn linked to localities of even smaller sizes) is not present. A diagrammatic scheme (Gete, 2008: 22) proposed such a scheme as a workable framework towards understanding the structural connectivity that Addis Ababa has with the surrounding service centers. Figure 8.7 is proof that such a structure does not exist at the present moment, but the model can be viewed as a future working guide for regional and urban planners wishing to optimize the urban interactivity space in central Ethiopia.

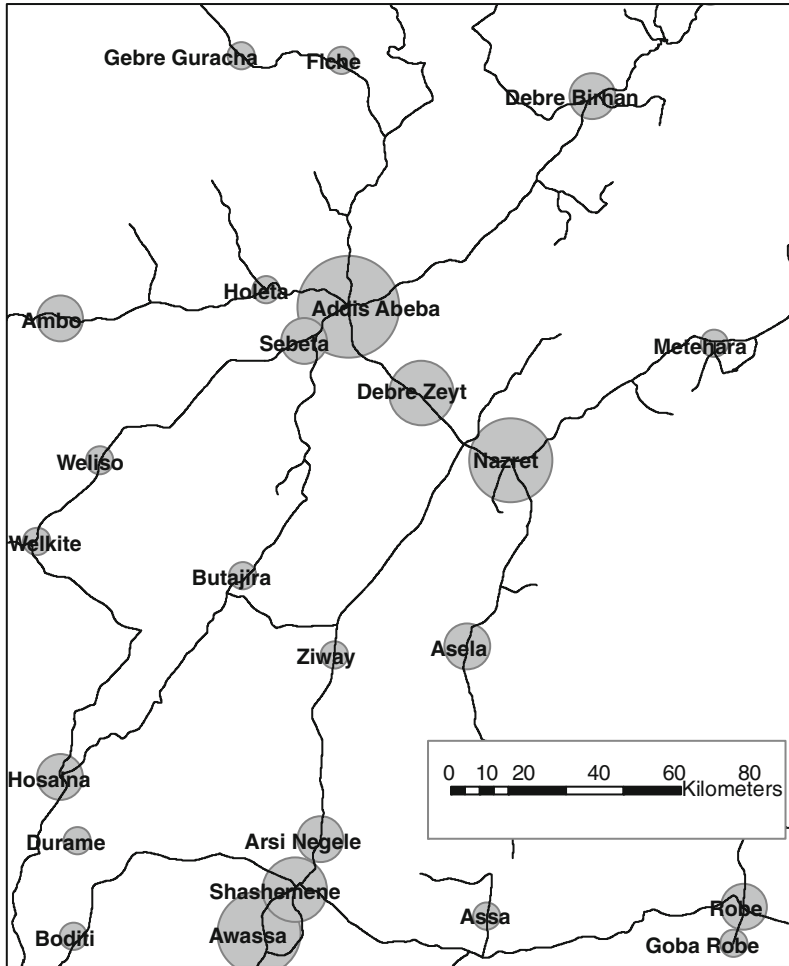


Fig. 8.7 Urban centers and all-weather road networks in central Ethiopia (Source: based on base maps (shapefiles) from the Department of Geography, Addis Ababa University)

8.7 Discussion and Conclusion

Migration underlies much of the nation-building activities of the nineteenth and twentieth century Ethiopia representing the single most important cohesive force bringing together members of different ethnic groups and geographic backgrounds. Some of the ongoing regional political tensions can, therefore, be construed as emerging centrifugal tendencies seeking, among other things, to undo the historic role of migration as a force of national territorial consolidation. We have not delved

much into historical significances of migration in nation building, but have instead focused on its transformative impacts on the well-being of individuals and groups as well as its role as the main driver of urbanization and accelerated urban growth over the last half century. In the process, we have learned that the majority of today's Ethiopian migrants are driven primarily by rational economic considerations based on personal and family decisions and perceived gains. All forms of migration – rural–urban, rural–rural, urban–urban and urban–rural – are taking place all over the country. Three governments have sequentially tasked themselves with the objective of sponsoring most *rural–rural* migrations from drought-prone northern Ethiopia to the rest of the country, but the other three forms of movement still remain within the purview of individual families or persons.

Current migration streams are dominated by labor migration – mostly young males (rural–rural, rural–urban, urban–urban), the landless, job transfers, environmental refugees, the internally displaced, rural poor, urban poor, participants of government resettlement programs, and newly-married females (mostly rural–rural).

Nearly a fifth of Ethiopians fit the category of “migrants” with much higher percentages in urban areas (49.3% migrants) than rural locations (15%). In a 1999 study, the lowest percentages of in-migrants were in Amhara and SNNP, and females were found to be more mobile than males. Ongoing trends include a rise in the proportion of urban-to-rural migrants most of whom are likely to be return migrants. This represents a clear departure from historical trends of a predominantly rural-to-urban flow; a trend unlikely to be the norm in other African countries.

The 1998 DTRC Survey gave us valuable insights into migrant selectivity by separately focusing on temporary and permanent migrants (DTRC and PSTC, 1998). For example, less than a third of females describing themselves as permanent migrants had yet to marry at the time of the survey while two third of females who considered their status as temporary were never married. Those who described themselves as permanent migrants were significantly better educated than those who thought of themselves as temporary residents. Urban migrants were better educated than rural migrants.

The proportion of temporary migrants involved in three or more lifetime moves increases sharply with increasing age but a more complicated picture was noted for permanent migrants. Mberu (2006) used the same survey data to answer the question of whether migration in Ethiopia really benefits migrants. He found what he termed “significant living condition advantage of permanent and temporary migrants over non-migrants” but concluded that once the effects of a number of confounding variables have been teased out “no statistically significant independent association exists between migration status and living conditions”. We believe, however, that given internal migration's transformative impacts on the lives of individuals, families, and the country at large over the past several decades and centuries, a reexamination of Mberu's (2006) statistical analyses as well as conclusions is warranted.

With only 16% of the population living in Ethiopia's cities and towns, the level of urbanization is low even by East African standards. Growth trends between the 1984 and 2007 censuses showed far greater gains by small towns followed by

medium-sized towns. Gambella doubled its population three times while Mekele, Awassa, and Jijiga registered substantial increases. Addis Ababa's annual growth rate for the inter-censal period was reported to be less than the national average. We have urged a reexamination of Addis Ababa's census findings. Moreover, given the steep density gradient outwards from the core business districts of the capital to the sparsely populated outer limits, it is conceivable that the 2007 population counts were less complete in the peripheries where accessibility is limited. This may have been the case during the first two censuses also.

Finally, our examination of urban distribution patterns in central Ethiopia shows that connectivity between urban centers remains very minimal due to insufficient numbers and lengths of all-weather roads as well as the radial network of national transport which has ensured accessibility between distant places while neighboring cities and towns remain unconnected. We have also examined the applicability of central place theory to the Ethiopian reality but have found no proof of its existence as the distribution of urban centers examined (central Ethiopia) bears no resemblance to the ideal theoretical pattern of a big city surrounded by hexagonally arranged medium-sized cities each of which are surrounded by yet smaller cities and towns.

8.8 Policy Implications and Research

When it comes to migration and urbanization, Ethiopia, like the rest of Africa, is between the rock and a hard place. Should the country encourage or discourage migration and urbanization? Migration and urbanization add fodder to a resurgent national economy, thereby playing the role of a key catalyst in both urban and rural renewal while acting as a positive and powerful economic force. However, the two play an exact opposite role under poor or declining economic climates by straining urban resources and by causing further economic decline in both the sending and receiving regions. With this in mind, we suggest that policymakers:

1. Launch a carefully designed nation-wide base-line migration survey (the key word here is nation-wide) to provide a cross-sectional view of the levels and characteristics of migration and migratory streams in all corners of Ethiopia's highland and lowland *Weredas* and Zones. However, future comparative research and analysis of results will continue to be hampered by boundary changes unless deliberate measures are taken to end the practice and declare Ethiopia a country that has now matured administratively with no further need for internal boundary changes. Moreover, use of the computer technology would be difficult without standardization of place names (both urban and rural) as we have discovered while working with GIS base maps of Ethiopian urban centers and *Weredas*.
2. Launch a well-designed study of the urbanization process in Ethiopia – past and present – and the socioeconomic impacts (positive and negative) of being one of

the least urbanized countries on earth. Is it possible that Ethiopia is at once under- and over-urbanized? Over-urbanized in the sense that it is not able to provide the most basic of essential urban services such as housing, jobs, sanitation, and health care to the 16% or so of its population currently residing in small towns and big cities.

3. Revisit and revise past policies that discouraged migrations by focusing on possible impacts on plot sizes and environmental stress as well as deepening poverty in the countryside, and the consequences of immobility on urban and rural jobs, production systems, rural and urban incomes, markets, investments, labor circulation, trade, innovation, skill and technology transfers, community organizations, social cohesion, and national unity or disunity.

References

- Adepoju, A. and Hammar, T. (1996). *International Migration in and from Africa: Dimensions, Challenges and Prospects*. Dakar and Stockholm, Population, Human Resources and Development in Africa, and Center for Research in International Migration and Ethnic Relations.
- Bekure Wolde Semayat. (1999). For a More Urbanized Ethiopia. In *Migration and Urbanization in Ethiopia*. Addis Ababa, Association of Ethiopian Geographers, pp. 1–28.
- Central Statistical Agency (CSA). (2008). Summary and Statistical Report of the 2007 Population and Housing Census. Addis Ababa, Population Census Commission.
- Central Statistical Authority (CSA). (1991). *The 1984 Population and Housing Census of Ethiopia: Analytical Report at National Level*, Vol. II. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority (CSA). (1999a). *The 1994 Population and Housing Census of Ethiopia: Results at Country Level*, Vol. I Analytical Report. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority (CSA). (1999b). Statistical Report on the 1999 National Labour Force Survey, March 1999, Statistical Bulletin 225. Addis Ababa, Central Statistical Agency.
- Cour, J.M. (2002). Sustainable Development and Poverty Reduction Strategy Revisited: A Demo Economic Conceptual Framework and Its Application to Ethiopia. In *The Ethiopian Economy*. Addis Ababa, Ethiopian Economics Association, pp. 11–45.
- Crush, J., Frayne, B., and Grant, M. (2006). *The Regional Network on HIV/AIDS, Livelihoods and Food Security*. (RENEWAL) International Food Policy Research Institute (IFPRI). Johannesburg, Southern African Migration Project (SAMP).
- Demographic Training and Research Center (DTRC) and Population Studies and Training Center (PSTC). (1998). *Southern Nations, Nationalities and Peoples Region Community and Family Survey: 1997*. Addis Ababa, Addis Ababa University and Brown University.
- Demographic Training and Research Center (DTRC) and Population Studies and Training Center (PSTC). (2000). *Migration, Gender and Health Survey in Five Regions of Ethiopia 1998*. Addis Ababa, Addis Ababa University Institute of Development Research.
- Deshingkar, P.A. and Grimm, S. (2004). *Voluntary Internal Migration an Update*. Paper Commissioned Jointly by the Urban and Rural Change Team and the Migration Team Within the Policy Division of the British government's Department for International Development. Overseas Development Institute, September 2004.
- Deshingkar, P.A. and Grimm, S. (2005). *Internal Migration and Development: A Global Perspective*. International Organization for Migration (IOM) Migration Research Series No. 19.
- Djamba, Y.K. (2001). *Gender Differences in Motivations and Intentions for Move: Ethiopia and South Africa Compared*, July 16–21, 2001. Abidjan, International Colloquium Gender, Population and Development in Africa.

- Djamba, Y.K., Goldstein, S., and Goldstein, A. (2000). Migration and Occupational Change During Periods of Economic Transition: Women and Men in Veitnam. *Asian and Pacific Migration Journal* 9(1): 65–92.
- Emebet Kebede. (2002). Ethiopia: An Assessment Of The International Labour Migration Situation: The Case Of Female Labour Migrants. *Series On Women And Migration*. Genprom Working Paper No. 3. Gender Promotion Programme. Geneva, International Labour Office.
- Gete Zeleke, Trutmann, P., Betre Alemu, et al. (2008). *The Role of Rural–Urban Linkages to Transform Subsistence Agriculture and Improve Environment: The Case of Ethiopian Highlands*, July 2–4, 2008. Bern, Switzerland, Global Mountain Programme (GMP) International Conference on Research for Development (ICRD).
- Golini, A., Mohamed Said, Casacchia, O. et al. (2001). *Migration and Urbanization in Ethiopia, with Special Reference to Addis Ababa*. An In-Depth Analysis of the 1994 Population and Housing Census of Ethiopia. Addis Ababa and Roma, Central Statistical Authority and Institute for Population Research. <http://www.country-data.com/cgi-bin/query/r-4415.html>
- Kloos, H. and Aynalem Adugna. (1989). Settler Migration During the 1984/85 Famine in Ethiopia. *Geo Journal* 19(2): 13–127.
- Lall, V.S., Selod, H., and Shalizi, Z. (2006). *Rural–Urban Migration in Developing Countries: A Survey of Theoretical Predictions and Empirical Findings*. World Bank Policy Research Working Paper 3915, May 2006.
- Markos Ezra. (2001). Demographic Responses to Environmental Stress in the Drought-and Famine-Prone Areas of Northern Ethiopia. *International Journal of Population Geography* 7(3):259–279.
- Mberu, B.U. (2006). Internal Migration and Household Living Conditions in Ethiopia. *Demographic Research*, 4(21): 14–21. <http://www.demographic-research.org/Volumes/Vol14/21/14-21.pdf>. Accessed 25 December 2009.
- Rafiq, M. and Assefa Hailemariam. (1987). Some Structural Aspects of Urbanization in Ethiopia. *GENUS* LIII(3–4): 183–204.
- Samson Gebre Mariam and Mulugeta Betre. (2009). Level and Differentials of Fertility in Awassa Town, Southern Ethiopia. *African Journal of Reproductive Health* 13(1): 93–112.
- Schmidt, E. and Kedir Mohamed (2009). Urbanization and Spatial Connectivity in Ethiopia: Urban Growth Analysis Using GIS. *ESSP-II Discussion*.
- Selome Bekele and Assefa Hailemariam. (2010). Population Dynamics and Environment in Ethiopia. In Edward, Sue (ed), 2010. Ethiopian Environment Review, No. 1. Forum for Environment, Addis Ababa.
- Tarver, J.D. (1996). *Demography of Africa*. Westport, CT, Praeger, pp. 91–98.
- Teller, C., Assefa Hailemariam, Tesfayi Gebresellassie, and Ali Hassan. (2009). *Population Dynamics, Food/Nutrition Security and Health in Ethiopia: Delicate Balance of Vulnerability & Resilience*. Marrakech, IUSSP.
- Todaro, M. (1997). Urbanization, Unemployment and Migration in Africa: Theory and Policy. In Todaro, M. (ed.), *Economic Development*. pp. 132–197. New York, NY and London, Longman.
- Transitional Government of Ethiopia (TGE). (1993). *The National Population Policy of Ethiopia*. Addis Ababa, Office of the Prime Minister.
- United Nations (UN). (1958). *Multilingual Demographic Dictionary*. New York, NY, Department of Economic and Social Affairs.
- World Bank. (2007). *Urban Labour Markets in Ethiopia: Challenges and Prospects*. Vol. I. Synthesis Report.

Chapter 9

Rural–Urban Linkages in Ethiopia: Insuring Rural Livelihoods and Development of Urban Centers

Aynalem Adugna and Assefa Hailemariam

Abstract We show that the country’s rural–urban linkages remain weak due to the low degree of urbanization, exclusive promotion of urban or rural-based developments by various Ethiopian governments at one time or another (at the expense of the other), insufficient trade links between towns and the countryside, lack of tenure security, and the continued buffeting of the national economy by changes in the natural climate and the global economic climate. And yet, migration-driven rural–urban linkages as well as nascent functional and structural integration of urban and rural Ethiopia are facilitating socioeconomic growth by providing an exit out of poverty and thereby significantly and positively impacting people’s well-being and livelihoods. Our analyses show that urban–rural linkages in Ethiopia insure the survival and development of both urban centers and rural livelihoods. They also show that sustainable rural development is impossible without sustainable urban growth. The urban service sector’s role (especially the informal sector), has been increasing steadily. By absorbing migrant laborers and supplying needed products relied upon by rural compatriots the informal sector in urban Ethiopia is providing the most jobs. It is also generating a significant proportion of urban incomes while providing the foundation upon which the rural–urban linkage is built.

Keywords Urban · Structural/functional linkages · Migration · Land tenure security · Geographic information system

9.1 Introduction

While rural–urban linkages in Ethiopia take the form of sustained human mobility, among others, the extent to which individual characteristics of migrants or group composition of migratory streams in the country adhere to conventional models of

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migrant selectivity in developing countries are yet to be ascertained. Individual topics of migration, urbanization, and their impacts on both rural and urban economies have been analyzed separately from micro scales to global levels but, here too, studies on Ethiopia are scarce. Even less prevalent are analyses of linkages between urban and rural areas, and of their respective economies.

The rural–urban linkage and subsequent economic development of Western Europe and the United States was closely associated with, and in fact defined in terms of, the movement of labor from rural to urban areas through the gradual relocation of labor out of agriculture to industry. This is clearly explained first by Lewis and later on by Lewis, Fei and Ranis; hence, the L-F-R model of development theory (cited in Todaro, 1976).

Limited empirical explorations of spatial and temporal dynamics in the ever-changing landscapes of rural–urban interactions (with migration as a critical component) exist, but often at global scales (UNDP, 2000; UN, 2005). Internationally, the few region and country-specific publications on rural–urban linkages include works on South Asia (Feldman, 1999), the Amazon region (Barbieri et al., 2007), Nepal (Dhital, 2004), Botswana (Lesetedi, 2003), Mexico (Taylor, 2003), Zambia (Muzvidziwa, 1997) and Ethiopia (Gete et al., 2006). Tegegne's (2006) linkage analysis focused on internal trade – grain from rural Ethiopia and fertilizer as well as other manufactured farm inputs from urban centers – labor migrations, micro finance, remittances, and other resource flows. He also discussed the concepts of production and consumption linkages in the Ethiopian setting, and of backward and forward linkages.

A 2006 rural–urban linkage study in Ethiopia involved two urban centers (Addis Ababa and Shashemene) and three rural locations – Turufe Kecheme (Oromiya), Yetmen (Amhara), and Imdibir (SNNPR). The linkage types identified in the findings included community linkages – marketing, service, work, religion, recreation, and social activities (ESRC, 2006). The analysis showed one of the important windfalls of linkage to be remittances flowing in the urban-to-rural direction to finance debt repayment, education, medical expenditures, purchase of oxen and farm implements as well as “small-stock and other household assets” (ESRC, 2006).

A study on livelihood types in SNNPR by the Early Warning System (EWS) of the USAID (2006) identified well-developed commercial links between rural communities and urban centers as the primary engine of sustainable social and economic interdependence. Marketable agricultural products from rural SNNPR included *enset*, cereals, pulses, oilseeds, root crops including ginger, honey, coffee, and chili peppers. In addition, the mildly stimulant *chat* (*Catha edulis*) is being marketed as a favored products (USAID, 2006). The city of Awasa (the regional capital) provides employment to rural people living nearby and seasonal migrants, but equally important linkages have also evolved with other nearby urban centers including Shashemene, Zway and Nazareth, as well as the nation's capital, Addis Ababa. Northern SNNPR where the Gurage, Silte, and Hadiya live, “have the most intense employment relationship with Addis Ababa” (USAID, 2006). The study concludes that the symbiotic rural–urban interdependence in this region has resulted

in much lower percentages of food-insecure residents in most Weredas of this region (despite its high density and relatively small plots of farmlands) than in regions to the north and east.

Similar studies of Livelihood Integration Units (LIU) by USAID (2008) in Tigray point to greater impacts of market forces on people’s livelihoods and ability to withstand shocks. For instance, in the zone identified as the West Central Teff Livelihood Zone, serious land use limitations are posed by “lack of oxen for traction power” forcing households to rely on urban markets for food as well as wages (USAID, 2008). It is estimated that 50–60% of staples are bought, and 40–50% of wages are earned on the labor market. Another example relates to the total disruption of livelihoods in northern Tigray due to border closures in the wake of the Ethio–Eritrea war (1998–2000) which led to the suspension of trade in crops, livestock, and salt following the closure of Asmara City to thousands of gainfully employed Tigrayans, both rural and urban (USAID, 2008).

Migration-driven rural–urban linkages facilitate economic growth by providing an exit out of poverty and thereby significantly and positively impacting people’s well-being and livelihoods. This has been documented in Asia (Deshingkar and Sven, 2004). Similarly, internal migration in Ethiopia can play an important role in poverty alleviation. Questions are being raised, however, regarding recent trends in the volume and character of rural-to-urban flows and its impacts on rates of urban growth. In particular, the role of land ownership and tenure security (or lack thereof) is being examined. Solomon and Mansberger (2003) have argued that the land policy in Ethiopia was hampering physical mobility including rural–urban migrations, and thereby, constraining social mobility. Dessalegn (2009) also cited the newly revised Amhara killil land laws precluding peasants from moving because holders may lose their land rights if they are absent from their farms and the land is left idle for three consecutive years or longer. Existing rules allow land rentals but only for a short period of time. Extended absences have to be registered with the kebele. Solomon and Mansberger (2003) note the government’s rebuttal – that under private ownership of land, farmers would resort to distress sale of land and flock to urban centers only to be confronted by urban social ills that are typical of such moves. In other words, in a debate over land tenure and land policy in Ethiopia, one justification often given against privatization of land is the fear that farmers may sell their land and migrate to urban centers where there would be inadequate employment opportunities, thus resulting in grave social and economic consequences. However, a study by Berhanu and Berhanu (2005) has shown that farmers’ propensity to sell land is low, and that an average household is likely to sell land with only 8.6% probability. Given the shrinkage in the size of rural land holdings in Ethiopia from 0.5 ha per person in the 1960s to an average of 0.2 ha per person in 1999 (Teller et al., 2009; World Bank, 2007), and the fear of losing it all if one migrates, the fact appears to be that a sizeable portion of landless peasants remain “stuck in unsustainable rural livelihoods” in rural Ethiopia (Solomon and Mansberger, 2003). Tegegne (2006) has also weighed in by stressing that elements of the rural land tenure policy in Ethiopia: (a) pose a great threat to enhancing rural–urban linkage (b) discourage migrations to urban areas “thereby limiting the flows of people”, and (c) deny small

urban entrepreneurs the opportunity to engage in rural farming investments. Current government efforts to address questions of tenure include the issuance of land certificates (Samuel, 2006a). As a result, Ethiopia's regional states have begun the process of land registration and certification (Sander van Hooft, 2009). However, there is no evidence that land registration and certification have brought peasant empowerment and autonomy. Indeed, some of the institutional changes at the grass-root level accompanying land certification have enhanced the authority of the state over the farm households. In sum, land certification has failed to provide peasants the robust security they had been seeking for generations (Dessalegn, 2009).

9.2 Background

The great majority of the rural population lives in the *Woina Dega* and *Dega* altitudinal/ecological zones above 1,500 m (see Fig. 9.1). The decision by the Central Statistical Authority to publish limited data on the 2007 census (CSA, 2008) has constrained our analysis of the rural urban linkages. Basic information such as the total number of urban centers and the numbers in various size-classes cannot be discussed here with authoritative certainty. Only 58 “towns” and the cities of Addis Ababa, Dire Dawa, and Harari are mentioned in the report. Figure 9.1 is based on the 2007 *Wereda* census results for rural Ethiopia (CSA, 2008) and the 2008 projections for urban centers based on the 1994 census (CSA, 2006). This produced a total of 101 urban centers with a population of 20,000 or greater. Rural densities (persons per square kilometer) ranged from a low of 1 in Meda Wolabu, and 2 in Afdera, and Gog *Weredas* to a high of 656 in Dara (Sidama zone) and 722 in Endagign (Gurage Zone). Most high density *Weredas* (400+) are in SNNPR. The 1,400 m contour line (rather than the higher *Woina dega* limit of 1,500 m) is used in Fig. 9.1 because the base-map's contour lines have a 200 meter interval.

9.3 Objectives

This chapter aims to provide a direct and indirect look at rural–urban linkage mechanisms and their development impacts, including production and consumption linkages as well as functional and structural linkages; analyze and review recent trends and research findings on internal migrations in Ethiopia; and offer an interactive theoretical model of rural–urban human mobility linkage mechanisms in the Ethiopian setting, with a focus on underlying socioeconomic forces as mediated by known resource restraints.

9.4 Methodology

A review of the available literature is conducted to elucidate the concepts and benefits of rural–urban linkages in both international and Ethiopian contexts. The Geographic Information Systems (GIS) tools are applied to produce overlays

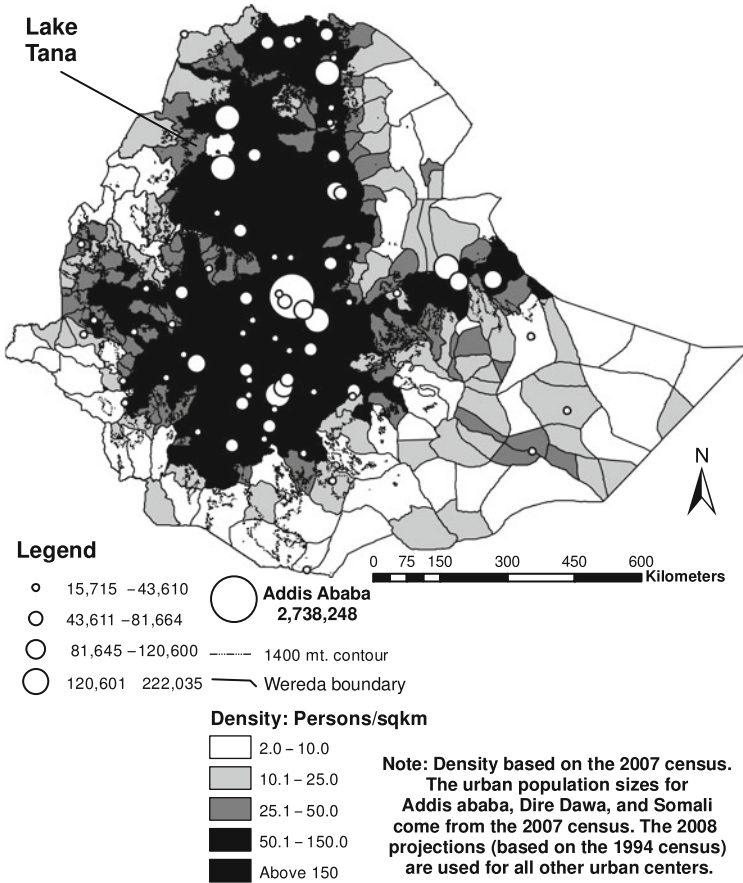


Fig. 9.1 Rural density, urban population size and distribution of cities with a population of 20,000 or more, and the 1,400 m contour (source: based on base-maps (shapefiles) from the Department of Geography, Addis Ababa University, and online publication of population numbers (CSA, 2006, 2008))

reflecting the urban–rural economic interface and provide an indirect look at the locational and functional roles urban centers in Ethiopia are playing in the development of the countryside. The necessary base-maps (shapefiles) were obtained from Addis Ababa University and Internet sources. Maps and tables are used to summarize the distributional aspects and spatial variations in urban–rural linkages as well as show the patterns of human mobility linkages between the two biggest cities in Ethiopia, and the of the rest of the country. A new conceptual framework is presented to provide a summary of the underlying processes driving all aspects of the rural–urban linkages in Ethiopia.

The diagram below is conceived of and put together to help explain, among others, PASDEP’s agenda which includes as immediate priorities both the strengthening of rural–urban mobility linkages and the rebalancing of growth strategies.

There is a new emphasis on small town development and growth poles and on employment creation (MoFED, 2006). Internal migration is not directly addressed by PASDEP although, as suggested by the diagram, increased migration is likely to spur sustained urban growth and increased attractiveness of cities as places with opportunities for personal growth (Fig. 9.2).

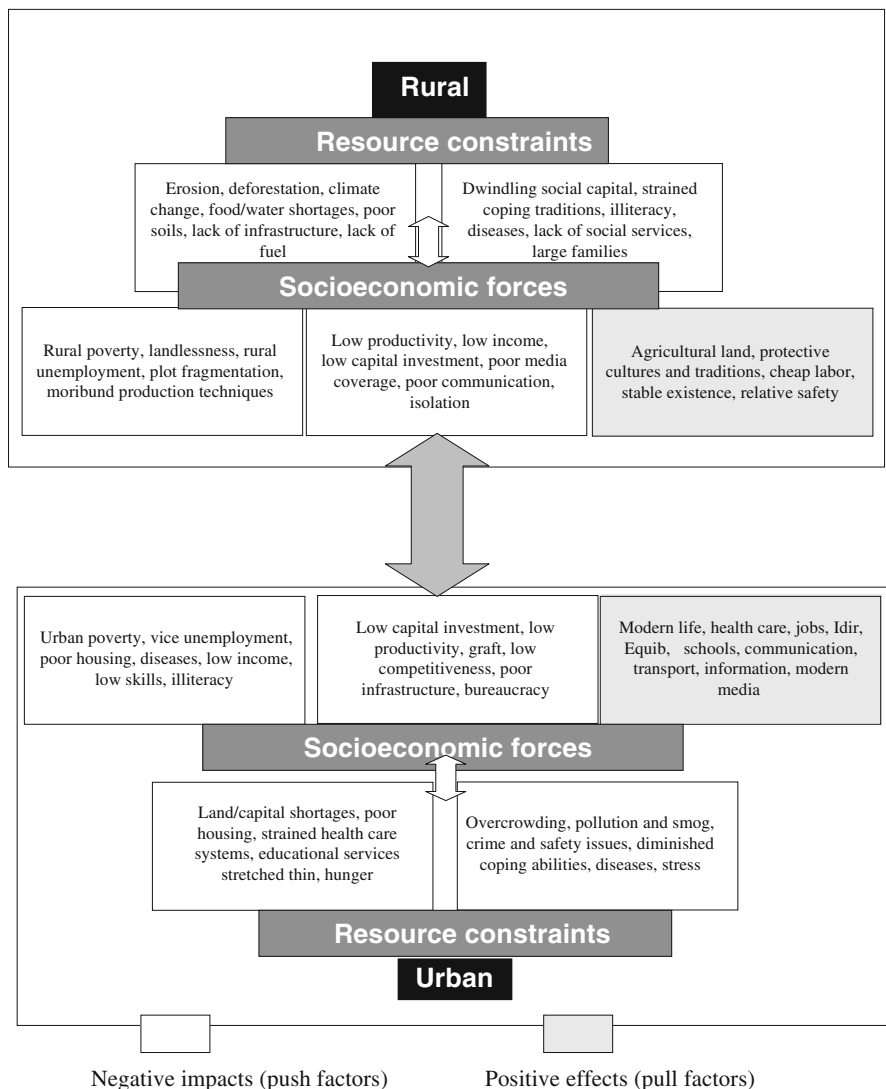


Fig. 9.2 An interactive summary diagram of human mobility linkages between rural and urban Ethiopia

9.5 Rural–Urban Linkages in Ethiopia

It is becoming increasingly obvious that the traditional urban–rural dichotomy is “artificial and counter-productive” (Forster, 2009). The two are intimately connected in a larger web of economic, social, and political systems. It has also been posited (UNDP, 2000) that the understanding of rural–urban interdependence is key for rural–urban economic relationships, national economic resilience, environmental sustainability, governance and citizen participation, poverty alleviation, and overall national economic health. Ethiopia’s Plan for Accelerated and Sustained Development to End Poverty (PASDEP) acknowledges the same, and seeks to adopt the core concepts of urban–rural linkage mechanisms to effect change in the country’s socio-economic future (AFROAD, 2005). As noted by Tegegne (2006), PASDEP seeks to strengthen rural–urban linkages and “take full advantage of synergies”. Similar observations have been made about the predecessor to PASDEP, known as ADLI – Agricultural Development Led Industrialization (Samuel, 2006b). The national population policy of Ethiopia (1993), however, has a goal of reducing the rate of rural to urban migration, and of ensuring spatially balanced population distribution patterns with a view to maintaining environmental security and extending the scope of development activities.

Though very crucial in the understanding of rural and urban development, research on rural–urban linkages is in its infancy in most countries including Ethiopia. A summary publication of a conference on rural-urban linkage in Ethiopia sought to map-out future research methodologies and strategies with participants putting forth initial study proposals including conceptual frameworks (Gete, 2006, Tacoli, 2006), future research directions (Tegegne, 2006), the role of small urban centers (Demese, 2006) natural resource management (Carucci and Yihenew, 2006), and other important areas of urgently needed research.

Feleke’s (2006) work on hunger, poverty, and famine in five rural, and two urban sites in Ethiopia, is a powerful testimony to the transformative potentials of rural–urban linkage in Ethiopia, but only if allowed to flourish through natural evolutions of market and economic forces rather than hasty application of policies that are not always evidence-based. Feleke et al. (2006) the links between a rural study site in Oromiya – Turufe Kecheme- and a near-by urban center – Shashemene – as follows:

“[Turufe Kecheme’s links] with Shashemene are very strong involving the purchase of agricultural inputs (fertiliser, seeds, pesticides, farm equipment), tools, crops (potato and maize seed, red peppers), food (notably ground peas), other basic necessities such as kerosene, salt, sugar, and coffee, kitchen equipment, clothing, consumer goods (radios, watches, tape recorders) and sale and purchase of livestock and cereal crops. There are also schooling and marriage linkages as well as visits for recreation, medical treatment and administration.” Feleke et al. (2006).

By the authors’ own admissions, the study sites are not representative of Ethiopia as a whole. They are only snapshots in time, of highly dynamic livelihoods in rural Ethiopia marked by continued upward and downward shifts in people’s coping abilities as they respond to external forces, including climate changes such as ill-timed and variable rainfall amounts. A fully developed linkage reduces vulnerability to

changes in weather patterns in rural Ethiopia and its attendant consequences including famine, dislocation, and loss of livestock. It appears that many of the study sites have well-developed linkages with livelihoods described as “well-off”, “prosperous”, “fairly rich”, etc. (Feleke et al., 2006). These are relative terms, of course. Those described as “vulnerable to famine” could be thought of as cases of insufficiently developed economic ties with surrounding urban centers, and least capable of creating synergies to insure sustainably prosperous livelihoods.

There are continuing efforts to define rural–urban linkages and demarcate its scope and reach (Tacoli, 2004). The operative word in defining rural–urban linkages in any geographic space is “flow” – of people, goods, services, and information – between urban centers and the surrounding countryside. In the Ethiopian context, the “flow” of people includes daily commute, labor circulation, long-/short-distance migrations, and temporary/permanent migrations. The flow of goods between rural and urban Ethiopia include agricultural products from the countryside and manufactured goods from urban centers, which are respectively known as forward and backward linkages (Tegegne, 2006). Information flow relates to exchange of ideas regarding opportunities available in cities, market mechanisms, commodity prices

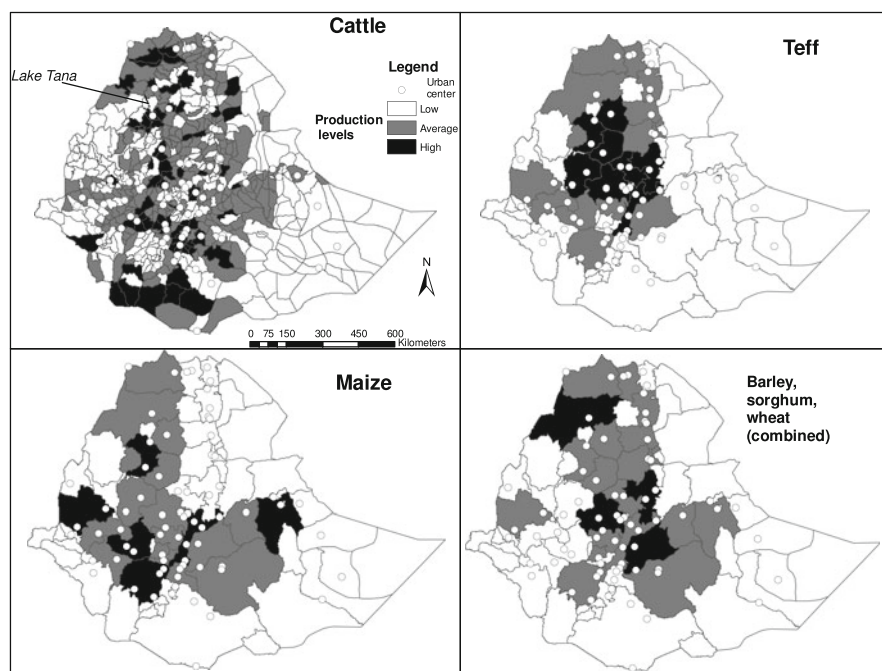


Fig. 9.3 Zones and Weredas with high, medium, and low production of selected agricultural commodities, and major urban centers (population 20,000+) (sources: base maps (shapefiles) Addis Ababa University, Department of Geography and <http://www.maplibrary.org/stacks/Africa/Ethiopia/index.php>. Agricultural data (shapefile) from <http://www.dppc.gov.et/downloadable/map/administrative/>, Population data from: CSA (2006) <http://www.csa.gov.et>

and price fluctuations, etc. The flow of money includes remittances, pension transfers, investments and credits moving in the urban–rural direction (Tacoli, 2004). The “flow” takes place along a continuum of road networks, telephone lines, postal services and other infrastructural assets in the country. In this context, the stage of regional infrastructural development becomes a crucial determinant of the type and level of linkages likely to exist in the various administrative divisions of the country (see Fig. 9.3).

9.6 Findings

9.6.1 Production and Consumption Linkages

Reports of urban agriculture filling gaps in nutritional needs of residents abound (Azeb, 2006). However, urban Ethiopia depends primarily on food shipments from the countryside for its existence, and to a lesser extent, on food aid and imported foods. Given most urbanites’ inability to afford meat, marketable grain forms the bulk of all merchandize being transported on all-weather and dry-weather roads from rural Ethiopia to urban centers throughout the year. A CSA report (quoted in Tegegne, 2006) estimated the volume of marketable grain surplus in rural Ethiopia (excluding pulses and oil crops) at 14 million quintals for 2001/2002 representing 17% of total production. A micro level study of market access and marketing of teff in west Shewa zone of Oromia region (Mesfin et al., 2005) revealed that, farmers, on average, sold 35% of their produce. The remainder is consumed and reserved for seed or given as a gift. Estimates on non-grain marketable commodities such as cattle from rural Ethiopia delivered to urban centers, are unavailable. As an alternative, an overlay of urban centers over a GIS map of major production regions (Fig. 9.1) is prepared to take an indirect look based on production volumes (and concomitantly trade volumes) of four commodities – cattle, teff, maize and a combination of barley, wheat and sorghum – vis-à-vis the location of given urban centers (Table 9.1).

Only the major urban centers located in the primary producing Zones (dark shades) are listed in Table 9.1. Given the direct relationship between price and distance (especially of bulky agricultural commodities), and the links between distance and cost of transport, the listed towns and cities should have the most trade links in commodities selected. Logic would dictate that they also experience the most intense interactions in food trade with the surrounding countryside while supplying the bulk of needed agricultural inputs and other manufactured commodities. The constraints of a primarily bi-pedal human locomotion are obvious, however, and pose ultimate limits to the intensity of interactions summarized in the above paragraph. Walking is still the principal form of transport in Ethiopia with attendant consequences for trade efficiency, communication, production, and distribution. Quoting the Ethiopian Road Authority, Tegegne (2006) reported that close to 80% of Ethiopians depend on traditional modes of transport including “head and back

Table 9.1 List of principal urban centers located in and around high production areas by agricultural commodity types

Agricultural commodity	Principal urban centers located in high production (dark shade) Weredas/Zones
Cattle	Inda Selase, Gonder, Bahir Dar, Dangla, Adet, Nefas Mewccha, Debre Tabor, Dessie, Weldiya, Gimbi, Shambu, Ambo, Holota, Debre Zeit (Bishoftu), Mizan Aman, Agaro, Jimma, Bonga, Asasa, Yirga Alem, Yirga Chefe, Shashemene, Arsi Negele, Hosana, Aleta Wendo, Awasa, Dodola, Jinka, Yabelo, Agere Mariam
Teff	Adis Zemen, Werota, Nefas Mewccha, Adet, Debre Tabor, Bahir Dar, Dangla, Finote Selam, Debre Markos, Mota, Bichena, Nekemte, Shambu, Ginchi, Ambo, Fiche, Gebre-Guracha, Debre Birhan, Shewa Robit, Kemise, Weliso, Welkite, Addis Ababa, Holota, Debre Zeit (Bishoftu), Mojo, Welinchiti, Nazareth (Adama), Sebeta, Metahara, Meki, Zway, Arsi Negele
Maize	Dangla, Bahir Dar, Adet, Bure, Finote Selam, Nejo, Dembi Dolo, Gimbi, Agaro, Jimma, Sawla, Sodo, Sawla, Areka, Sodo, Boditi, Arsi Negele, Zway, Meki, Debre Zeit, Mojo, Welinchiti, Arba Minch, Dira Dawa, Harar, Jijiga
Wheat, Barley, Sorghum	Gonder, Debark, Kemise, Debre Birhan, Fiche, Shewa Robit, Ambo, Ginchi, Weliso, Holeta, Sebeta, Addis Ababa, Arsi Negele, Dodola, Asasa, Asela, Abomsa, Metehara

loading, walking, and animal transport". Further limitations are posed by insufficiently developed road networks. He also noted that the road density in Ethiopia is 29 kilometers per 1000 km² which compares unfavorably with the African average of more than 50 kilometers per 1000 km², and that 70 percent of the country's land area is not served by modern transport networks (Tegegne, 2006). Ethiopia's road density is said to be one of the lowest in Africa with nearly 75% of farms located at least half a day's walk from the nearest all-weather road (Bevan, 1997).

This lends validation to the approach, followed in this section, of identifying places of intense rural-urban linkage based on proximity to regions of high agricultural commodity production. Logic also dictates that these are places of high tradable surpluses in the featured products as well. The same approach can be adopted in the evaluation of trade links in other crops – pulses, legumes, oilseeds, root-crops, fruits, vegetables, coffee, spices, cotton, *enset*, medicinal plants, *gesho*, chili pepper, rice, tobacco, charcoal, firewood, etc. and other food animals like sheep, goat, and chicken. Some products are brought from rural origins to urban markets with rural buyers as target clients. Examples include draught animals donkeys, horses, and mules.

Agricultural know-how and finance, modern farm inputs such as chemical fertilizer, high-yield variety seeds, pesticides, insecticides and a host of other manufactured goods flow in the opposite direction to the crops featured in Fig. 9.3. The

second annual report on the Ethiopian economy (EEA, 2000) showed that national fertilizer consumption has increased since the change in government in 1991. The average use of Urea and DAP, the two most used fertilizer types in Ethiopia, was 59,569 metric tons during the Dergue period (1974–1991) but rose to 218,693 metric tons – an increase of over 367% after 1991. Similarly, Samuel (2006b) uses government figures to show trends in fertilizer usage which increased by 39% from 190,000 tons in 1994 to 264,000 tons in 2003. Use of improved seeds rose from 1,184 tons in 1995 to 17,778 tons in 1999 Samuel (2006b). However production per cultivated hectare is still low (29 kg) as compared, for instance, to 46 kg in Asia (Tegegne, 2006). Given their location in the major producing regions, the urban centers listed in Table 9.1 are clearly the main supply hubs for these value added inputs as well as other manufactured items needed in rural Ethiopia.

The urban economy has been decomposed into two as formal and informal (Todaro, 1997). Although the exact proportions cannot be determined, there is evidence confirming the importance of the informal sector in Ethiopia both in employment creation and contributions to GDP. The service sector is also composed of the formal and informal sectors. The share of the industrial sector in Ethiopia, defined broadly to include non-agricultural commodity production, has remained very low (around 11%). Services on the other hand continue to grow at a steady pace of 8% per annum far exceeding the 1.8% annual growth in agriculture over the last decade (EEA/EEPRI, 2000/01). As a result, the share of services in GDP has exceeded that of agriculture for the first time. These are ominous developments because in a healthy economy the transition would be from an agrarian economy to an industrial one. Part of the explanation for this trend lies in the nature of the service sector in Ethiopia which is predominantly informal. In defining the informal sector, the Central Statistical Authority of Ethiopia uses three main interrelated criteria; namely, firm size, whether or not it keeps books of accounts, and possession of a business license. A person is considered to be an informal sector worker if the business has less than 10 workers, lacks book keeping systems, or does not have a business license from any government agency (Berhanu and Berhanu, 2005).

A recent report on Urban Labor Market in Ethiopia confirms the observation (above) that the informal sector accounts for the majority of employment in Ethiopia (World Bank, 2007). This sector represented 71% of urban employment overall, and 81% of youth employment. Only half of Ethiopia's 2.4 million urban youth were employed in 2005 (World Bank, 2007), about 80% of them in the informal sector. Informal sector jobs in urban Ethiopia range from peddling, domestic service, day labor, tailoring, lottery selling, pottery and weaving, prostitution, collecting garbage and recyclables, car washing, taxi assistant (*Weyala*) to knife-sharpening and shining shoes. Products geared toward the countryside include the manufacture and sale of low-priced shoes including those produced by small unregistered entrepreneurs (Sonobe, et al., 2007), clothing, including second-hand clothing, a sundry of handmade utensils, baked foods, eating and drinking outlets, and informally run sleeping establishments (*Albergo*). By absorbing migrant laborers and by supplying needed products relied upon by rural compatriots the informal sector in urban Ethiopia is providing sustainable livelihoods. In this way, it is likely

generating a significant proportion of urban incomes while providing the foundation upon which the rural-urban linkage is built.

9.6.2 Functional Linkages: Road Networks

The Geographic Information System's (GIS) "select by attribute" command is applied to extract region-specific urban distribution data, and data on regional road networks (Fig. 9.4). Four of the five largest regions – Oromiya, Amhara, SNNPR, and Tigray – are chosen. Over two-fifths of the 953 urban and urban-like localities (population 500 persons or greater) listed in Ethiopia's GIS urban base-maps (shapefiles) are in Oromiya suggesting a higher rural-urban functional connectivity here than elsewhere. There are 397 such localities in Oromiya, 216 in Amhara, 141 in SNNPR, and 88 in Tigray. There is a clear altitudinal dimension to the distribution of the localities as low-lying regions of eastern Oromia, western Amhara, southwestern SNNPR, and western Tigray are dotted by fewer points on the map and by less connectivity than the highland reaches (Fig. 9.4).

The map obviates the clear link between the distribution of urban centers in Ethiopia and the road network and, by extension, the link between urban and rural Ethiopia. A linear pattern of urban locations traces the road networks to the various corners of individual regions. The link is less strong in Amhara where a number of dots on the map have no linear connection to other nodes. Are these historical towns such as former garrison settlements with an urban character that never benefited from the twentieth century expansion of road networks which connected most of the other regional towns? More research is needed to provide an answer.

The most populous region – Oromiya – has over 5,000 km of all-weather roads and nearly 12,000 km of dry-weather roads. Being the region with the least population of the four, Tigray's fourth place standing is not surprising. It is the region with the least connectivity between urban locations on the one hand, and between urban and rural places, on the other.

9.6.3 Human Mobility Linkages: Internal Migration

Understanding the ethnic composition of migrants in rural-urban linkages is important in a country based on ethnic regionalization. A new map (Fig. 9.5) resulting from past migration streams to Addis Ababa (in the center of the country) and to the second largest city, Dire Dawa (in the East), presents a snapshot in time, of the composition by ethnic background of current residents. The data for the two cities come from the 2007 census and are based on responses to a question on ethnic background. The pattern is the result of past migration streams and partially reflects the overall size of the population of the sending regions. Regions with the highest

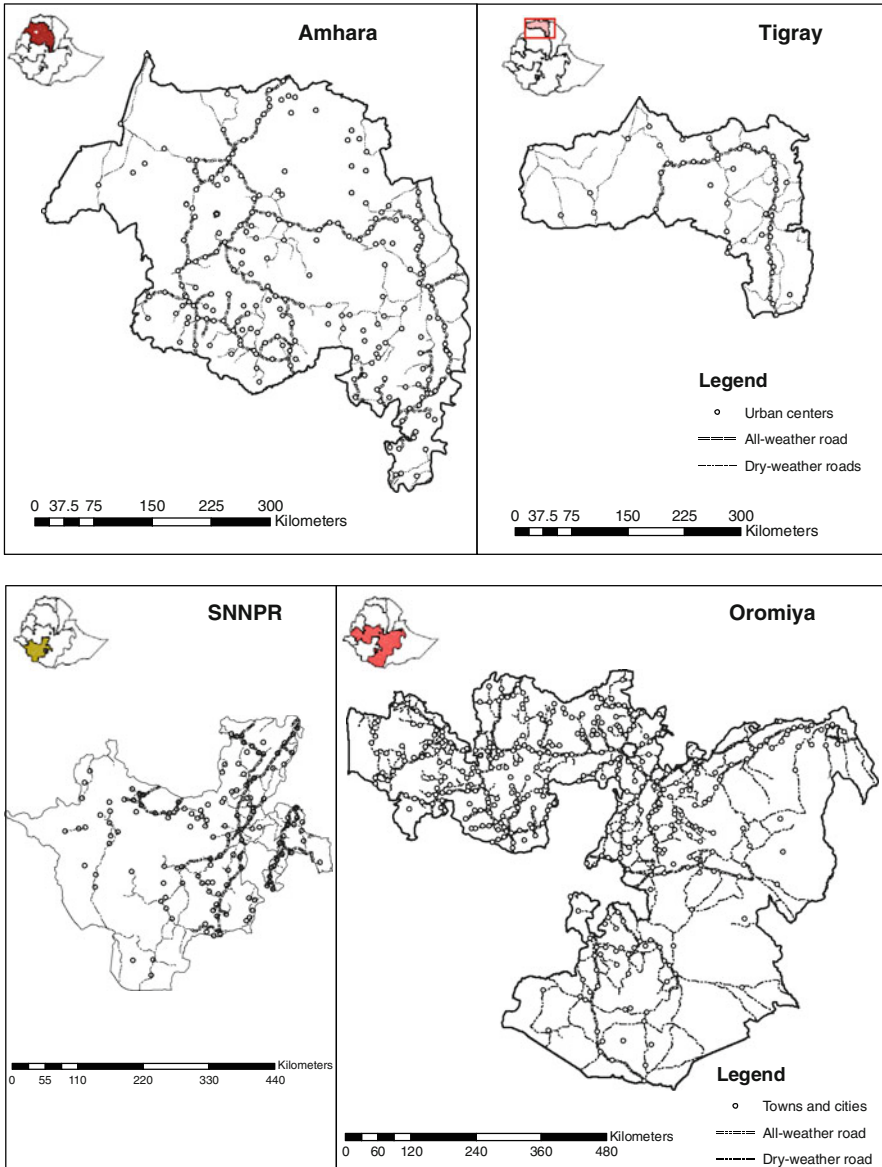


Fig. 9.4 Urban (population above 2000) and urban-like (population 500–2000) locations and road networks in Amhara, Oromiya, SNNPR, and Tigray (sources: base maps (shape-files) from Addis Ababa University, Department of Geography and <http://www.maplibrary.org/stacks/Africa/Ethiopia/index.php>)

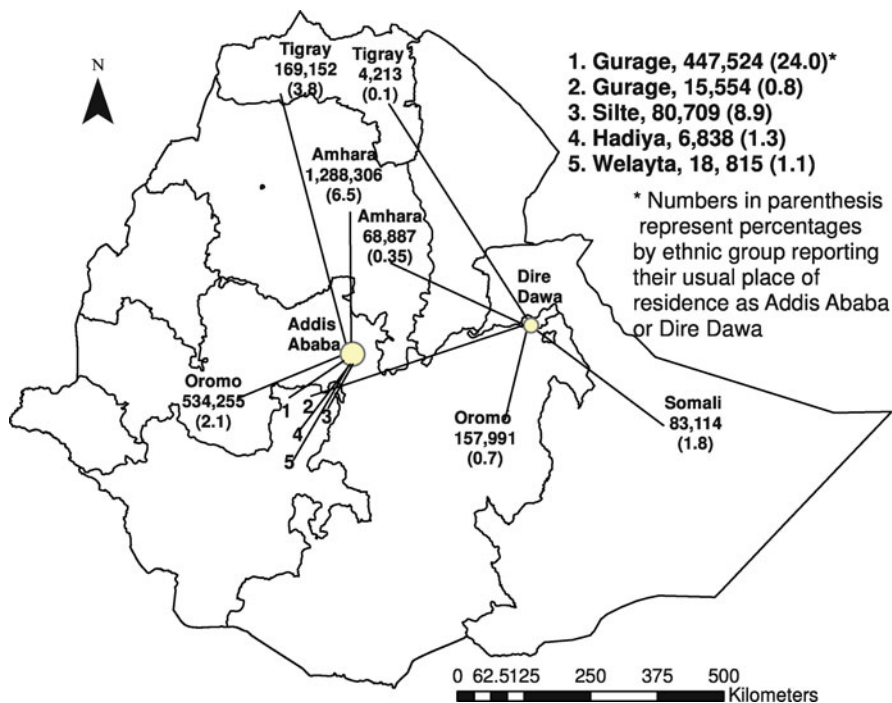


Fig. 9.5 The number of major population groups in Addis Ababa and Dire Dawa (2007) by ethnic background (source: based on CSA (2008), <http://www.csa.gov.et>)

populations have also sent the highest number of migrants to Addis Ababa and Dire Dawa, but Amhara has sent more ethnic members to Addis Ababa than Oromiya, despite the central location of the city in Oromiya and its proximity to other towns and cities in the region. The Figure is based on self-reporting of individuals as having come from a given administrative/ethnic region or sub-region during the 2007 census (CSA, 2009). We have chosen not to use a unidirectional line (with arrow) to show the stream of flow because most migration channels involve regular back-and-forth travels between the two cities and the various regions. Return and circular migrations are also common. The Gurage represent a unique case of a migration stream with substantial migrant populations making their homes in nearby Addis Ababa (24% of all Gurages) as well as distant Dire Dawa. A recent article accurately characterized them as “enterprising people” actively engaged in commercial and business activities all over Ethiopia. (Hemmings 2008) and confirmed the common knowledge that the Gurage represent a unique case of a migration-based rural urban linkage benefiting both the source region (Gurage Zone) and urban Ethiopia. There are very few cities and towns in Ethiopia, if any, that are not helped by the indefatigable work habits and unparalleled entrepreneurial spirits of the Gurage.

9.7 Discussion

Our analyses show that urban–rural linkages in Ethiopia insure the survival and development of both urban centers and rural livelihoods. They also show that sustainable rural development is impossible without sustainable urban growth. Unfortunately, economic development in Ethiopia has tended to be urban-biased until the mid-1990s, and rural-biased in recent years (Tegegne, 2005 quoted in Gete, 2006). The current policy of market liberalization to encourage entrepreneurial spirit in both rural and urban Ethiopia has ended what must have been a difficult period for urban–rural socioeconomic interface brought on by the socioeconomic policies of the last socialist government. It among other things, monopolized trade through control of agricultural products sourced in rural Ethiopia as well as manufactured goods of urban origin including imports (both manufactured and agricultural).

Our analyses and literature review suggest that challenges still persist, and a healthy rural–urban interaction remains an unrealized dream. Ongoing predicaments include, land-tenure policies impeding free movement of people, inability of small urban entrepreneurs to practice small-scale commercial farming in rural areas, weak markets, limited storage and agro-processing capacity, poor infrastructure, communication barriers, limited flow of finance, lack of rural-based enterprises and industries, and traditional agriculture incapable of absorbing industrial inputs. Additional constraints include the monopoly trading of these inputs by a handful urban-based wholesalers and distributors, small and medium-sized service-oriented towns acting more as barriers than as engines of growth for the rural hinterland, and accelerated agricultural land fragmentation which continues unabated (Tegegne, 2006).

On the urban front there is some evidence of recent changes in growth trends commensurate with changes in migration patterns. The diminishing percentage share of Addis Ababa (out of the total urban population) means a reduction in polarity and influence. Continued socioeconomic challenges and serious imbalances and gaps in social services vis-à-vis population growth rates and numbers threaten urban livelihoods. Overcrowding and urban poverty has had demographic consequences reflected in declining birth rates and marriage rates, as well as increases in use of contraception (Sibanda. et al., 2003). A study by Lindstrom and Zewdu (2003) also concluded that fertility declines in the city of Addis Ababa resulted from delayed marriage and control of births both among married and unmarried women. In a similar study of other urban centers (Lindstrom and Berhanu, 1999 quoted in Lindstrom and Zewdu, 2003), reductions in marital fertility during the 1980s were attributed to “the convergence of war, political repression, economic decline, and famine which ravaged the country during the 1970s and 1980s,” suggesting the prevalence of near-Malthusian scenarios of population-resource imbalance during this period. The 1984 famine proved that the problem of population-resource imbalance was even worse in the countryside. Despite recent improvements, an estimated 60% of Addis Ababa’s population still lives below the poverty line (Schmidt and Mekamu, 2009) and nearly a sixth (60,000 out of the estimated 380,000 housing units in the capital) are unlawfully built and occupied (Sisay, 2006). Illegally built permanent structures increased at a rate of 25% per year between 1994 and 2000 (Sisay, 2006). This is a case of city

residents taking matters into their own hands having lost faith in their abilities to navigate and negotiate the bureaucratic red-tape, and having failed to secure financial resources needed to acquire homes that met official specifications and standards. Overall urban poverty rates rose from 33 to 35% (Schmidt and Mekamu, 2009). The impacts on health are less well known but we can speculate that there has been deterioration in quality of life, as gauged by the number of persons per household, unsanitary conditions, and poor hygiene.

9.8 Conclusions

Is internal migration and the resulting rural–urban linkage a net plus for the country with positive social and economic contributions? Is there a circular effect whereby the socioeconomic forces affect migratory streams, volumes, and directions of flow thereby leading to further changes in society and the economy? Is Ethiopia unique when compared to the rest of sub-Saharan Africa? It has the largest population and economy in the East African region. It also has a stable, if somewhat unsettled, political environment based on ethnic federal states whose borders are often construed as outer geographical limits of how far individual migrants can venture out. Moreover, it enjoys a continued history of internal redistribution with few influences, if any, from external forces or legacy factors such as colonialism and colonial railway lines and nodes of urban centers founded by Europeans (a common occurrence in much of the rest of Africa).

Excessive government involvement in population redistribution through planned resettlements schemes and villagization (under the Derg) has negated thousands, if not millions, of individual relocation decisions by instituting imposed choices from above (Hammond, 2008). Existing systems of land-tenure and insecurity of tenure have also resulted in individuals' unwillingness to face the consequences of moving to alternative destinations, short or long-term (Desalegn, 1999). Going back further, evidence of the disruptive effects of interventionist measures on the livelihood of locals can be found in the waning importance of the renowned land/water management and terracing systems of the Konso upon the arrival of northerners, and later on by the 1975 land proclamation and ensuing socialist policies of collectivization (Kloos et al., 2010). The resulting changes resulted in "reduced resilience of local agro-ecological systems, including increasing shocks from drought" (Kloos et al., 2010).

We are unable to answer most of the above questions satisfactorily because data on internal mobility and the resulting rural urban linkages in Ethiopia are outdated (the latest survey year being 1999), and far from adequate. However, a review of the available literature and reported urban growth rates, and the recent 2007 census results (see Chapter 8) tend to suggest that government socioeconomic policies, decentralization of governance, and localized ad hoc rules and regulations, may have impacted rural-to-urban migrations by limiting flows, first to large cities including Addis Ababa, and later to mid-sized cities and small towns. This runs contrary to

conclusions reached and advice given by the International Migration Organization (IMO) that internal migration should not be actively discouraged or controlled, and that it can have a significant role in economic development and poverty reduction. The IMO contends that “policy should instead concern itself with ways of maximizing the potential benefits of migration to the individual concerned and society at large” (Deshingkar and Grimm, 2005).

9.9 Policy Implications

Ethiopia’s history of rural-urban interactions is only a century old, and the history of emerging functional integration of its urban areas and rural economies is even shorter. There is a need for evidence-based policy interventions to research, understand, support, develop, strengthen, and sustain the nascent but crucial linkages between urban centers and the countryside. Feasible policy interventions include:

1. A research database on the nature of rural–urban interactions in Ethiopia – its strengths and shortcomings – would be a crucial starting point to develop a baseline reference against which future progress can be measured.
2. Recent progress in infrastructure development including transportation and communications systems development are likely to provide significant impetus for the furthering of rural–urban linkages in Ethiopia but more needs to be done on both the transportation and communication fronts.
3. PASDEP’s (Ethiopia’s Plan for Accelerated and Sustained Development to End Poverty) goals of monitoring and measuring efficiency of government actions through regular evaluations of those actions should be targeted towards ferreting out policies designed to benefit rural Ethiopian but detrimental to the achievement of a healthy urbanization and urban sector, or vice-versa.
4. Monetary policies should insure affordability of rural products to urban populations and value-added manufactured goods to rural residents by taming inflation and thereby guaranteeing a healthy, symbiotic, and sustainable interdependence between urban and rural Ethiopia.
5. Investment in more cottage industries in the countryside and small-scale manufacturing in small towns and cities insures efficient trading in value-added products while opening avenues of gainful nonagricultural employment in both urban and rural Ethiopia, thereby insuring a healthy rural–urban linkage.

References

- AFROAD – African Forum and Network on Debt and Development. (2005). The Impact of the Poverty Reduction and Growth Facility on Social Services in Ethiopia. Study report. First draft.
- Azeb Girmaye. (2006). The Role of Urban Agriculture in Insuring Food Security: The Case of Addis Ababa. In Gete Zeleke, Trutmann, P., and Aster Deneke (eds.), Proceedings of a Planning Workshop on Thematic Research Area of the Global Mountain Program (GMP) Held in Addis Ababa, Ethiopia, August 29–30, 2006.

- Barbieri, A.F., Monte-Mór, R.L.M., and Billsborrow, R.E. (2007). Towns in the Jungle: Exploring Linkages Between Rural-Urban Mobility, Urbanization and Development in the Amazon, Paper Presented to the PRIPODE Workshop on Urban Population, Development and Environment Dynamics in Developing Countries Jointly Organized by CICRED, PERN and CIESIN With Support from the APHRC, Nairobi, 2007.
- Berhanu Gebre Medhin and Berhanu Nega. (2005). Land and Land Policy in the Eyes of Ethiopian Farmers: An Empirical Investigation. In Alemayehu Seyoum, Assefa Admassie, Befekadu Degefe, Berhanu Nega, Mulat Dneke, Tadesse Biru, Kersemo and Wolday Amha (eds.), Proceedings of the 2nd International Conference on the Ethiopian Economy. Addis Ababa: Ethiopian Economic Association, Volume II, May, 2005: 1–19.
- Bevan, P. (1997). *Poverty in Ethiopia. A Background Paper: March 1997*. Prepared for the Overseas Development Administration, UK. In Befekadu, D., Berhanu, N., and Getahun, T. (eds.), The Second Annual Report on the Ethiopian Economy. Addis Ababa.
- Carucci, V. and Yihewew Zewdie. (2006). Experiences of MERET in Natural Resource Management and Enhancement of Productivity in Ethiopia – an opportunity for RUL. In Gete Zeleke, Trutmann, P., and Aster Deneke (eds.). Proceedings of a Planning Workshop on Thematic Research Area of the Global Mountain Program (GMP) Held in Addis Ababa, Ethiopia, August 29–30, 2006.
- Central Statistical Agency (CSA). (2006). <http://www.csa.gov.et/census> 2007_firstdraft. pdf Accessed 26 March 2010.
- Central Statistical Agency (CSA). (2008). “Population” Online publication (PDF), <http://www.csa.gov.et/27> January 2010.
- Demese Chanyalew. (2006) “Rural-Urban Linkage and the Role of Small Urban Centers in Enhancing Economic Development in Ethiopia” in Gete Zeleke., Peter, T., Aster Deneke (eds.). Proceedings of a Planning Workshop on Thematic Research Area of the Global Mountain Program (GMP) Held in Addis Ababa, Ethiopia, August 29–30, 2006.
- Desalegn Rahmato. (1999). Revisiting the Land Issue: Options for Change, Economic Focus. 2(4) Ethiopian Economic Association, p.2, Addis Ababa, Ethiopia.
- Desalegn Rahmato. (2009). The Peasant and the state: Studies in Agrarian Change in Ethiopia 1950s-2000s. Addis Ababa University Press. Addis Ababa, Ethiopia.
- Deshingkar, P.A. and Grimm, S. (2005). Internal Migration and Development: A Global Perspective. International Migration Organization, IOM Migration Research Series. No. 19.
- Deshingkar, P.A. and Sven, G. (2004). Voluntary Internal Migration an Update. Paper Commissioned Jointly by the Urban and Rural Change Team and the Migration Team Within the Policy Division of the British Government’s Department for International Development. Overseas Development Institute September 2004.
- Dhital, R. (2004). Rural Urban Agriculture Market System: Challenges and Opportunities A Case Study: Eastern Nepal. Masters Project for the Partial Fulfilment of Masters Degree, Yale School of Forestry and Environmental Studies.
- Economic and Social Research Council. (2006). Migration and Rural-Urban Linkages in Ethiopia. Migration Briefing 1: November, 2006.
- Ethiopian Economic Association/Ethiopian Economy Policy Research Institute (EEA/EEPRI). (2000/2001). Annual Report on the Ethiopian Economy. Volume II, Addis Ababa, Ethiopia.
- Feldman, S. (1999) Rural – Urban Linkages in South Asia: Contemporary Themes and Policy Directions. Prepared for a Workshop on Poverty Reduction and Social Progress: New Trends and Emerging Lessons, A Regional Dialogue and Consultation on WDR2001 for South Asia, Rajendrapur, Bangladesh, 4–6 April 1999.
- Forster, T. (2009). CSD Major Groups, International Partners for Sustainable Agriculture, New York, NY, 13 June 2009, Edmonton.
- Gete Zeleke. (2006). Draft Conceptual Framework of RUL Thematic Research area of GMP. In Gete Zeleke, Trutmann, P., Aster Deneke (eds.) Proceedings of a Planning Workshop on Thematic Research Area of the Global Mountain Program (GMP) Held in Addis Ababa, Ethiopia, August 29–30, 2006.

- Gete Zeleke, Peter, T., Aster Deneke (eds.). (2006). *Fostering New Development Pathways: Harnessing Rural-Urban Linkages (RUL) to Reduce Poverty and Improve Environment in the Highlands of Ethiopia*. Proceedings of a Planning Workshop on Thematic Research Area of the Global Mountain Program (GMP) Held in Addis Ababa, Ethiopia, August 29–30, 2006.
- Hammond, L. (2008). Strategies of Invisibilization: How Ethiopia's Resettlement Program Hides the Poorest of the Poor. *Journal of Refugee Studies* 21(4): 517–536. doi:10.1093/jrs/fen041.
- Hemmings, J. (2008). *Ethiopian Women's Perspective on Reproductive Health: Results from a PEER Study in Guraghe Zone*. Center for Development Studies Swansea. Marie Stopes International.
- Kloos, H., Yohannes Gebre Medhin., and Pankhurst, A. (2010). Land Degradation and Water Problems in the Highlands. In Kloos, H., and Worku, L. (eds.), *Water Resources Management in Ethiopia: Implications for the Nile Basin*. Amherst, New York, NY, Cambria Press.
- Lesetedi, G.N. (2003). Urban–Rural Linkages As an Urban Survival Strategy Among Urban Dwellers in Botswana: The Case of Broadhurst Residents. *Journal of Political Ecology* 10: 36–46.
- Lindstrom, D.P. and Betemariam Berhanu. (1999). The Impact of War, Famine and Economic Decline on Marital Fertility in Ethiopia. *Demography*, 36(2): 247–261.
- Lindstrom, D.P. and Zewdu Wubalem (2003). The Demographic Components of Fertility Decline in Addis Ababa, Ethiopia: A Decomposition Analysis. *Genus* LIX(3–4): 147–158.
- Mesfin Haile, Agajie Tesfaye, Lemlem Aregu, and Eyob Mulat (2005). Market Access and Marketing of Teff: The Case of West Shewa Zone. In Alemayehu Seyoum, Assefa Admassie, Befekadu Degefe, Berhanu Nega, Mulat Deneke, Tadesse, B.K., and Wolday Amha, (eds.) Proceedings of the Second International Conference on the Ethiopian Economy, Vol. II, Ethiopian Economic Association, May, 2005, pp. 37–59.
- Ministry of Finance and Economic Development (MoFED). (2006). *A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)*. Ethiopia: Building on Progress. Volume I, Addis Ababa, Ethiopia.
- Muzvidziwa, V.N. (1997). Rural–Urban Linkages: Masvingo's Doublerooted Female Heads of Households. *Zambezia* XXIV(ii).
- Pankhurst, A. and Bevan, P. (2004). Hunger Poverty and Famine in Ethiopia: Mothers and Babies Under Stress, Paper Presented at the Ethiopian Economics Association International Conference, Addis Ababa, 2004 www.wedethiopia.org/working.htm
- Samuel Gebreselassie. (2006a) Land, Land Policy, and Smallholder Agriculture in Ethiopia: Options and Scenarios Paper Prepared for the Future Agricultures Consortium Meeting at the Institute of Development Studies 20–22. March 2006.
- Samuel Gebreselassie. (2006b) Intensification of Smallholder Agriculture in Ethiopia: Options and Scenarios. Paper Prepared for the Future Agricultures Consortium Meeting at the Institute of Development Studies 20–22. Draft Paper.
- Sander, V.H. (2009). *ICT for Ethiopia's Land Administration*. Bachelor Thesis: Information Science. Radboud University Nijmegen, The Netherlands. July 2009.
- Schmidt, E. and Melkamu Kedir (2009). *Urbanization and Spatial Connectivity in Ethiopia: Urban Growth Analysis Using GIS*. International Food Policy Research Institute and Ethiopian Development Research Institute. ESSP-II Discussion Paper. October 2009.
- Sibanda, A., Zewdu Wubalem, Hogan, D.P., and Lindstrom, D. (2003). The Proximate Determinants of the Decline to Below-Replacement Fertility in Addis Ababa, Ethiopia. *Studies in Family Planning* 34(1): 1–7.
- Sisay Zenebe. (2006). *The Process and Determinants Of Residential House Market In Addis Ababa*. A Thesis Submitted to the School Of Graduate Studies Regional and Local Development Studies. Addis Ababa University, School of Graduate Studies.

- Solomon Abebe Haile, and Mansberger, R. (2003). Land Policy, Urban-Rural Interaction and Land Administration Differentiation in Ethiopia SOLOMON Abebe Haile (Ethiopia) and Reinfried MANSBERGER (Austria) 2nd FIG Regional Conference Marrakech, Morocco, December 2–5.
- Sonobe, T., Akoten, J.E., and Otsuka, K. (2007). Development of Industrial Clusters in Ethiopia: How Different from East Asian Experience? Keijiro Otsuka, Foundation for Advanced Studies on International Development, 7–22–1 Tokyo.
- Taylor, J.E. (2003). Remittances, Savings, and Development in Migrant-Sending Areas. In Stephen, C. and Miller, M.J. (eds.), *The Age of Migration*. 175 Fifth Avenue, New York, NY, Palgrave Macmillan.
- Tegegne Gebre Egziabher. (2005), Rural-Urban Linkage in Ethiopia: The Need to Bridge the Divide. In: Decentralization, Urban Service Delivery and Rural-Urban Linkages, and Inequality in Developing Countries. Tegegne Gebre Egziabher and Meine P. (eds.). Rural Livelihood and Development Studies. Addis Ababa, Ethiopia.
- Tegegne Gebre Egziabher. (2006). “RUL in Ethiopia: status, challenge and opportunities and future research directions” in Gete Zeleke, Peter, T., Aster Denekew (eds.). Proceedings of a Planning Workshop on Thematic Research Area of the Global Mountain Program (GMP) Held in Addis Ababa, Ethiopia, August 29–30, 2006.
- Teller, C., Assefa Hailemariam, Tesfayi Gebreselassie, and Ali Hassan. (2009). Population Dynamics, Food/Nutrition Security and Health in Ethiopia: Delicate Balance of Vulnerability & Resilience. IUSSP Marrakech, 30 September, 2009.
- The World Bank. (2007). *Urban Labour Markets in Ethiopia: Challenges and Prospects*. Volume I, Synthesis Report, No. 38665-ET. Poverty Reduction and Economic Management Unit, Africa Region Report.
- Todaro, M.P. (1976). *Migration and Development: A Review of Theory, Evidence, Methodology and Research Priorities*. Institute for Development Research. University of Nairobi, Nairobi, Kenya. April 1976, Occasional Paper No. 18.
- Todaro, M.P. (1997). Urbanization, Unemployment, and Migration in Africa: Theory and Policy. 1997 No. 104.
- UNDP Bureau for Development Policy. (2000). Rural-Urban Linkages: An Emerging Policy Priority. Mimeographed.
- USAID. (2006). Southern Nations, Nationalities, and Peoples Region (SNNPR) LIVELIHOOD PROFILE. Regional Overview. December 2006.
- USAID. (2008). Tigray Region Livelihood Profiles. Regional Overview. Livelihood Integration Unit Disaster Prevention and Preparedness Agency Early Warning Department with DPP & FSCB. January, 2008.
- United Nations. (2005). Rural-Urban Linkages for Poverty Reduction A Review of Selected Approaches from Asia and the Pacific.

Chapter 10

The Importance of Permanent and Temporary Migration for Occupational Mobility in Urban Centers: Young Women are Doing Better than Young Men

Yanyi K. Djamba and Charles Teller

Abstract This chapter explores the importance of migration and related labor force participation in the poverty reduction, youth/gender/population and development policy environment of Ethiopia. Internal migration is conceptualized both as a survival as well as social mobility strategy; as one of the main multi-phasic responses to population pressures on the one hand, and to social and economic change on the other. Thus we carried out a special Migration, Health, Gender and Development Survey in 1998 in the five major regions, with the major city and one migratory-prone purposively selected rural area selected in each region. A total of 1,616 households were covered, and within each household, up to three individuals above 13 years of age were interviewed in depth about their migration experiences. In total, 2,500 individuals were interviewed, among whom 1,685 were living in urban areas. We find that migration, and especially temporary migration, has helped women to enter the labor force. It is common for divorcees or widows to have to move and be forced to find employment: twice as high a percentage of temporary migrant women worked after migration as before movement. Even among permanent migrant women, almost 35% were working after migration, compared to only one-fourth before movement. By contrast, male migrants' participation rates were more variable, with the labor force participation rate higher for permanent migrants after their move, but lower among temporary migrants. We find that migration has also had some effect on the sex integration of specific types of occupations. In general, the overall labor force distribution between males and females is more similar after migration than before, especially for temporary migrants. Thus especially temporary migration has helped women benefit more in occupational mobility than men. For policy purposes, facilitating permanent migration is one way of improving SES, and temporary migration in relieving population pressure on the land and seasonal food insecurity.

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Keywords Temporary and permanent migration · Occupational mobility · Gender differentials · Population pressure · Labor force participation

10.1 Introduction

10.1.1 Migration and Development

One of the major objectives of the poverty reduction strategy in Ethiopia is reducing youth unemployment (MoFED, 2006). Youth and gender well-being are also important in the National Population Policy (TGE, 1993) and the updated National Population Plan of Action 2008/2009–2015/16 (MoFED, 2008).

This chapter explores the importance of migration and related labor force participation in the poverty reduction, youth/gender/population and development policy environment of Ethiopia. Internal migration is one of the main mechanisms in accelerating the demographic transition in sub-Saharan Africa. It is conceptualized both as a survival as well as social mobility strategy and one of the main multi-phasic responses to both population pressures on the one hand, and social and economic change on the other, and thus an important piece in the conceptual framework of this book (see Chapter 1).

However, there is a serious lack of updated data on migration: not since the 1984 census (CSA, 1991) and the 1999 National Labor Force survey (CSA, 1999a) are there national migration and labor force data for policymaking and program targeting. Increasingly temporary migration, both seasonal and commuting, has become a survival strategy recently recognized by the Ministry of Agriculture, and strategies are being formulated for off-farm employment (MoFED, 2010), but there are no reliable data to document it.

Thus this special Migration Survey of 1998, carried out in the five major regions of the country (DTRC/PSTC, 2000), has been the main formal research undertaking in helping understand both permanent and temporary migration and health (e.g., Teller and Melaku, 2000), gender and development interrelationships. It should be used as a source of contextual evidence for updating the revised Population Plan of Action as it refers to the migration objective (MoFED, 2008).

10.1.2 Review of Relationships Between Migration, Labor Force Participation and Occupational Mobility

A common argument in the migration literature has been that the decision to move and the choice of destination are often determined by the perceived availability of better socioeconomic opportunities (Todaro, 1997). Within this process, migration is primarily considered a way for people to improve their occupational status, either by obtaining employment for those who had no jobs in places of origin, or by obtaining better jobs for those with previous work experience (Djamba et al., 2000).

Clearly, space matters in any models of labor migration (Fernandez and Su, 2004). In addition, entry in labor force does not necessarily mean improved socio-economic conditions. Findings from a recent analysis of historical data in the United States showed that while black female migrants had a higher probability of participating in the labor force than their white counterparts, their employment statuses were ranked among the lowest on the Socioeconomic Index of Occupational Status (White, 2005). Such results are consistent with the thesis that other factors such as labor market segmentation, government policies, and ecological factors may have direct effects on spatial mobility and labor force participation (Djamba et al., 2006; Rodenburg, 1993).

Moreover, the decision to move is a complex issue as it sometime goes beyond the scope of the individual migrant. In case of married people, there are great gender differences in both the motivations to move (Djamba, 2003; DTRC/PSTC, 2000), and the outcome of migration in terms of labor force participation and actual occupational mobility (McKinnish, 2008).

In South Africa, for example, men were significantly more likely to move in relation to job or employment relocation than women (Djamba, 2003). This finding was consistent regardless of the type of migration. However, there were no significant gender differences in intentions to move again among both permanent and temporary migrants. In Vietnam, historical contexts – war and the division of the country for many years into North and South – and the changing economic conditions were reflected in the migration decision and migration streams (Djamba et al., 1999). Among men, permanent migration was primarily related to job-assignment and military service. In contrast, permanent women cited family and marriage as their main reasons for relocating.

Consequently, migration is positively associated with age in Vietnam where military relocation and retirement were important factors of spatial mobility (Djamba et al., 1999), whereas in South Africa spatial mobility is essentially for young adults moving in search for better employment opportunities (Djamba, 2003). Generally speaking, migration seems to enhance the occupational status of the migrants in Vietnam (Djamba et al., 2000).

The situation of Eastern Africa is somehow different. In this part of Africa, the predominant type of spatial mobility has been forced migration, due to wars (Oucho, 2006). The few reports of internal migration in this region show that the majority of the flows have been either seasonal or rural-urban bound (Sander, 2003). Such moves are said to influence development at both the sending and receiving sites. However, little is known about the social mobility of these internal and forced migrants.

What are the associations between migration, labor force participation, and occupational mobility in Ethiopia, a country that has undergone profound socio-political and ecological changes in the last decades? Are gender differences in migration and occupational mobility observed in South Africa and Vietnam also significant in Ethiopia? These issues are examined using the national 1984, 1994, 2007 census data (CSA), the 1999 National Labor Force Survey (CSA), and the five-region 1998 Ethiopia Migration Survey.

10.2 Methods

10.2.1 Sources: Survey Description, and Project

The data used in this chapter come from the 1998 Ethiopia Migration Survey (DTRC/PSTC, 2000). This 1998 study was part of a four-country study project on “Interrelations Among Migration, Economic Change, Women’s Status, Reproduction, and Health” sponsored by UNFPA and Mellon Foundation. Other countries in the project were Guatemala, South Africa, and Vietnam. All four countries had undergone major economic, social, and political transitions in 1980s and 1990s. In each country, the research focus was on the impact of the transition on the interrelations among migration and women’s status, reproduction, and health.

The 1998 Ethiopia Migration Survey was conducted under the direction of the Demographic Training and Research Center of Addis Ababa University in collaboration with the Population Studies and Training Center of Brown University. The main purpose of the study was to examine the implication of political, environmental, and economic changes on migrant women’s and migrant men’s changes for entry in labor force and occupational mobility (Djamba et al., 2006).

The survey was conducted in specified locations in the five most populous provinces of Ethiopia – Addis Ababa, Oromiya, Tigray, Amhara, and Southern Nations Nationalities and People’s Region (SNNPR) (see map of regions in chapter 9, Fig. 9.5). Addis Ababa was included as the nation’s capital and primate city; in three provinces, regional capitals (moderate-sized cities) were included; in Oromiya, the zonal town of Jimma was chosen. Villages in the four provinces were also included in the survey but are not part of the current analysis for two reasons. First, most rural residents were in agricultural occupations, and because most people interviewed in rural areas were either non-migrants or migrants from other rural places, their occupational status would not change much over time. Second, the number of persons interviewed in rural places who were temporary migrants was very small. In addition, many rural residents who were temporary migrants might have been interviewed in urban locations.

Within the urban locations, a multi-stage selection process was used: sample areas were purposively chosen because they had been identified as high in-migration areas; households within them were randomly selected.

10.2.2 Concepts and Definitions of Permanent, Temporary and Non-migrants

Within selected households, individuals were classified into one of three migrant categories: non-migrants, permanent migrants, and temporary migrants.

1. *Non-migrants* were persons who were born in the urban place of interview and considered their usual residence to be at that place.

2. *Permanent migrants* had been
 - a. born elsewhere, but considered themselves by the time of the survey to be usual residents at the place of interview or
 - b. born in place of current residence and usual resident there, but had been away from the place of interview for at least 6 months since age 13 (return migrants).
3. *Temporary migrants* were born elsewhere than at place of interview and considered their usual place of residence in a place other than the interview location.

These definitions were developed for the current analysis because they are socially meaningful and politically and culturally appropriate in the Ethiopian context. The total number of respondents in each migrant category was set by quota in order to insure adequate cases to allow inter-type comparisons. Therefore, in the absence of a strictly random sample of the entire population, the data were not intended to, and cannot, provide statistically representative estimates of the relative numbers of each kind of migrant. Rather our focus here is on the comparative differentials in occupational composition by migration status and sex.

A total of 1,616 households were covered in the Ethiopian household sample; within each household, up to three individuals were interviewed in depth about their migration experiences. In total, 2,500 individuals were interviewed, among whom 1,685 were living in urban areas.

10.2.3 Measurement and Conceptualization: Occupational Status Importance of Youth Gender and Expected Links

10.2.3.1 Occupational Status

Demographers and economists consider occupational status as an important determinant of spatial mobility, because the decision to move and the choice of place of destination are strongly associated with the perceived availability of better socioeconomic opportunities (Todaro, 1997; Djamba et al., 1999). However, despite extensive use of this concept, its application to the study of social mobility has been limited by the lack of occupational scales that adequately represent local occupational status hierarchies, and which allow the comparison of occupational data across time and space. In this chapter, we use the International Socioeconomic Index of Occupational Status (*ISEI*), which treats occupation as an intervening mechanism between education and income, controlling for the effects of age. *ISEI* has proven to be a good measure of occupational mobility in many developing countries (Ganzeboom et al., 1992).

The Ethiopian survey collected data on current labor force status and occupation from both non-migrants and migrants. For migrants, further questions were asked about their main occupation during the month before move, and first occupation

after move. Twelve occupational categories were defined, and the corresponding *ISEI* scores were assigned to these twelve occupational categories.¹

10.2.3.2 Importance of Youth

Migration, especially labor migration, is strongly related to age. In countries like Ethiopia where the population is essentially young and where the percentage under age 15 has remained at a high 45 & in both the 1994 and 2007 Censuses (CSA, 1999b; 2010), and where land and employment opportunities are lacking in rural areas, thousands of youths move to urban places in search for better life. According to data from the 1998 Ethiopia Migration Survey, about 61% of temporary migrant respondents were under age 25 (Djamba, 2003: 101).

Unfortunately, for a large proportion of migrants, the dream for better life does not always translate into the reality. In fact, for many young rural-urban female migrants, exploitative jobs, such as cafe shop waitresses, house maids, street vendors and prostitutes are entry level jobs (Erulkar and Abebaw, 2007). In fact, it has been documented that prostitution becomes a risky alternative, but often successful, path to independence (Van Blerk, 2008).

In addition to rural-urban migration, Ethiopia has one of the largest African diaspora populations abroad, not only to West countries, but also to the Middle East and to South Africa (IOM, 2009). There are also 3.5 million internally displaced persons in its region of East Africa (UNHCR, 2007). Yet, this highly selective and gender-biased, age-specific migration remains largely poorly documented by the responsible international agencies and the United Nations Population Division, as well as by academics (Assefa and Adugna, Chapter 8). This lack of focus on youth and migration is rooted in the old belief that young people's mobility is still mainly viewed as dependent on that of adults (Doná, 2006), as well as the difficulty, under scarce resources, to measure it accurately. Even when such movements are commonly observed (Musa, 2009; Min-Harris, 2010), migration research on youth is still sparse.

10.2.3.3 The Importance of Gender

From the few studies that systematically compare the occupational mobility of male and female migrants, migration seems to be more beneficial to men than women (Findley and Williams, 1991). The common argument is that, because of gender-role socialization which accords greater importance to men's careers (Markham et al., 1983; Shihadeh, 1991), men have more access to formal education and other job related training and experience than women. As a result, males have better

¹Due to limited number of occupational categories and small number of observations in our sample, we use the *ISEI* scores for major group. Based on that scale, the lowest occupational status score in our data is 25 (farmer), and the highest is 67 (professional, industrial, and manager). This interval encompasses the full range of the *ISEI* scale using the major group. We discuss the possible limitations of this approach in Section 10.3.3.

employment opportunities than females (Maxwell, 1988; Sandell, 1977). The occupational advantage of men may be especially pronounced in countries like Ethiopia, with a strong patriarchal tradition.

10.2.3.4 The Expected Links

As suggested earlier, age and gender are likely to affect the extent of occupational mobility associated with migration. In many societies, gender-role socialization creates occupational boundaries that limit women's access to professional and higher income earning jobs (Ariffin, 1993). Nonetheless, as migrant women join the labor force in urban destinations, some upward occupational mobility may occur. Thus, even though migrant women may still hold less prestigious jobs than migrant men, the upward occupational mobility associated with migration is expected to be higher for women than for men. Possibly, the differential ties of women to families at origin may also affect the mobility of migrants. For example, women may have a stronger tendency to remit, especially compared to men who have formed their own families in places of destination.

Individuals with low status jobs have greater possibilities of upward mobility than those in higher status occupations. Hence, temporary migrants, who are often unemployed or employed in low skilled occupations (like farming) before migration, are expected to benefit more from spatial mobility than permanent migrants. Jobs that temporary migrants may find at places of destination are likely to be ranked higher than the ones they had at the place of origin. By contrast, a large number of permanent migrants are professional or government officials who move in connection with their jobs. Such persons are less likely to change occupational status than the temporary migrants.

Also, government policy can have a strong influence on the possibilities of improving occupational status through migration. In nations which severely control migration (e.g. China before 1980), mobility generally involves job reassignments or it may involve relocation in connection with rural development schemes. In neither case is significant occupational mobility likely to occur. Even under conditions of free migration, government policies may give strong preferences to one gender as opposed to another in given jobs, thereby again restricting opportunities for advancement.

10.2.3.5 A Comparison with South Africa

The characteristics of migrants are given in [Appendix 1](#) for Ethiopia and South Africa. In that table, an "na" indicates that the information is not applicable to the corresponding cell. [Appendix 1](#) also contains information on non-migrant samples for those readers who might want to know the characteristics of non-migrant respondents. However, because the purpose of this chapter is labor force participation of migrants, the following discussion focuses on migrants.

Several interesting patterns emerge from the data in [Appendix 1](#). We highlight them in charts below. Despite slight differences in methodological procedures of

data collection and conceptualization, these data suggest the existence of *similar gender patterns in migration experiences*. In both countries, female permanent migrants outnumbered male permanent migrants, while the opposite was found among temporary migrants. This pattern suggests that men and women probably move for different reasons, but that such motivations may be similar in both countries.

In contrast, there are noticeable differences in labor force participation between the two countries. In both countries, most people were not working at their last place of origin. However, the pre-migration unemployment rates were higher in South Africa than in Ethiopia. Yet, data on labor force status at the time of survey suggest that *migration helped South Africans more than it did Ethiopians*. Hence, while slightly more than 60% of South African migrants worked at the time of survey, only about half of Ethiopian migrants did so.

Certainly these data suggest the existence of differences in employment opportunities between the two countries. It is also possible that these differences in labor force participation reflect some effects of relative deprivation stated by Stark (1984). Under the relative deprivation thesis, it can be argued that South Africans move mostly to take advantage of jobs available at places of destination, whereas such opportunities are very limited for Ethiopians. In other words, the relative deprivation associated with migration translates into more favorable outcomes in South Africa than in Ethiopia.

Other interesting socio-demographic variables are education and marital status. The data in [Appendix 1](#) reveal that, whereas 65% of permanent migrants and 74% of temporary migrants in South Africa had at least high school education, only about 34% of permanent migrants and 42% of temporary migrants reached that educational level in Ethiopia. The distribution of respondents by marital status reveals sharp differences by migration status and country. On the one hand, 65% of Ethiopian permanent migrants were married at the time of the survey, compared to only 36% of South African permanent migrants. On the other hand, only 19% of Ethiopians involved in temporary migration were actually married compared to 30% of South Africans. These differences in marital status may be partly due to younger age of temporary migrants in Ethiopia; about 61% of the temporary migrant respondents in Ethiopia were under 25.

Although the surveys in both countries covered rural and urban areas, the data in [Appendix 1](#) show that most migrants were living in urban areas. But how much of these differences are attributable to gender? Or in other words, would men and women have the same migration experience and the same labor force outcome if they have the same socio-demographic characteristics? These issues are examined in more details with Ethiopian data.

10.3 Labor Force Participation and Occupational Mobility

In Ethiopia a large proportion of the urban population is not in the labor force. This is partly because, as in many developing countries, the urban economic environment is not able to keep pace with the growing population. The latter is itself the result

of high fertility and intensive rural-urban migration. Data from the 1994 census of Ethiopia show that about 50% of the urban population aged 10 years and older was not in the labor force, and among those working, a substantial number were in unskilled or semiskilled jobs (CSA, 1999b).

10.3.1 Labor Force Status Before and After Migration: Men Versus Women

Our survey data also indicate that a large percentage of urban respondents aged 15 years and older were not in the labor force at the time of the survey (Fig. 10.1).

For each migration status category, a higher percentage of males than females were in the labor force at the time of the survey (Fig. 10.2). Yet, with the exception

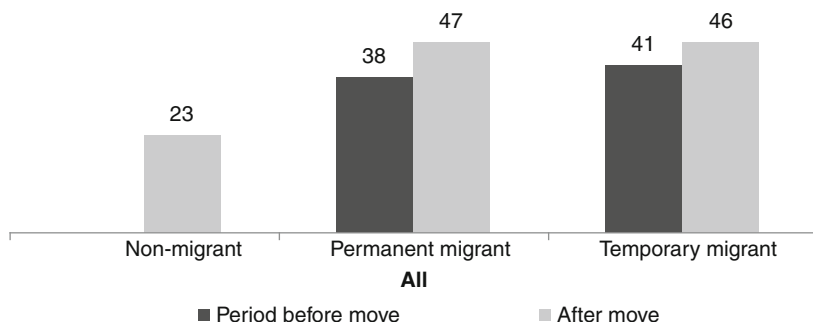


Fig. 10.1 Urban respondents age 15+ in labor force, Ethiopia migration survey, 1998 (%)

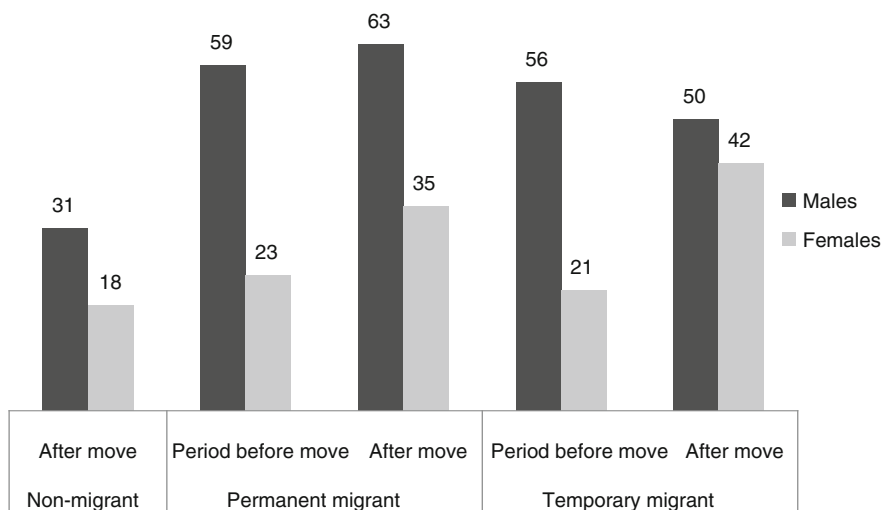


Fig. 10.2 Male and female urban respondents age 15+ in labor force, Ethiopia migration survey, 1998 (%)

of permanent migrant males, this was true of below half of any migrant category of men and especially of women.

Comparison of pre-migration labor force status with that at the time of the survey suggests that for male permanent migrants, movement slightly increased their percentage in the labor force, while temporary migration had the opposite effect. For women, both types of migration substantially raised the percentage in the labor force. The change is particularly dramatic for temporary migrants, among whom the percentage working more than doubles and comes to more closely resemble that of the parallel group of male migrants. The very low percentage in the labor force among non-migrants is particularly striking; it probably reflects the high percentage of men and women in this category who report that they are still in school, often in short training courses that serve to fill in the time for those unable to find work, as well as the high percentage of women who are classified as homemakers.

10.3.2 Determinants of Labor Force Participation

Migration is strongly associated with urbanization and the search of employment opportunities (Todaro, 1997). Although this process is largely determined by the conditions of the job market at destination, migrants' background plays a substantial role. Through the selectivity effect, these migrants are usually drawn from among the more talented and ambitious people in their communities. Census data for Ethiopia, for example, show that migrants compared to non-migrants have lower levels of illiteracy and are more likely to have more than an elementary education (CSA, 1999b). In many countries of Africa (including Ethiopia), however, where large numbers of people live at or below minimum standards of living (e.g. 45% living in absolute poverty in 2000) (MoFED, 2006), and with average landholdings per rural person estimated at only 0.21 ha in 1999 (World Bank, 2007), rural-urban migration is often seen as a better option by both unskilled and skilled workers. This paradox generates two types of spatial mobility – “survival” migration and “mobility” migration (Rodenburg, 1993).

Survival migration may characterize women who move to escape poverty, bad marriages, and/or the patriarchal authoritarian environment (Tabet, 1989; Pittin, 1984). By migrating, such women may be able to enter the labor force and therefore gain a measure of independence. When environmental disasters strike, such a strategy may be employed by both women and men, especially where government policies and other laws limit access to land (Teller, 2005). In general, individuals involved in survival migration have little human capital and few resources. As a result, survival migrants will be found mostly in informal sector occupations, if they find employment.

The second category of migrants includes those who move because of their desire to improve their individual or family standard of living. This often involves persons already in the labor force who are in mid- and upper-level occupations, or individuals taking advantage of changing political and economic conditions to search for

better opportunities elsewhere. In the Ethiopian migration survey, 75% of the temporary and 69% of the permanent male migrants left their place of origin due to job assignment or looking for better conditions; and two-thirds of the temporary female migrants left for similar livelihood improvement (DTRC/PSTC, 2000). The determinants of upward occupational mobility thus include the migrant's own human capital (Zlotnik, 1994), the circumstances in which the migration occurs, and economic and political conditions at the time of move.

10.3.2.1 Socio-Demographic Characteristics of Migrants

The socio-demographic characteristics of migrants are given in Table 10.1. These data partly support the assumption that temporary migrants have lower human capital than permanent migrants. Both temporary male and female migrants are far younger than comparable gender groups of permanent migrants (Figs. 10.3 and 10.4). Therefore, they would have had less opportunity than permanent migrants to gain work experience.

Although male temporary migrants have a somewhat higher percentage with little education (primary or less) than do permanent migrants, the differences in educational levels between the two migrant groups is not statistically significant; similarly, no significant difference characterizes the two groups of female migrants. Partly reflecting their younger age and other factors associated with the type of movement, the large majority of temporary migrants were not married, whereas over half of the permanent migrants were married; this suggests that marriage serves as an impediment to mobility, especially if there are children involved. Cultural norms are also more likely to preclude migration after marriage. Marriage may also be a component of a larger pattern of stability, so that permanent migrant males and females once settled and with stable jobs could afford to pay for the upkeep of a family.

Networks serve an important role in providing information and assistance to migrants both before and after the move. Family members and friends can offer various forms of assistance to facilitate the integration of the migrant into the new socioeconomic environment at place of destination. We include, therefore, a

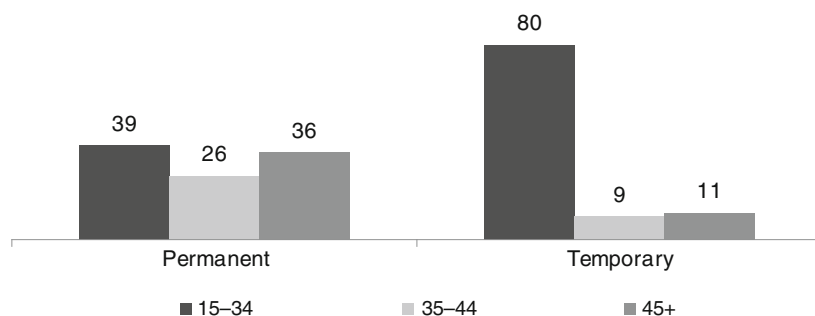


Fig. 10.3 Distribution of male migrants in urban areas, by age, Ethiopia 1998

Table 10.1 Distribution of respondents by migration status and sex for selected variables, Ethiopian migrants in urban areas, 1998 (%)

Variable	Migrant males		Migrant females	
	Permanent	Temporary	Permanent	Temporary
<i>Age at survey</i>				
15–34	38.5	79.7	44.9	87.1
35–44	25.8	9.3	24.9	4.1
45+	35.7	11.0	30.1	8.7
<i>Education</i>				
Primary or less	38.1	42.7	60.0	56.4
Middle school	25.8	20.0	15.9	17.8
High school	21.2	18.3	17.1	18.7
Higher	14.8	19.0	7.0	7.1
Percent currently married	66.5	28.2	50.1	14.9
Network index (0,5)	1.0	1.1	0.9	1.1
<i>Direction of last move</i>				
Urban-Addis Ababa	9.9	14.8	12.7	11.1
Urban to urban areas	43.9	43.0	35.0	41.5
Rural to Addis Ababa	27.4	21.3	31.6	14.3
Rural to urban areas	18.8	20.9	20.7	33.2
<i>Period of last move</i>				
Before 1984	65.6	3.8	66.2	5.2
1984–1991	30.8	33.4	30.1	31.4
1992–1998	3.6	62.8	3.7	63.3
<i>Main reason for last move</i>				
Job related	44.3	36.3	17.5	30.7
Search for better life	18.7	34.9	21.9	34.6
Family related	19.6	4.1	46.2	15.6
Other	17.4	24.7	14.5	19.0
Percent with multiple moves	53.2	49.0	38.7	38.1
Mean occupational mobility ^a	5.7	1.4	8.4	3.5
Number of cases	244	300	345	241

Source: Djamba et al. (2006).

^aAverage of the difference in occupational scores between the month before move and time of Survey, using the international occupation scale (*ISEI*) proposed by Ganzeboom et al. (1992).

network index to capture the impact of such social capital on occupational mobility. This variable measures whether the respondent received some forms of assistance, ranging from job information to money, from their friends and relatives at place of destination. The mean values for this variable reveal little differences between migrants of the same sex, or between men and women of the same migration status.

Direction of move may also be an important variable in explaining occupational mobility. Persons moving from rural areas to urban ones may have fewer skills or experiences to help them succeed in the city. On the other hand, urban-to-urban migration may facilitate occupational mobility, especially if economic reasons

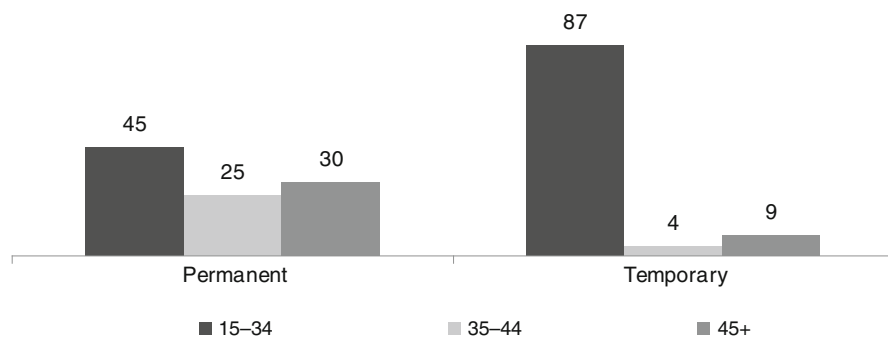


Fig. 10.4 Distribution of female migrants in urban areas by age, Ethiopia 1998

underlie the move. We distinguish four migration flows for urban residents. The percentage distributions show that both permanent and temporary migrant males are more likely to have urban origins than rural ones, with the urban-to-urban stream predominant, and that the female streams are almost equally divided between rural and urban origins.

The sharpest difference is observed between permanent and temporary migrant females moving from rural areas. Whereas about 32% of the permanent migrants moved to Addis and 21% to other urban places, among temporary migrants the magnitude of the ratios were reversed, with only 14% moving to Addis and 33% to other urban places. Female temporary migrants may prefer smaller urban destinations because they are closer to their places of origin and/or they perceive better opportunities in smaller locations.

As in many other developing countries under political and economic transitions (Djamba et al., 1999; Goldstein and Goldstein, 1996), temporary migration is a recent phenomenon resulting from new regulations, which lifted constraints on migration and allowed more freedom of spatial mobility. In Ethiopia, three distinct periods of change can be distinguished: 1984–1991 was the period of the *Dergue*, when population mobility was controlled and the nation was governed by a strictly planned economy; at the beginning of the period a severe drought struck many areas of the country, and political unrest was also widespread. The following years (1992–1998) saw the overthrow of the *Dergue* and the resumption of a market economy and the realization of many restrictions on migration. The third period encompasses the years before 1984.

The political and economic changes are clearly reflected in the distributions by type of move. Some two-thirds of permanent migrants moved before 1984, but only about 4% of both male and female permanent migrants moved during the post-*Dergue* period. By contrast, about one in three had moved in the 8 years (1984–1991) of the *Dergue*. In fact, not shown here is that most of this latter movement occurred in the final year of the *Dergue*, 1991, a period during which large segments of the population were displaced (CSA, 1999b). An almost equal

percentage of temporary migrants moved at that time, but the vast majority of temporary migrants (almost two-thirds) moved after the *Dergue*, during 1992–1998, in contrast to the very small percentage who moved before 1984. Clearly, the post-1991 changes in the political and economic situation in Ethiopia engendered a large-scale flow of temporary migrants, but resulted in only limited movement of permanent migrants.

Information on reason for move suggests that among both permanent and temporary migrants, men and women had different motivations. Among permanent migrants, the highest percentage of men moved for job related reasons, whereas permanent migrant women moved for family related reasons, that is, in connection with family or marriage. In contrast, both male and female temporary migrants moved primarily to take advantage of better economic opportunities or to achieve the better life perceived to be available in cities. In this respect, the situation in Ethiopia is similar to that in China (Goldstein and Goldstein, 1996) and Vietnam (Djamba et al., 1999). We expect, then, as was true elsewhere, that these differing motivations will affect migrants' job search and occupational attainment.

A variable measuring the number of moves indicates that for both permanent and temporary migrants, a substantial percentage made multiple moves. Males tended to move more often than females but permanent migrants of both sexes moved only slightly more often than temporary migrants, differences that are not statistically significant. This pattern reflects a combination of factors: Communist ideology, especially under the centrally planned economy, officially prohibited gender biases in employment, and women were employed in all sectors of the labor force, albeit not always at the same levels of responsibility or compensation as men. This especially characterized urban areas, with their diversified economy. After the *Dergue*, greater inequalities in hiring practices have occurred, but urban opportunities for women coming from rural areas or moving from small to larger urban places still provide considerable opportunities in a broad range of occupations.

10.3.2.2 Factors Affecting Labor Force Participation

In order to determine how these various factors are related to participation in the labor force in Ethiopia, we turn to logistic regression analysis. The three sets of factors – human capital, variables associated with migration, and economic and political conditions – are represented by the following variables in our analysis. First, migrant's education, age, previous work experience, and marital status² are human capital factors which affect the migrant's chance of employment at destination. Second, we consider the direction of move, reason for migrating, number of moves, and the level of assistance migrants received from relatives and peers as important factors related directly to mobility. The third category contains a time

² Marital status is subsumed under human capital characteristics because marital status may directly affect the ability of persons to engage in migration. For example, married women are expected to remain at home to care for family, while married men may be encouraged to engage in migration as a way to supplement family income.

Table 10.2 Logistic regression models predicting the likelihood of being in labor force at the time of the survey, urban migrants, Ethiopia 1998

	Permanent migrants		Temporary migrants	
	Coeff.	S.E.	Coeff.	S.E.
<i>Sex</i>				
Female	–	–	–	–
Male	1.048*	0.245	–0.342	0.246
In labor force before moving	0.211	0.236	1.288*	0.247
<i>Age at survey</i>				
15–34	–	–	–	–
35–44	0.412	0.299	1.517*	0.566
45+	–0.523+	0.299	–0.107	0.438
<i>Education</i>				
Primary or less	–	–	–	–
Middle school	–0.368	0.309	–0.447	0.300
High school	0.225	0.339	–1.098**	0.346
Higher	0.654	0.419	–0.092	0.375
Married	–0.331	0.224	0.661*	0.309
Network index (0,5)	0.087	0.117	–0.233*	0.109
<i>Direction of move</i>				
Urban-Addis Ababa	–	–	–	–
Urban to urban areas	–0.293	0.340	0.066	0.334
Rural to Addis Ababa	–0.218	0.366	–0.747+	0.416
Rural to urban areas	0.141	0.386	–0.178	0.371
<i>Period of last move</i>				
Before 1984	–	–	–	–
1984–1991	–0.661*	0.292	1.153*	0.560
1992–1998	–1.121	0.693	0.643	0.551
<i>Main reason for last move</i>				
Job related	0.919**	0.281	1.279**	0.438
Search for better life	–0.171	0.278	0.133	0.434
Family related	–	–	–	–
Other	–0.079	0.344	0.086	0.454
<i>Number of moves</i>				
One move	–	–	–	–
With multiple moves	0.851***	0.251	–0.179	0.255
<i>Constant</i>				
–	–0.553	0.447	–1.062	0.700
–	561		524	
2 Log likelihood				
Number of cases	470		472	

Source: Djamba et al. (2006).

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

frame variable that measures the impact of economic and political change on migration and employment opportunities of migrants. It is expected that those who moved after the initiation of the market economy (after 1991) have greater opportunities for employment than those who moved before.

Our analysis (Table 10.2) shows strikingly different patterns for permanent migrants vs. temporary ones. Among permanent migrants, males have a distinct advantage of being in the labor force after their move at the time of the survey. Permanent migrants, who moved for job-related reasons and who had made multiple moves, also were more likely to find employment than others. By contrast, being older and having moved during the period *Dergue* lessened the likelihood of permanent migrants being in the labor force.

Among temporary migrants, very different determinants seem to be operating. For such movers, gender is not a significant factor. Past job experience does have a strong positive effect, as does moving for economic reasons and moving during 1984–1991. On the other hand, more education has a negative effect. Surprisingly, an extensive network also has a negative effect, perhaps because such assistance may make it less urgent for the temporary migrant to obtain a job after arriving at destination. The relatively poorer prospect for rural migrants to Addis Ababa reflects the greater competition for jobs in the capital than in smaller urban places. Clearly, the types of persons who consider their move temporary, as opposed to those who make permanent moves, can expect quite different factors to help them obtain jobs at destination. Because education per se does not appear to be important in obtaining work, women, who generally have much lower educational levels than men in Ethiopia, may find that temporary migration is a relatively good way for them to enter the labor force. Such mobility may thus be an important response for women with difficult family situations at origin.

10.3.3 Current Occupation

We turn next to assessment of the occupations in which men and women in Ethiopia are engaged with a view to determining whether migration is associated with improvements in status of occupational category. In doing so, one limitation of our data must be pointed out. Because the size of the survey sample does not allow attention to specific occupations, they are treated in this analysis in terms of the broader occupational categories in which they are grouped. As a result, upward mobility may occur without a change in occupational category if the new job entails more pay or higher status within the same occupation. Thus, someone in commerce and sales may move from salesperson to department manager and therefore be occupationally mobile without a change in major occupational category; similarly for downward mobility. Because we have no information on this kind of lateral move, as a result, persons may be classified as having experienced no change in occupational status, whereas such a change may in fact have occurred within the broad occupational group in which the job has been categorized.

Using the *ISEI* index, we have classified respondents into twelve occupational categories. While most are similar to the categories used in studies of other developing nations, a few notes are relevant: In Ethiopia, small individual traders who sell their wares on the street or from market stalls are subsumed under the service category rather than being considered in commerce and sales. We have also maintained as a discrete category persons who list their occupation as weaver. Weaving has traditionally been carried out by specific ethnic groups in Ethiopia. It is an occupation that is often pursued in villages in addition to farming and is carried into urban areas. For others, it is first practiced in urban areas and serves as an entrée into the job market. Weavers are considered to be just above unskilled workers in the occupational hierarchy.

The distribution of workers by occupational status reveals a pattern typical of developing countries. The top three occupation categories are shown in Figs. 10.5 and 10.6 for men and women respectively.

For both males and females, commerce & sales and service are the top three occupations, regardless of migration status. However, there are some important gender

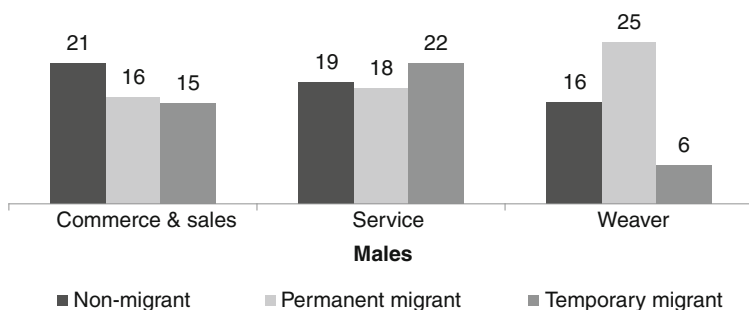


Fig. 10.5 Percent of top three occupations among Ethiopian males in urban areas, by migration status

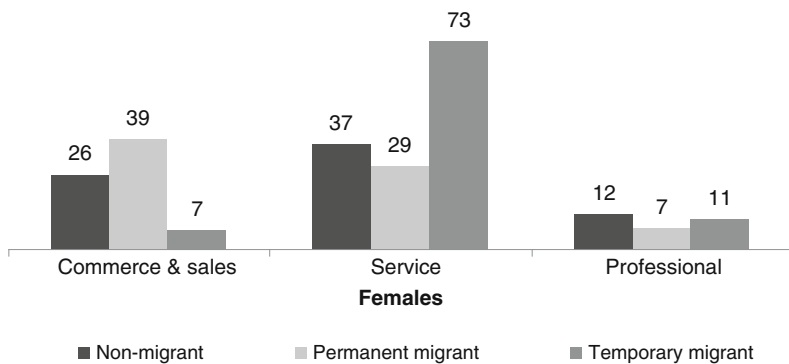


Fig. 10.6 Percent of top three occupations among Ethiopian females in urban areas, by migration status

differences. For example, weaver was the top occupation for permanent migrant men (25%), whereas the commerce & sales was the occupation of choice for permanent migrant women (39%). Although their rates are consistently lower than men's in all three migration statuses in the professional jobs (men's professional jobs were above 10%), that occupation emerged as the third top category for women (Fig. 10.6).

10.3.4 Occupational Mobility

For persons in the labor force before their move, migration can be said to have a positive effect on their status at destination only if it leads to upward occupational mobility, either between or within occupations, or to higher remuneration for work done. In the ensuing analysis of occupational mobility, we focus on persons who were in the labor force both in the month before their last move and at the time of the survey. We do not consider individuals who moved either into or out of the labor force in connection with migration. Using the *ISEI* occupational index for broad occupational categories, we obtain a measure of occupational mobility by subtracting the occupational status score of the pre-migration period from the occupational status score at the time of the survey. In doing so, we again need to recognize the limitation of the data: we do not have information on the status level of respondents within their reported occupations, so that we cannot determine whether migration resulted in a change in status absent a change in occupational category.

The mean values of the occupational mobility scores among permanent migrants were 8.7 for women and 5.7 for men. The corresponding scores for temporary migrants were 3.5 and 1.4, respectively for women and men. These values indicate that permanent migrants (both males and females) registered relatively more upward occupational mobility than temporary migrants. Most interesting, within each migration status category, women registered greater upward occupational mobility than men. This finding suggests that many women held especially low level jobs before move, so that almost any change in occupation resulted in upward mobility. It appears, therefore, that the economic benefits of female urban-ward migration are substantial when compared with their prospects in rural places (Rodenburg, 1993: 283). These differences are even more striking given the differences in reasons for move advanced by men and women. More men than women (especially among permanent migrants) cited job-related factors as their main reasons for migrating, but overall women's occupational mobility is greater than men's. How much of these differences are explained by socio-demographic characteristics?

We turn now to an OLS regression analysis to assess the determinants of occupational mobility. The independent variables are similar to those used in the earlier analysis of labor force participation, but being in the labor force before the move is omitted. The dependent variable, occupational mobility, measures the magnitude of occupational mobility between the pre-migration period and time of the survey. It is a continuous variable, with values ranging from -33 to +42. The results are presented in Table 10.3.

Table 10.3 Un-standardized and standardized coefficients from the regression of occupational mobility on selected independent variables, Ethiopian migrants in urban areas, 1998

	Permanent migrants		Temporary migrants	
	B	β	b	β
<i>Sex</i>				
Female	—	—	—	—
Male	-3.862	-0.150	-3.310	-0.130
<i>Age at survey</i>				
15–34	—	—	—	—
35–44	-2.910	-0.114	2.205	0.078
45+	-5.102+	-0.211	-3.071	-0.096
<i>Education</i>				
Primary or less	—	—	—	—
Middle school	7.603**	0.261	1.578	0.056
High school	-1.231	-0.035	-1.128	-0.036
Higher	3.331	0.103	-4.464	-0.160
Married	5.428*	0.189	-0.783	-0.036
Network index (0,5)	-0.598	-0.050	0.068	0.007
<i>Direction of move</i>				
Urban-Addis Ababa	—	—	—	—
Urban to urban areas	0.341	0.014	-1.328	-0.061
Rural to Addis Ababa	-0.757	-0.031	0.054	0.002
Rural to urban areas	-1.639	-0.048	2.069	0.084
<i>Period of last move</i>				
Before 1984	—	—	—	—
1984–1991	-7.607**	-0.291	-1.877	-0.088
1992–1998	5.901	0.084	-0.306	-0.014
<i>Main reason for last move</i>				
Job related	-2.968	-0.126	14.520*	0.681
Search for better life	1.629	0.048	15.993*	0.678
Family related	—	—	—	—
Other	1.082	0.033	13.833*	0.505
<i>Number of moves</i>				
One move	—	—	—	—
With multiple moves	-10.605***	-0.451	1.832	0.086
<i>Constant</i>				
	17.301**		9.220	
R^2	0.412		0.123	
Number of cases	103		140	

Source: Djamba et al. (2006).

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Several important relationships emerge. First, *women seem to have benefited more* than men from migration, although the regression result is not statistically significant (Table 10.2). Second, the *educational attainment of migrants seems to increase their chance of better employment only if they had middle school training.*

Apparently, persons with higher levels of education had already achieved a relatively high occupational status at origin, so that migration did not provide opportunities for much further advancement. Marriage appears as a positive asset for male permanent migrants. Permanent settlement usually occurs after finding occupational stability and may, in fact, follow achievement of economic security.

Contrary to expectations, the economic and political changes that occurred in 1992–1998 had no significant impact on occupational mobility, although the coefficient is positive. However, migration during 1984–1991, the period of the middle and late *Dergue* regime, seems to have significantly reduced the chance of upward mobility among permanent migrants. This finding suggests that much of the migration during the later *Dergue*, was related more to push factors in rural areas than to the pull of economic opportunities at urban destinations. Finally, for permanent migrants, multiple moves are associated with downward mobility, possibly reflecting an unsuccessful continuous search for better opportunities. Those who moved many times before settling down still lag behind those who moved only once. By contrast, multiple moves for temporary migrants are positively related to upward occupational mobility.

The one factor that shows a significant association with occupational mobility among temporary migrants is reason for move. Those moving for family related causes have a lesser chance of upward occupational mobility than those moving either in connection with jobs or for other reasons. Many of these migrants, especially the ones who moved during 1984–1991, are survival migrants. They are moving for economic reasons or to better their life, but consider the move temporary, until the situation at origin improves. These migrants generally have little education and were farmers. Any jobs they find at destination thus constitute upward occupational mobility, even though their new jobs are largely in unskilled work. This finding suggests that the circumstances in which temporary migrants move have a powerful effect on the outcome at destination.

10.4 Discussion and Conclusion

Previous research on occupational change during periods of economic and political transitions in China (Goldstein and Goldstein, 1996; Yang and Guo, 1999) and Vietnam (Djamba et al., 1999) has indicated that both the type of mobility and the gender of the migrant are strongly related to occupational mobility. The current research on Ethiopia supports many of the earlier findings, while also pointing to differences related to the specific context within which mobility occurred.

In Ethiopia, a very large segment of the adult population (age 15 and over) is not in the labor force. This is particularly true of women, reflecting in part the heavily patriarchal nature of Ethiopian society and in part the paucity of employment opportunities. Nonetheless, migration, and especially temporary migration, has helped women to enter the labor force. It is common for divorcees or widows, to have to move and be forced to find employment. For example, the data indicate

that twice as high a percentage of temporary migrant women worked after migration than before movement. Even among permanent migrant women, almost 35% were working after migration, compared to only one-fourth before movement. By contrast, male migrants' participation rates were more variable, with the labor force participation rate higher for permanent migrants after their move, but lower among temporary migrants.

Migration has also had some effect on the sex integration of specific types of occupations. In general, the overall labor force distribution between males and females is more similar after migration than before, especially for temporary migrants. Nonetheless, some occupations are still clearly male, including the higher level occupations (professionals and technical workers) and weavers. Females are found most heavily in service work and petty trade, especially among temporary migrants. In fact, service work became more sex-segregated after migration than it had been before movement. This finding suggests that women continue to have few urban-relevant skills and very limited job opportunities in urban places in Ethiopia, particularly in light of the very low level of industrialization of the country.

However, our survey data do not allow us to distinguish salary and status levels within given occupation categories. Thus, even if women and men are equally represented within a category, women may still be mainly relegated to the lower paying and lower status jobs within the occupation. This is partly due to their limited education and skill level compared to men. This shortcoming in our data, which can only be overcome with very large surveys or a census with more detailed questions on occupational change, must be kept in mind, both when comparing men's and women's job distributions and when examining occupational mobility.

Despite this data limitation, compared to men, women seem to have benefited more from migration when occupational mobility is used as the measure. While both permanent and temporary migrants were more likely to work at their places of destination than in places of origin, permanent migrants had a higher occupational mobility than temporary ones, and for both migration categories, women's occupational mobility was higher than men's. Regression analyses confirm the advantage of women in occupational change associated with migration.

The regression analyses also indicate the importance of timing of move. Permanent migrants who moved during 1984–1991, the later period of the *Dergue* in Ethiopia, a large majority of whom probably migrated under the duress of the later government resettlement schemes or the major 1984–1985 famine and environmental stress, had significantly less upward occupational mobility than those who moved later. Multiple moves for permanent migrants also had a deleterious effect on occupational change, suggesting that onward movement may be associated with failure to obtain suitable employment at initial place of settlement. That the pattern does not characterize temporary migrants among whom multiple moves result in slight upward occupational mobility illustrates the very different nature of permanent and temporary mobility (and the study's unique self-definition of "temporary" migration). This difference is further highlighted by the data on reasons for move: moving for family-related reasons has a strong negative effect on the occupational

change of temporary migrants, but no significant effect on permanent migrants. By contrast, moving for economic reasons benefits temporary migrants, but has a negative effect on permanent migrants. Among both permanent and temporary migrants, women had a slight, but insignificant advantage over men.

Our data clearly document the complex interplay of factors affecting occupational mobility. Gender is important, but while women may have greater possibilities for occupational mobility, the advantage may simply be a result of their very low status occupations before migration and their willingness to access informal, poorly remunerated jobs. Timing, government policies, and the environmental situation all have an impact on the possibilities for upward mobility.

Finally, the type of movement is an important differentiating factor in explaining occupational change. Since the variables we have considered often have opposite effects for the two migrant groups, combining all migrants, as is usually done in census and most survey research, obscures important patterns and may result in misleading conclusions about the impact of mobility, and its differential effect on men and women. Recognition of these differences related to type of migration is especially important for policymakers, who deal with both migration groups within their populations and with gender concerns. They must be sensitive to the differing needs and outcomes for these varied segments of the migrating population.

Appendix 1: Characteristics of samples (%), Ethiopia (1998) and South Africa (1999)

Characteristic	Non-migrants		Permanent migrants		Temporary migrants	
	Ethiopia	South Africa	Ethiopia	South Africa	Ethiopia	South Africa
<i>Sex</i>						
Male	49.2	45.0	40.9	45.3	57.8	55.2
Female	50.8	55.0	59.1	54.7	42.2	44.8
<i>Labor force status before move</i>						
Was working	NA	NA	47.4	38.2	43.5	33.3
Was not working	NA	NA	52.6	61.8	56.5	66.7
<i>Labor at time of survey</i>						
Was working	36.5	68.2	50.7	60.6	49.8	67.9
Was not working	63.5	31.8	49.3	39.4	50.2	32.1
<i>Age at survey</i>						
15/18–24	59.8	26.8	15.0	19.1	61.2	25.6
25–34	16.8	29.1	23.1	30.6	24.6	38.5
35–49	12.8	26.5	35.7	30.9	9.2	24.0
50+	10.6	17.6	26.2	19.4	5.0	11.9
<i>Education</i>						
None	22.1	13.6	40.6	13.9	30.1	6.9
Primary	19.1	18.7	25.9	21.1	27.7	19.0
High school	52.1	59.2	25.4	57.7	29.9	63.1
Higher	4.7	8.5	8.1	7.3	12.4	11.1

(continued)

Characteristic	Non-migrants		Permanent migrants		Temporary migrants	
	Ethiopia	South Africa	Ethiopia	South Africa	Ethiopia	South Africa
<i>Marital Status</i>						
Never married	55.5	53.4	14.6	43.4	66.6	54.6
Currently married	35.2	28.1	64.9	36.3	18.8	30.0
Formerly married	9.4	18.4	20.5	20.4	14.6	15.3
<i>Current residence</i>						
Urban	57.5	52.1	64.0	69.9	85.9	65.1
Rural	42.5	47.9	36.0	30.1	14.1	34.9
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of cases	888	821	929	836	618	496

Source: Djamba (2003).

The first age group is 15–24 for Ethiopia and 18–24 for South Africa. Total percentages may not add up to 100, due to rounding.

References

- Ariffin, J. (1993). Proceedings of the International Colloquium: Migration Development and Gender in the ASEAN Region, Kuala Lumpur, Population Studies Unit, Faculty of Economics and Administration, University of Malaya.
- Central Statistical Agency (CSA). (2010). *The 2007 Population and Housing Census of Ethiopia*. National Summary and Statistical Report. Office of Population Census Commission, Addis Ababa, July.
- Central Statistical Authority (CSA). (1991). *The 1984 Population and Housing Census of Ethiopia*. Analytical Report at National Level, Volume II, Addis Ababa, Central Statistical Authority.
- Central Statistical Authority (CSA). (1999a). National Labor Force Survey, Addis Ababa.
- Central Statistical Authority (CSA). (1999b). The 1994 Population and Housing Census of Ethiopia. Analytical Report, Vol. II, Addis Ababa.
- DTRC (Demographic Training and Research Center) and PSTC (Population Studies and Training Center). (2000). *Migration, Gender and Health Survey in Five Regions of Ethiopia, 1998*. Addis Ababa, Addis Ababa University and Brown University.
- Djamba, Y. (2003). Gender Differences in Motivations and Intentions to Move: Ethiopia and South Africa Compared. *Genus* LIX(2): 93–111.
- Djamba, Y., Goldstein, S., and Goldstein, A. (1999). Permanent and Temporary Migration in Viet Nam During a Period of Economic Change. *Asia-Pacific Population Journal* 14(3): 25–48.
- Djamba, Y., Goldstein, S., and Goldstein, A. (2000). Migration and Occupational Change During Periods of Economic Transition: Women and Men in Vietnam. *Asian and Pacific Migration Journal* 9(1): 65–92.
- Djamba, Y., Goldstein, S., and Goldstein, A. (2006). Gender Differences in Occupational Mobility in Ethiopia: The Effects of Migration and Economic and Political Change. *Genus* LXI(2): 65–88.
- Doná, G. (2006). Child and Youth Migration: Changing Trends and Responses. *International Journal of Migration, Health and Social Care* 2(2): 2–6.
- Erukhar, A. and Abebaw Ferede. (2007). *Migration and Girl's Vulnerability in Urban Ethiopia*. Addis Ababa, Population Council.

- Fernandez, R. and Su, C. (2004). Space in the Study of Labor Markets. *Annual Review of Sociology* 30: 545–569.
- Findley, S. and Williams, L. (1991). Women Who Go and Women Who Stay: Reflections of Family Migration Processes in a Changing World. Geneva, International Labour Office, Population and Labour Policies Programme, Working Paper No. 176.
- Ganzeboom, H., De Graaf, P., and Treiman, D. (1992). A Standard International Socioeconomic Index of Occupational Status. *Social Science Research* 21: 1–56.
- Goldstein, A. and Goldstein, S. (1996). Migration Motivations and Outcome: Permanent and Temporary Migrants Compared. In Goldstein, A., Fang, W. (eds.), *China: The Many Facets of Demographic Change*. Boulder, CO, Westview Press, 188–212.
- Internal Organization for Migration (IOM). (2009). Ethiopia. Migration Initiatives Appeal. IOM: Addis Ababa, Ethiopia & Geneva, Switzerland.
- Markham, W., Macken, P., Bonjean, C. and Corder, J. (1983). A Note on Sex, Geographical Mobility and Career Advancement. *Social Forces* 61: 1138–1146.
- Maxwell, N. (1988). Economic Returns to Migration: Marital Stability and Gender Differences. *Social Science Quarterly* 69: 108–121.
- McKinnish, T. (2008). Spousal Mobility and Earnings. *Demography* 45(4): 829–849.
- Min-Harris, C. (2010). Youth Migration and Poverty in Sub-Saharan Africa: Empowering the Rural Youth. Topical Review Digest: Human Rights in Sub-Saharan Africa. Retrieved from <http://www.du.edu/korbel/hrhw/digest/index.html> on February 1, 2010
- Ministry of Finance and Economic Development (MoFED). (2006). Ethiopia, Building on Progress: A Plan for Accelerated and Sustained Development to End Poverty (PASDEP), 2005/2006–2009/10, 2 volumes. Addis Ababa, Ethiopia.
- Ministry of Finance and Economic Development (MoFED). (2008). National Population Policy Plan of Action, 2008/2009–2015/16. Addis Ababa (December, draft)
- Ministry of Finance and Economic Development (MoFED). (2010). Growth and Transformation Plan (GTP) 2010/11–2014/15 Draft, September. Addis Ababa, Ethiopia.
- Musa, M. (2009). Ghana: Livelihood Security and Northern Youth Migration. Africa.com. Retrieved from <http://allafrica.com/stories/200912211252.html>. Accessed on 1 February 2010.
- Oucho, J.O. (2006). Migration and Refugees in Eastern Africa: A Challenge for East African Community. In Cross, C., Gelderblom, D., Roux, N., Mafukidze, J. (eds.), *Views on Migration in Sub-Saharan Africa. Proceedings of an African Migration Alliance Workshop*, Pretoria, Human Sciences Research Council and Department of Social Development, pp. 130–147.
- Pittin, R. (1984). Migration of Women in Nigeria: The Hausa Case. *International Migration Review* 18(4): 1293–1314.
- Rodenburg, J. (1993). Emancipation or Subordination? Consequences of Female Migration for Migrants and Their Families. In United Nations (ed.), *Internal Migration of Women in Developing Countries*. New York, NY, United Nations, pp. 273–289.
- Sandell, S. (1977). Women and the Economics of Family Migration. *Review of Economics and Statistics* 59: 406–414.
- Sander, C. (2003). *Migrant Labour Remittances in Africa: Reducing Obstacles to Developmental Contributions*. London, Bannock Consulting.
- Shihadeh, E. (1991). The Prevalence of Husband-Centered Migration. *Review of Economics and Statistics* 59: 406–414.
- Stark, O. (1984). A Rural–Urban Migration in LDCs: A Relative Deprivation Approach. *Economic Development and Cultural Change* 32: 475–486.
- Tabet, P. (1989). I'm the Meat, I'm the Knife: Sexual Service, Migration, and Repression in some African Societies. In Pheterson, G. (ed.), *A Vindication of the Rights of Whores*. Seattle, CA, The Seal Press.
- Teller, C. (2005). The Demography of Hunger: Case Studies on Population/Land Pressure in Vulnerability to Food/Nutrition Insecurity in Ethiopia, IUSSP Conference Paper, Tours, France, July.
- Teller, C. and Melaku Eshetu. (2000). Migration, Urbanization and Health in Ethiopia: Health Situation Comparisons Before and After Migration among Different Migration Status Groups, PAA Meetings, Los Angeles, March.

- Todaro, M. (1997). Urbanization, Unemployment, and Migration in Africa: Theory and Policy, Policy Research Division Working Paper 104, New York, NY, The Population Council.
- Transitional Government of Ethiopia (TGE). (1993). National Population Policy of Ethiopia, Office of the Prime Minister, Addis Ababa
- UNHCR. (2007). Global Report 2006: Achievements and Impact, Geneva.
- Van Blerk, L. (2008). Poverty, Migration, and Sex Work: Youth Transitions in Ethiopia. *Area* 40(2): 245–253.
- White, K. (2005). Women in the Great Migration: Economic Activity of Black and White Southern-Born Female Migrants in 1920, 1940, and 1970. *Social Science History* 29(3): 413–455.
- World Bank. (2007). Ethiopia: *Capturing the Demographic Dividend in Ethiopia: Gender, Development and Demographic Action*. Washington, DC, World Bank.
- Yang, X. and Guo, F. (1999). Gender Differences in Determinants of Temporary Labor Migration in China: A Multilevel Analysis. *International Migration Review* 33(4): 929–954.
- Zlotnik, H. (1994). Migration to and from Developing Regions: A Review of Past Trends. In Lutz, W. (ed.), *The Future of the World Population: What Can We Assume Today?* London, International Institute for Applied Systems Analysis, pp. 321–360.

Part V
Vulnerability and Adaptation: Case
Studies in Population-Resource Pressure
and Food Insecurity

Chapter 11

Urbanization and Changing Livelihoods: The Case of Farmers' Displacement in the Expansion of Addis Ababa

Feyera Abdissa and Terefe Degefa

Abstract The growth of the population of Addis Ababa from about 2.1 million in 1994 to about 2.7 in 2007 (or 2.1% annually) has been occurring mainly in horizontal growth in peripheral areas. Many farmers in the peri-urban periphery have been dispossessed of their agricultural lands, the basis of their livelihoods. A multi-method data collection approach incorporating household survey, participatory group discussions and key informant interviews was used to assess this process of urbanization and the changing livelihoods. We found that the city's expansion program is neither participatory nor supportive to farmers in the periphery, and thus has negative effects on peoples' livelihoods where women and the youth are the major victims. The main coping strategies of the majority of the displaced farmers are casual daily labor, since other more productive opportunities have gradually become unavailable in the area. Future urbanization programs will need to be more comprehensive and participatory to ensure a transition to more stable and improved livelihoods.

Keywords Urbanization · Livelihoods · Displacement · Farmers · Day labor

11.1 Introduction

Displacement can wipe out a community's previous means of livelihood and introduce a new way of life that in most cases is less supportive than the previous (Mejia, 1999: 156). The problems faced by Addis Ababa in its horizontal growth or expansion have been recognized by the Transitional Government of Ethiopia since 1991. It was felt that the horizontal expansion was to be limited and due attention be given to vertical growth (defined as the development of multi-storey buildings to save land and service costs). This was not, however, the case since acquiring space is

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considered to be an important element in the overall strategy of the expansion and development of the inner city that accompanied the displacement of the occupants and their relocation to the peripheral agricultural and forest lands, which in turn resulted in the dispossession and displacement of farmers. This ongoing expansion process, nevertheless, failed to capture the needs and aspirations of farmers who were forced to leave their land and property.

Although Addis Ababa City Administration has put in place some benefit packages, little is known how displacement and relocation activities are mediated, how the livelihood of the displaced people is protected and how the nature of the relationship between urban expansion and the periphery is to be handled. In fact, this requires an assessment of the existing social, economic, institutional and organizational structures and displacement procedures that dealt with people with a view to identify gaps and areas for improvement. Assessments of the effect of urban expansion on the livelihood of the displaced farming community are expected to play an important role in designing a sound strategy for expansion programs of urban areas.

11.2 Background

11.2.1 Population Pattern

The level of urbanization of Ethiopia, where only 16% live in urban areas, is comparatively low given the global scale, and even by African standards. Despite this low level, Ethiopia has recorded a relatively high growth rate of urban population (4% annually), double that of rural areas (CSA, 2008). However, such high growth rate is not often accompanied by development in socioeconomic services and infrastructure, and by economic and employment capacity of the urban centers to support the growing population (Tibebu, 2001: 4).

Addis Ababa is among the most physically expansive cities in Africa. It was established in 1886 as a military settlement with a “large number of tents” (Pankhurst, 1962: 35). It has since been transformed into large metropolitan city covering about 54,000 ha of land. Throughout its history, however, Addis Ababa City is characterized by unplanned settlement and spontaneous horizontal expansion pattern (Tegenge, 2000). The combined effects of being the seat of the administration of the country, head offices of different institutions, and diplomatic machines and residences have brought a significant change on the expansion of the city (Bekure, 1999: 16).

The population of the city was only 65,000 in 1910, increased to 100,000 with an average annual growth rate of 2.1 per annum by 1935, and reached 327,000 with a growth rate of 13.4 in 1952 (Solomon, 1985: 36). The first census result of the city held in 1961 indicates that the city had a population of 443,728, with an average annual growth rate of 4.0 (OPHCC, 1987: 9). Data from CSA (1995: 11, 1999: 13, and 2004: 24) indicate that the city had a population of 683,530 with an average growth rate of 7.1 in 1967; a population of 1,167,315 with an average growth rate of 7.6 in 1978.

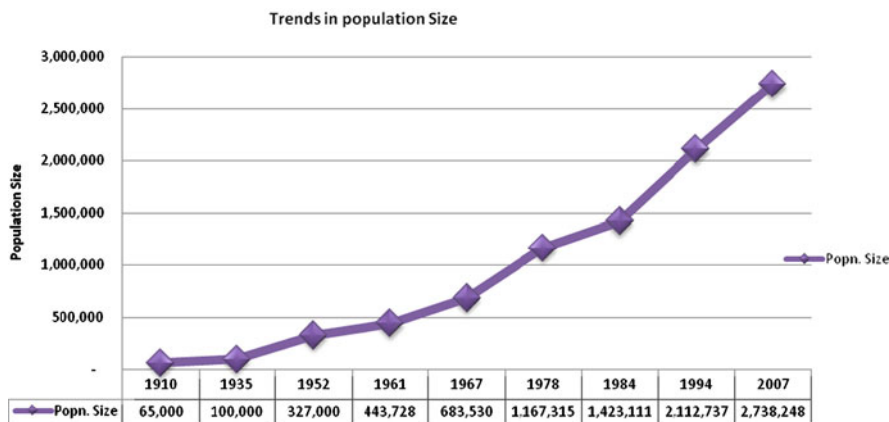


Fig. 11.1 Patterns of change in population size of Addis Ababa city (source: compiled from data found in Solomon (1985: 36); OPHCC (1987: 9); CSA (1995: 11; 1999: 13; 2004: 24; 2007: 10))

Since 1978, the annual average rate of growth has been declining, even though the size increases: a population of 1,423,111 with an average growth rate of 3.0 in 1984; and a population of 2,112,737 with an average growth rate of 3.3 in 1994. The population and housing census results of the 2007 show that the population of Addis Ababa reached 2,738,248 with an annual growth rate of 2.1. The population growth patterns of Addis Ababa since its establishment are shown in Fig. 11.1.

The data revealed that there was exceptionally high average annual rate of growth between the years 1935 and 1952. This was perhaps due to established road networks and work opportunities created by the Italian Administration in its short rule of the country that attracted people to urban settlement. During the period 1952–1961 the average annual growth rate of the population had declined, and increased from 1961 to 1978 and declined again by more than half between 1978 and 1984. This decline seems to be the result of political unrest in the country that followed the 1974 revolution. As is known, the Derg period (1974–1991) nationalized urban land and extra houses and put their management under its central economic system. No land was provided legally to individuals for any kind of construction, halting the expansion of the city only to lead to the inner city to densely populate. Later, squatter settlements and illegal land transactions intensified, which forced the Derg to adopt self-help housing cooperatives that led to the extension of Addis Ababa to the periphery (Solomon, 1985). This new form of urban land expansion to the rural farming community intensified the displacement of farmers from their farmlands and properties, which was a kind of eviction without compensation (Birke, 1997).

The data also indicate a slight increase in the average annual rate of population growth in Addis between 1984 and 1994, to 3.3%. This was perhaps partly due to the instability and war situation taking place in the northern, eastern and western parts of the country after the huge famine of 1984–1985, that made people flee to the city. Following the 1994 census until the latest 2007 census, there was a decrease in the annual rate of growth, which may be due to unfavorable living conditions (housing

shortages, unemployment, rising cost of living), as well as rising age at marriage and lower fertility, and use of family planning. In general, the population size of Addis Ababa has increased dramatically from 65,000 in 1910 to 2.7 million in 2007. The reasons for the increase in the size of the population include rural–urban migration, natural increase and boundary changes.

As regards the rural farming population under the municipal administration, Amos (1962: 7) showed that in 1961 about 49,000 people (11% of the total population of Addis Ababa) inhabiting on a total area of about 195,000 ha of rural land, including forestlands around the city. The size of farming population administered by Addis Ababa City Administration in 2005 was estimated to be more than 148,575 people, of which 69,518 (46.8%) were residing in urban areas of the region, with an average household size of 5.8 persons (CSA, 2003: 31). In the population and housing census results of 2007, Addis Ababa was considered fully urbanized with a total population of 2,738,248 (CSA, 2008).

However, physical expansion of the city into the rural farming community in the periphery has grown from 21,800 ha in 1961 (OPHCC, 1987: 9) to 54,000 ha in 2005 (CSA, 2004: 24). The area of the city in 1984 was 22,204 ha, where it increased to 53,021 ha in 1994. In 1994 the rural population size of Addis Ababa accounted for 28,149 (1.3%) and covered an area of 23,273 ha, while the urban population was 2,084,588 (98.7%) and covered only an area of 29,748 ha (CSA, 1999). The period between 1984 and 1994 was the time when large areas of land, embracing about 25 peasant associations, was incorporated to the municipal areas to get space for the established housing cooperatives.

Expansion since 1996 was the time when the administration of the city restructured into sub-cities and kebeles by proclamation number 311/1995 articles 13/1/A and 66/2. In this period, 23 Peasant Associations (kebeles) with total areas of 37,564 ha were annexed to the city Administration (ORAAMP, 2002). This rapid horizontal expansion indicates the rapid encroachment of the farmland by the urban settlement. It also created formidable problems to the residents and the farming community in the periphery such as deprivation, lack of access to essential basic services, and inadequate income for their survival (Tegenge, 2000: 67).

11.2.2 Migration

Addis Ababa attracts a large number of migrants from all regions of the country. According to CSA (1994), permanent migrants (i.e. not born in Addis Ababa) accounted for about 46% of the population in the city in 1994. Of these, a relatively large proportion (42%) came from other urban areas, while 58% came from rural areas. Drought and famine, demobilization of soldiers (after the fall of the Derg regime in 1991 and the Ethio-Eritrea conflict during 1998–2000) and displacement of people due to other localized conflicts may have contributed to migration in Addis Ababa (AACAA, 1987: 40). For example, 113,418 migrants came into Addis Ababa during Ethio-Eritrea conflict (1998–2000), and at the end of 1997 there were 53,000 migrants in the city (AACAA, 1987: 40).

11.2.3 Employment and Income Levels

The total current overall unemployment rate of Addis Ababa City Administration in 2009 was 27.9%, while the respective figure was much higher for females (38.3%) than for male (18.4%) (CSA, 2009: 12). The rate of unemployment for urban Ethiopia and Addis Ababa was 26.1 and 32.1%, respectively. The main factors for the size of unemployed population are believed to be the creation of inadequate employment opportunities and the growth of population (Girma, 2003: 69).

The 1994 census results for Addis Ababa showed that 35.5% of the population and 45.5% of the households live below poverty line, i.e. with an income less than one dollar a day. A report of Addis Ababa City Administration in 1998 indicated that about 23% of the population in the city lives on a monthly income of less than 200 Birr (about 26 USD at the rate of 7.75 Birr/USD), while 38% lives on 201–550 Birr (about 26–71 USD); and that means about 61% lives on a monthly income of less than 550 Birr (about 71 USD) (AACAA, 1987: 59).

11.2.4 Urban Land Use and the Farming Community in the Periphery

The population density of Addis Ababa, calculated based on the population of the census of 2007, shows 5,071 persons per kilometer square. As a whole, the city's land use could be characterized as "inefficient" in that one can observe large numbers of fenced lands (owned by government and non-government institutions, embassies, military camps, and religious institutions) have been kept idle at different places in the city, signaling how wasteful the existing land use systems are (ORAAMP, 1999: 6). Similarly, stretching from the centre to the periphery, there are enormous parcels of scattered lands where some are left for dumping waste.

On the other hand, a high crude density of 187 people per square kilometer is observed in the periphery of the city, which is higher than the national average which is less than 60 people per square kilometer (ORAAMP, 1999: 3). Likewise, the land use pattern in the periphery is dominated by the cultivation of cereal crops and grazing. Thus there is a real mismatch between land resources and the people who depend on land for their survival. It is a dismal situation that these same people are encountering dislocation, displacement and dispossession of their land for the sake of residential settlements, resettlements and industrial developments.

11.2.5 Linkage Between Addis Ababa and the Rural Periphery of the City

There is strong linkage between Addis Ababa and its periphery, where there is a steady flow of a variety of materials/products and labor resources taking place. However, the ideal linkage is such that reciprocity exists and both sides of the

linkage are beneficial. Existing evidence attest to the fact that the linkage is incomplete, due to inaccessibility and absence of public services at the peripheries (ORAAMP, 1999: 11). Indeed, rural communities around Addis Ababa have poor access to social services, and are victims of the negative effects of urbanization seen from the point of environmental security since the time Addis was established. It is noted that lack of appropriate policy, institutional set up and planning resulted in weak urban network, uncoordinated periphery development, environmental degradation and poor communication with the periphery (ORAAMP, 2002: 18).

This complex situation requires a clear understanding of the forces involved in its make-up, the effects created on peoples' livelihoods and the generation of sound mechanism to deal with future planning exercises in Addis Ababa or elsewhere in the country. This chapter deals with these fundamental issues in the context of the expanding of Addis Ababa, its peripheral environs, and the resulting changes in the livelihoods of the peripheral farming community.

11.3 Objective

The overall objective of the study is to examine the effects of urban expansion on the livelihood situation of the displaced agricultural communities in the peri-urban areas of Addis Ababa. The study also suggests some measures at the community level to mitigate the negative effects of the displacement and negative demographic responses.

11.4 Methodology

11.4.1 Data Collection Methods

Sub-cities and Kebeles where displacement has already taken place were purposely selected for the study. Data were obtained from both primary and secondary sources. Primary data and information were collected in March 2005 using structured and unstructured questionnaires. Participatory group discussions and key informant interviews were conducted separately with representative men, women, and the youth of the displaced communities using checklists. Applying a standard statistical approach¹ for sample size determination, 205 sample households were selected from a sampling frame of 440 displaced households lists obtained from Kebele

¹ $n = 2z^2 pq/d^2$ Where: n = the desired sample size; z = the standard normal deviate set at 1.96 which corresponds to the 95% confidence level; p = the proportion of behaviour under study set at 50%; $q = 1 - p$; d = desired precision of results set at 0.05; and 2 is the correction factor (Poate and Daplyn 1993: 71).

administration. These sample households were selected on the basis of population proportional to size, and actual sample households were eventually located applying the lottery method. Quantitative data was collected from sample households on the basis of survey questionnaire, processed and analyzed using Statistical Package for Social Scientists (SPSS). Quantitative and qualitative data gathered through participatory assessment were processed both manually and electronically to complement data from the household survey. Eventually, the results of both sets of data were integrated into the chapter.

11.4.2 Limitations

The study was based on household heads that obtained compensation (from the government) in cash for the loss of farmland and residence and were offered housing plots in the area for reconstruction. Therefore, the selected sample household heads may not adequately represent the characteristics of all farmers affected by the urban expansion. In particular, those household heads that did not possess housing plot were not represented in the study. In addition, detailed information on household material possession and utilization of incomes were not covered by the study to make a comparison of their previous and present possession.

11.5 Literature Review

11.5.1 Causes of Urban Population Increase and Urban Development

The expansion of urban to the periphery is derived from two sources, namely, urban development and urban population increase. The first source of urban expansion to the periphery is engendered by the “economic development projects” or “urban clearance” or “industrialization”. Space is needed for industry, socioeconomic infrastructure, communication and road networks that require reorganization and redevelopment of the space already inhabited by people (Cernea, 1995: 41).

The second reason for urban expansion to the periphery is mainly due to natural population growth, but rural–urban migration contributes even more in many developing countries (Gugler, 1996: 9; Balchin et al., 2000: 41). Of developing regions, Africa shows the highest urban population growth with faster urbanization (Foeken and Mwangi, 1998: 19; Nuwagaba, 1996: 16; Gugler, 1996: 4). In both cases of urban expansion, “the poor farmers are the net losers while largely better off urban settlers get the benefit of obtaining land at subsidized prices” (Mohan, 1996: 127). As indicated in the aforementioned sections of this chapter, Addis Ababa is expanding in both population and area encroachment.

11.5.2 Nature of Urban Expansion

Cities keep on growing because of its popularity as a place to live in and work, and as a centre of trade, culture, education and birthplace of technological innovation (Oberai, 1993; Carter, 1995; Nuwagaba, 1996; Foeken and Mwangi, 1998; Adell, 1999). Despite this, there is no consensus regarding the shape and size of a growing city. It is known that two major strategies, compact city development strategy and extended urban settlement to the periphery, are known for the development of cities. Compact city development strategy has more recognition and is recently accepted for social and economic utilization of resources although developing countries rarely exercise compaction.

11.5.3 Social Consequence of Urban Expansion

Urban expansion causes displacement, dislocation and segregation that result in the disorder of the social fabric. People in the extended urban areas “live still partly rural and where many of the residents live in the country but are not socially and economically of it” (Carter, 1995: 303). Since social infrastructure is concentrated in the centre, people in the extended area rely on proximity to facilities. This involves long commute for work, market and other basic social needs. There is also a possibility of isolation from the city development, and being sandwiched between the rich, creating class difference. Thus, the community in the periphery could face problems of survival strategies, solidarity network, and systems of power to which the social and economic activities are linked to their original location (Mejia, 1999: 183).

11.5.4 Environmental Consequence of Urban Expansion

In many of the developing countries, urban expansion takes place at the expense of productive and fertile farm- and forestlands. For example, Thengvel and Sachithanandan (1998: 89) discussed the cases of Madras Metropolitan Area of India; the residential area that was 3,318 ha in 1964 increased by three fold and became 20,747 ha in 1991. Egypt lost more than 10% of the country’s productive farmland to extended urban settlement (Hardoy et al., 2001, cited by Minwuyelet, 2004: 18). In addition to the farmland, environmental resources such as clean air and water, peace and quiet, access to the countryside and recreational facilities are environmental values that the rural farming communities lose due to urban expansion in the periphery (Balchin et al., 1995: 189).

11.5.5 Economic Consequence of Urban Expansion

Extended urban areas require provision of infrastructure that takes high development cost. Because of this most of the residents are exposed relatively to high cost of

living and limited work opportunity in the area. Job opportunity varies according to skills (e.g. in trading, vehicle repair, brick making), education (e.g. for salaried jobs in business or in government), and by gender (e.g. male wage work in construction or mine vs. female opportunities in trading or textile factories) (Ellis, 2000: 66).

According to some other literature, urban job opportunity that accommodates rural unskilled labor is limited in Africa. For example, in South Africa, employers are particularly selective and reward higher quality passes with high earnings for high quality of secondary school qualification (Katapa and Swilla, 1999: 38). The challenge is perhaps more intense to the dislocated and evicted farming community since they lose their means of livelihood.

11.5.6 Urban Expansion and Livelihood Strategies in the Urban Periphery

The urban poor have several survival strategies that are categorized as urban strategies and rural strategies (Foeken and Mwangi, 1998: 19). The urban strategy is divided into two: urban non-farming strategies and urban farming strategies. The urban non-farming strategies include all income-generating activities outside income derived from agriculture. These are mainly household activities (cooking and washing) and economic activities which include informal enterprises (open air vehicle repair and washing), metal works, carpentry, petty commodity trade, local brew making, prostitution, formal employment, house maid and daily labor.

Similarly, urban farming strategies are activities deployed on farm by those who have access to a piece of land outside or within the city boundaries. Urban expansion limits the ability of the dislocated farming community to possess asset or capital to diversify livelihood strategies because livelihood diversification of rural people is dependent on natural capital mainly land and its resources.

11.6 Results and Discussion

11.6.1 The Study Areas and the Dislocated Farming Community

The administrative structure of Addis Ababa has three levels, Central City Administration, Sub-Cities and Kebeles. The city is divided into 10 Sub-Cities and 99 Kebeles. The study areas are found within the city in three sub-cities (viz, Bole, Nefas-Silk Lafto and Kolfe-Keraniyo) and four Kebeles as shown in Fig. 11.2.

The information from Addis Ababa City Administration Land Development Agency reveals that the total farming community dislocated by the newly planned urban expansion projects (1997 and 1999) of the city administration in these areas were 731 households or about 4,390 people while those who obtained land for housing plot in replacement were said to be 453 household heads. The difference, 38% of the households, were either those who have agricultural land but do not have

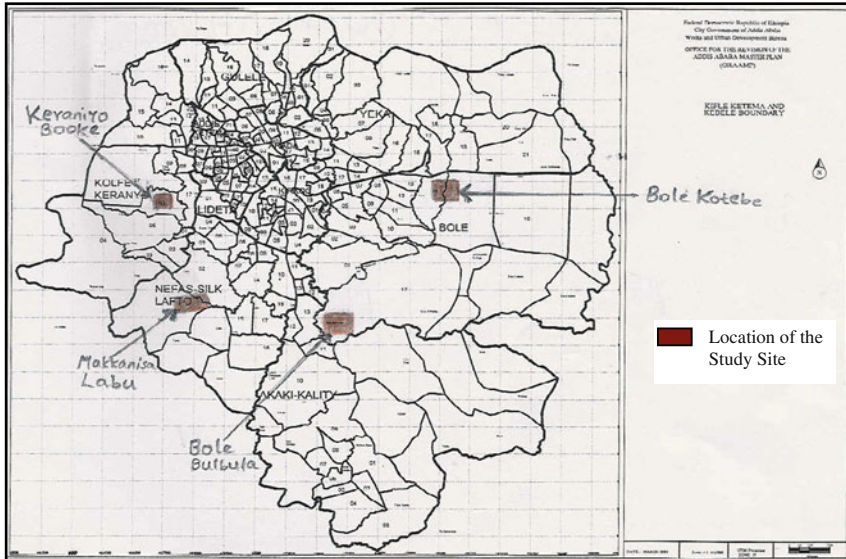


Fig. 11.2 Location of the study area (source: Office for the Revision of Addis Ababa Master Plan (ORAAMP, 2002))

residential settlement in the area or those who were left aside for unknown reason which requires further investigation to find out their situation.

11.6.2 Demographic Characteristics of the Dislocated Farming Community

Major demographic characteristics of the sample-dislocated respondents indicate that about 80% of the sampled household heads are economically active (15–64 years), while 20% are older (65 and above). The male to female ratio in the sampled household heads is three-to-one. In terms of education, the highest proportion (57%) is illiterate which is very high by the city standards (16% including rural areas) (CSA, 1994: 121). Ten percent of the sampled household heads can read and write, about 17% has reached primary and only 15% attended secondary school.

The majority (73%) of the sampled households is married and a significant number (18%) is widowed. Single, divorced and separated are 1, 2, and 6% respectively. The respondents have an average family size of 6.68 per household, which is higher than the national average (5.6) and that of Addis Ababa (5.1).

11.6.3 Community Awareness of the Expansion Program

Key informants from the city administration indicated that the communities in each project area have conducted a series of meetings and were made aware

of the expansion program. They stated that the Kebele and Peasant Association (PA) leaderships have played vital role in organizing the community meetings and discussions.

Contrary to the information from the community, focus groups and key informants revealed that at first one group came, and told them that they are studying the farming situation of the area and interviewed those whom they encountered in the villages. The community took it as a normal agricultural survey. After some time they were told to stop farming, the place of the expansion program in a meeting held in their respective Kebeles. Similar to that of community focus group discussions and key informants, household survey results indicated that the majority (60%) of the sampled household heads were not aware of the urban expansion program in their vicinity, while the rest replied that they were aware of the urban expansion program in their vicinity through mass orientation.

A study on the displacement of Yeka Taffo Peasant Association for Hayat Real Estate Development supports the latter idea in that there is no consultation of the affected community in the program. As a result, the displaced community panicked in the last decision and reacted aggressively (Feleke, 2007: 117). This indicates that the farming community does not have information on the expansion program.

11.6.4 Benefit Packages Envisaged in Dislocation Program

The great majority (in some areas all) of the sampled household heads agree that the government promised to provide compensation in cash and made other promises such as opportunity to job, housing plots and access to services in that order of importance. The data shows that those who obtained compensation in cash and housing plots were 96 and 69% respectively. Community focus group discussion and key informants have the opinion that this variation had occurred due to lack of uniformity of the action at the time of dislocation. It was also noted that cash compensation effected for the dislocated farmers was calculated to be Birr 3.75 (which is about 0.44 USD) per square meter for agricultural farmland and Birr 1.75 (which is about 0.20 USD) per square meter for grazing land while the lease price at the out skirt is Birr 205.10 (which is about 24 USD) per meter square (Sisay, 2002: 45). The Municipality determines payment rates for other permanent assets such as building, plants and livestock by-products while the community does not have a say on the amount and time of payment.

11.6.5 Reaction of the Dislocated Farming Community

The community refused the expansion program until the officials from the city administration including the city mayor accompanied by armed force came to persuade the community and warned the people that “if somebody refuses the program,

he/she will be evicted from the land which is government's property without any compensation". The data from the sampled household survey indicates that the majority (84%) of the respondents first objected but finally left in fear of losing the envisaged benefit packages from the city administration and 2% greed without objection to accept the program. The rest (13%) objected to the last day till their assets are bulldozed by the city administration.

11.6.6 Effects of the Expansion Program on Human Capital

An overwhelming majority (94%) of the sampled household heads responded that they did not get any kind of training that helps them build their human capital. Similarly, the information obtained from the key informants indicates that the program, which was designed to help farmers improve their human capital through training and practical support, is not implemented. However, the dislocated farmers are trying to build their human capital by sending their children to school more than before the dislocation. Sixty-three percent of the interviewed household heads are sending their children to school after the dislocation, while 36% do not send children to school. The reason for not sending to school was lack of access to school at large, while the reason for sending a large number of children to school as compared to before the dislocation is due to an increase in awareness about the importance of education among the dislocated farming community.

The majority of the youth and women in the dislocated farming community were jobless and were not in a position to put their labor on productive activity, giving a different dimension to the problem. Information obtained from group discussion with the youth in all areas revealed that the dislocation program has excluded them and made them dependant on their family at the age they could have their own house and family if they were in the farming occupation. Also those who have family but do not have farmland were not included in the compensation program so that the plot on which they already resided were either given to somebody or made out of plan leaving their hope and future floating without direction.

11.6.7 Effects of the Expansion Program on Financial Capital

The majority (53%) of the sampled dislocated farming community has reported that they have fewer financial assets now than before the dislocation. The reasons forwarded for having fewer assets now than before the dislocation include low income that is limited only to consumption, lack of saving mechanism and lack of interest to own asset in that order of importance. Regardless of their report of low income at present, their response on income shows declines after the dislocation (see Table 11.1).

Table 11.1 Percentage of household heads by income class before and after dislocation

Income class (Birr/annum)	Before displacement		Present after displacement	
	No of HHs	%	No of HHs	%
0–3,000	87	42	102	50
3,001–5,000	54	26	57	28
5,001–10,000	53	26	37	18
Greater than 10,000	11	6	9	4
Total	205	100	205	100

Source: Survey data, 2005

Jobs that are the source of income in the dislocated areas are scarce except the daily labor on the ongoing construction, which has decreased from time to time. Information from the group discussion revealed that because of competency, dislocated farming community members could not get better job for better income. Similarly, access to job by education level showed that out of those who got access to job opportunity 52% were literate. Since the majority (57%) of the dislocated farming community is illiterate, they face a challenge in coping up with the urban way of life.

The gender dimension of employment shows that job is easily accessible to male household heads respondents (34%) than female household heads respondents (27%). Similarly, the majority (67%) of the interviewed household heads responded that women are the major victims due to lack of job, while 16% referred men as the major victims. Another 16% mentioned that both male and female are equally victims of job unavailability. This shows that the change in the mode of life due to urban expansion did not favor the dislocated farming community in improving their income. It did not create opportunity for diversified means of livelihood than agriculture either. Thus the income of the dislocated household heads of the farming community is negatively affected by urban expansion.

11.6.8 Effects of the Expansion Program on Social Capital

Information from community key informants and focus group discussion revealed that the social assets usually manifested through social institutions such as *Dabo* and *Jigi* that brings them together to work were already abandoned. Other institutions like *Jigi Mallaqa* (money contribution for security in case of death of oxen and fire hazard or disaster on property) and *Jigi Farada* (horse owner groupings in support of each other to own horse for transport and for horse race ceremony during festivals) were also abandoned. Social groupings among kin in the rural life such as in coffee ceremony were also limited to a few households because of dispersion of the kins

and relatives in different locations. The only social institution that did not vanish was *Iddir*, security in the case of death, which was reorganized in the new form with new neighbors.

The social relation of the dislocated farming community with their neighbors at resettlement areas does not look smooth because of the life style of the dislocated farming community. The dislocated farming communities live with their animals and use animal by-product as energy source while the segregated urban settlers did not accept this life style resulting in conflicting of interest among them. This difference was significant in Bole Kotebe study area where urban settlement and segregation among settlers was intensive.

On the other hand, the re-location sites did not have access to basic social services. Bole Bulbula and Makkanisa Labu still do not have road, which is basic to the movement of people in search of jobs. Except for electricity for which people contributed to get access, 60–100% of the respondents indicated that they have limited access to most of the social services such as road, water supply, school, telephone, health institutions, public transport, municipal refuse collection, natural resource conservation and recreation and credit service facilities.

11.6.9 Psychological Effect

The majority (60%) of the sampled household heads replied that they are dissatisfied with the benefit package allotted to them. Their dissatisfaction is expressed in many forms. Most (55%) of the respondents replied, for instance, that they were not satisfied with the location of their new residence as they were not allowed to reconstruct in the area according to their preference. Inability to cover the cost of living including cost for food is the other reason forwarded for dissatisfaction with their new location. High competition for job, loss of mutual trust and understanding among the members of the community, increasing loss of identity and culture, significant livelihood crises that affect the dignity and disappointment to the changes in the means of livelihood that led them to migration, in that order of importance were among the negative perceptions on the urban expansion and dislocation program. They are also of the opinions that the program failed to protect areas that have historical, social and cultural significance to the community.

In Bole Bulbula, the community has asked the concerned implementing body to preserve “Abu Bulbula” community centre². However, their appeal did not get attention and the place was ploughed and parceled into residential construction for individuals. The following case illustrates the feeling of a member of the community on the neglected appeal.

²“Abu Bulbula” community centre is a place where the community meet for social, cultural and institutional purposes, protected from any other thing by their ancestors and the present generation.

Case 1

“First of all, I am 36 and married. I learnt and get to know displacement and/or dislocation. Our ancestors were displaced from Bole for airport construction during Emperor Haile Sellasie I regime. As our ancestors, the Derge regime had displaced us in the name of villegization. Now, for the third time, we lost everything and are dislocated by the urban expansion program. We resisted the program but were forced to accept. We appealed in at least to get our historical centre, Abu Bulbula, reserved. No one heard us. [He put ironically] *bakka biraatti osoo Harreen lama dhaltee oduu guddaadha. As nubiratti osoo shan dhaltee hin odeeffamu.* [Meaning], elsewhere, if a donkey gives birth to two at a time it will be good news, in our case if it gives birth to five at a time it will not be news. Identity crisis and cultural change have become the rule of the day. Our children become emotional, unstable and uncultured. I observe some of them are smoking, gambling and drinking. We lost our social institution and respect that protect the young. What is coming now is very awful for me?” A dislocated farmer (name undisclosed as per his demand), Bole Bulbula, March 2005.

11.6.10 Livelihood Strategy and Coping Mechanisms of Dislocated Families

The livelihood strategy adopted by the dislocated farming community in the study area can be characterized as survival or necessity rather than having a choice from different alternatives. Necessity refers to the involuntary approaches adopted by dislocated farming community due to the eviction from access to land, loss and desertion of previous assets (Ellis, 2000: 55). This survival strategy has similarities in most cases with slight difference in some aspects. The difference is mainly influenced by the availability of natural resource and social services in the areas. To this end, Bole Kotebe is relatively in a better position because of access to social service and that it is endowed with mineral (stone) for construction and there are many quarry sites, which have relatively created work opportunity for dislocated farming community. However, there is a fear for future livelihood, as the quarries in the vicinity are almost to be exhausted.

Generally, women farmers are victims of livelihood deprivations. Those who are married became housewife and are economically dependent on the income of their husbands. The following case illustrates a practice of a married woman about her livelihood deprivation due to urban expansion.

Case 2

“My name is Fanose, aged 30 and illiterate. I have four children and husband. We have 8 household members. Out of these only my husband works as daily laborer and sometimes engages in some business in the town. Before dislocation, all the household members could work on our farm. I, as a woman, had my own income independently working on the homestead and on farm. Now all has gone with our land. My family and I became dependant. I cannot work as daily laborer for two reasons. First, I really cannot cop with the situation. Second, I am married and I am not accustomed to work as daily laborer both socially and culturally. Urban life is good, but what to do for livelihood is a problem. I had been working on productive activity, but now I become dependant on my husband. I have no alternative. The circumstance made me a housewife or a housemaid; I work as housemaid and wait for what my husband brings. Now I am dependent on my husband’s income more than ever”.
Fanose Aero, Dislocated Farmer, Bole Kotebe, March 2005.

The common livelihood strategies pursued by the dislocated farmer households are daily labor including guarding, top lid/*Gombiso*/ making, local alcohol making, water vending, and urban and peri-urban agriculture.

11.6.10.1 Daily Labor

The vast majority (97.5%) of the dislocated farming community responded that daily labor is the main job opportunity that was available for them. The 1.5% responded that they got guarding as an alternative next to daily labor. One percent of the respondents were engaged in local alcohol making and water vending.

The dislocated framers and the urban unemployed often compete for the daily work in the areas. The competition usually leads to disagreements and to the extent of fighting among each other, which often is solved by the intervention of police and Kebele administration. The income obtained from this activity ranges from Birr 7–15 (which is about 0.81–1.73 USD) per day that varies for non-professional and experienced worker in some profession on construction. In this condition, if one works 25 days per month, her/his monthly income will be Birr175–375 (which is about 20.18–43.25 USD) which is not beyond subsistence. It is worth mentioning here that the most available work, daily labor, is in short supply as the construction in the study areas are almost saturated.

11.6.10.2 Gombiso Making

Women and young girls of the dislocated farming community usually work on *Gombiso* to generate income, which is made by mixing black clay soil, crop residues, animal dung and water. This work is also getting more difficult than before

because of shortage of animal dung and crop residues. The following case illustrates how women household heads of the dislocated farming community cope up with the urban life (by making *Gombiso* that depends on agriculture for raw material requirement) in the absence of other urban job opportunity.

Case 3

First, promise me not to disclose my name. [I promised]. I am widowed, 45 and illiterate. I have seven household members. Now, I am getting worried more than ever. The money given to me as compensation was finished as we reconstructed our house. I lost my farmland due to urban expansion. As a result, we lost our crops and all by products, our trees and their leaves. What happened to me is a livelihood crisis.

“My daughter and I started making *Gombiso* as a source of income as I could not work as daily laborer. Before dislocation, I make *Gombiso* for home use once in a blue moon. Now it became our means of livelihood. We collect the raw materials (animal dung, clay soil, crop residue and water) from the field. My daughter helps me after school and on weekends. I work five to seven *Gombiso* a day depending on availability of the raw materials. I mix these materials and make cake on Gulanta [(seat concave in shape made of mud)]. I wait for 2 days till it gets smooth and dry. Here, *Gombiso* commands low price but needs care because it is delicate and difficult to get to market. As it dries, I take to market for sell. I woke up at 2 AM in the morning and start walking on foot with others and reach Merkato (around bus station) at 6 AM. On my back and hand I carry an average of four *Gombiso* and walk more than 15 km to reach the market. I wait till 10 AM to get a fair price, 5 birr [which is about 0.58 USD] each. After 10 AM, I sell the left over *Gombiso* to the retailers for 3 birr [which is about 0.34 USD] each and go back home. In doing so I could not make more than 20 birr [which is about 2.31 USD] per week in two market days [80 Birr/ 9.23 USD per month]. I work this because I do not have alternative”. A dislocated farmer, woman, Bole Bulbula, March 2005.

11.6.10.3 Local Alcohol Making

Women and girls are also found to be increasingly involved in local alcohol making. The common alcohol makings are distilling Areki and Tella – local brewery. This is also casual because the customers are daily workers who work on the construction in the area. So demand for these local drinks is highly associated with availability of construction in the area. In group discussions, women engaged in this activity complained that the income is very much low. They get about 50–60 birr (which is about 5.77–6.92 USD) per month which allows them only to subsist.

11.6.10.4 Urban and Peri-Urban Agriculture

It is learnt that agriculture remains the main source of livelihood for many of the dislocated farming communities. Other than their effort in search of job, some of the interviewed household heads responded that they generate farm income elsewhere and crop sharing arrangements. It was also indicated that those who get income from farming either way are still dependent on agriculture. In all the study areas, the majority of the dislocated farmers commonly practice peri-urban agriculture as means of livelihood and income earning. About 64% of the interviewed household heads keep farm animals to secure food and source of income for the family.

Despite this potential, the sector, in the context of the periphery of Addis Ababa, suffers from lack of recognition as a component of urban economy and from the absence of technical support mainly agricultural extension service. The agricultural activity practiced by this dislocated farming community is simple cereal crop production with poor farm management practice. The income from this sector has become subsistence that is less than 3,000 birr [which is about 346 USD] per year, while most of them had been producing enough before dislocation.

11.6.10.5 Water Vending

In all the study areas except Bole Kotebe, water vending is the other means of livelihood for some of the households. About 38% of the interviewed household heads owned an average of two donkeys as a means of income and these animals are considered as financial assets to maintain livelihood security. Those owners of a donkey work five to eight trips per day and earn five to eight Birr per day at one birr per trip which could make 125–200 Birr (which is about 14.42–23.07 USD) per month if they are able to work 25 days a month with two donkeys. Rental and remittance are other non-agricultural activities as income sources for few of the respondents.

Generally, similar to the study results by Berhanu (2003: 8) and Feleke (2007: 117), the expansion program has not been participatory and has marginalized the farming community. The livelihood strategies adopted by dislocated farming community are mostly casual labor and urban agriculture. As urban settlement intensified into these areas, these strategies are getting less dependable. At present, the dislocated farmers are attempting to send their children to school to improve their human capital. It seems that this positive aspect of urban expansion also needs support to continue, so these temporal livelihoods are brought to an end.

11.7 Conclusions and Recommendations

11.7.1 Conclusions

Urban growth is occurring mainly by horizontal expansion in Addis Ababa. The urban expansion program implemented in and around Addis Ababa did not involve the community located in the periphery in general, and the dislocated farming

community in particular. This study showed that the planned urban expansion and implementation program of Addis Ababa lacks participatory development methodologies that can minimize the negative effects of urban expansion that has marginalized the rural farming community. The majority (80%) of the dislocated farmer household heads are within the working age, of which the highest proportions (57%) of them are illiterate. The effect of urban expansion on these illiterate dislocated productive farmers has been significant in different aspects.

Thus, the compensation program implemented for urban expansion has been disadvantageous, and also excluded women and children aged 18 and above. Likewise, the dispossessed and dislocated were not assisted in restoration of their livelihood status nor capacitated to adapt to the new way of life. Changes in the mode of life resulted in poor economic conditions that forced most to engage in casual activities. These livelihood strategies presently adopted by the dislocated farming community is characterized as survival or necessity with low level of income other than having choice from different alternatives.

Improved housing condition with more rooms for the family and sending children to school more than before the dislocation were among the positive aspects of urban expansion program. However, urban expansion has exposed the dislocated farmers and their family to joblessness, low income and high cost of living. Women are more vulnerable than men to livelihood crises. Before dislocation, married women were engaged in productive activities but now they are forced to be dependent housewives.

With the limited social services in the relocation area, traditional organizations, which support the communities in case of crisis, have disintegrated. Generally, urban expansion has negatively affected the life of the dislocated farming community by affecting natural, physical, human, financial and social assets and incomes of the farming community in the periphery.

11.7.2 Recommendations

1. A more comprehensive economic development approach should be implemented in the periphery; where non-farm activities will be promoted; infrastructure development will be enhanced; and favorable conditions will be created. There must be an integrated participatory approach for the better integration of the dislocated farmers into the new way of life in urban settlement.
2. The dislocated farming communities are now engaged in casual activities, which generate low income. This underlines the need for support in terms of education and training, access to credit facilities, better infrastructure and market information, access to land and intensive urban agricultural production and improved productivity.
3. Addis Ababa has been exercising horizontal growth since its establishment. This trend has brought social, economic and environmental problems that often outweigh the advantages. It is necessary to change this trend and induce the policies that implement vertical growth of the city, with more attention to create and improve human capital – mainly work opportunity for women and children.

References

- Addis Ababa City Administration (AACAA). (1987). *The First Five Years (1997–2001) Development Plan*. Addis Ababa, Addis Ababa City Administration.
- Adell, G. (1999). *Literature Review Theories and Models of the Peri-Urban Interface: A Changing Conceptual Landscape*. London, Peri-Urban Research Project Team Development Planning Unit.
- Amos, F.J.C. (1962). A Development Plan for Addis Ababa. *Ethiopian Observer* 6(1): 5–16.
- Balchin, P.N., Bull, G.H. and Kieve, J.L. (1995). *Urban Land Economics and Public Policy*. Fifth edition, London: Macmillan Press Ltd.
- Balchin, P.N., Isaac, D. and Chen, J. (2000). *Urban Economics: A Global Perspective*. Basingstoke, Palgrave.
- Bekure Woldesemiati. (1999). For a Man Urbanized Ethiopia. In Beyene, D., Mekete, B. and Tegegne, G.E. (eds.), *Migration and Urbanization in Ethiopia: Proceedings of the Second Annual Conference*. Addis Ababa, Association of Ethiopian Geographers.
- Berhanu Adinew. (2003). Securing Land Right in Africa: Can Land Registration Serve the Poor? A Case From Ethiopia. Paper Prepared for the Mid-term Workshop Held in Maputo, Mozambique 3–6 November 2003: SOS-Sahel Ethiopia.
- Birke Yami. (1997). A History of Urban Morphology (Form and Structure) and Land Use in Ethiopia. In *The Workshop on Urban Development Fields of Ethiopia*. Addis Ababa, Minster of Public Works and Urban Development.
- Carter, H. (1995). *The Study of Urban Geography*. Fourth Edition, London, Arnold, a Division of Hodder Headline.
- Cernea, M.M. (1995). Urban Settlements and Forced Population Relocation. In Mathur, H.M. and Cernea, M. (eds.), *Development Displacement and Resettlement Focus on Asian Experiences*. Delhi, Vikas Publishing House Pvt. Ltd.
- Central Statistical Authority (CSA). (1994). *Population Census of Ethiopia*, Vol. 1: 35–45.
- Central Statistical Authority (CSA). (2003). *Ethiopian Agricultural Sample Enumeration, 2001/2002 Results for Addis Ababa*. CSA (1995: 11, 1999: 13, and 2004: 24).
- Central Statistical Authority (CSA). (2004). *Urban Bi-Annual Employment/Unemployment Survey*. Addis Ababa, Central Statistics Authority.
- Central Statistical Authority (CSA). (2008). *Summary and Statistical Report of the 2007 Population and Housing Census Population Size by Age and Sex*. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority (CSA). (2009). *Urban Bi-Annual Employment/Unemployment Survey*. Addis Ababa, Central Statistics Authority.
- Ellis, F. (2000). *Rural Livelihoods and Diversity in Developing Countries*. Oxford, Oxford University Press.
- Feleke Tadele. (2007). Urban Development and the Displacement of Rural Communities Around Addis Ababa. In Pankhurst, A. and Piguat, F. (eds.), *Moving People in Ethiopia Development, Displacement, the State*, London: James Currey.
- Foeken, D. and Mwangi, A.M. (1998). Does Access to Land have a Positive Impact on the Food Situation of the Urban Poor? A Case Study in Nairobi. *Eastern Africa Social Science Research Review* XIV(1): 19–32.
- Girma Kassie. (2003). Population, Labor Force and Unemployment in the Primate City of Ethiopia: A Comparative Study of Two Periods. *Ethiopian Journal of Development Research* 25(1): 52–73.
- Gugler, J. (ed.) (1996). *The Urban Transformation of the Developing World*. Oxford, Oxford University Press.
- Katapa, R.S. and Swilla, I.N. (1999). Gender Differences in School Performance: Evidence Form the National Form IV Examination Result and Implications for Poverty. *Eastern Africa Social Science Research Review* XV(1): 33–54. Addis Ababa, OSSEREA.

- Mejia, C.M. (1999). Economic Dimensions of Urban Resettlement: Experiences from Latin America. In Cernea, M.M. (ed.), *The Economics of Involuntary Resettlement Question and Challenges*. Washington, DC, The World Bank.
- Minwuyelet Melesse. (2004). *City Expansion, Squatter Settlements and Policy Implications in Addis Ababa: The Case of Kolfe Keranio Sub-City*, MA Thesis. Addis Ababa, Addis Ababa University.
- Mohan, R. (1996). Urbanization in India: Patterns and Emerging Policy Issues. In Gurgler, J. (ed.), *The Urban Transformation of the Developing World*. New York, NY, Oxford University Presses.
- Nuwagaba, A. (1996). Urbanization and Environmental Crisis in a Ugandan City: Implications for Environment Management and Sustainable Development. *Eastern Africa Social Science Research Review* XII(1): 15–33.
- Oberai, A.S. (1993). *Population Growth, Employment and Poverty in Third-World Mega Cities, Analytical and Policy Issues*. New York, NY: St Martins Press.
- OPHCC. (1987). *The 1984 “Population and Housing Census of Ethiopia Analytical Report on Results for Addis Ababa”*. Addis Ababa, Office of the Population and Housing Census Commission.
- ORAAMP. (1999). *Land Use City Structure Studies of Addis Ababa and the Metropolitan Area: Executive Summary Report of Land Use and City Structure Study Team*. Addis Ababa, Office for the Revision of the Addis Ababa Master Plan.
- ORAAMP. (2002). *Addis Ababa in Action: Progress Through Partnership City Development Plan 2001–2010 Executive Summary*. Addis Ababa, Office for the Revision of the Addis Ababa Master Plan.
- Pankhurst, R. (1962). The Foundation and Growth of Addis Ababa to 1935. *Ethiopian Observer* VI(1): 35–36.
- Poate, C.D. and Daplyn, P.F. (1993). *Data for Agrarian Development*. New York, NY, Cambridge University Press.
- Sisay Zenebe. (2002). *A Preliminary Assessment on Urban Land Market in Addis Ababa*. Addis Ababa, Addis Ababa University.
- Solomon Mulugeta. (1985). *Meeting the Housing Shortage in Addis Ababa: The Case of Housing Cooperatives*, MA Thesis. Addis Ababa, Addis Ababa University.
- Tegege Gebre Egziabher. (2000). *Perspectives and Issues of Urban Development in Ethiopia*, Working Paper No.10, RLDS. Addis Ababa, Addis Ababa University.
- Thengvel, C. and Sachithanandan, A.N. (1998). The Land Subdivision Pattern and Its Implication for Urban Development in Madras City. *Regional Development Studies* 4: 87–100. UNCRD.
- Tibebu Debebe. (2001). *Policy Challenge for Urban Growth and Balanced Territorial Development in ORAAMP 2001: Workshop on “The Role of Urbanisation” in the Socioeconomic Development Process, Demographic Challenges Spatial Development and Agriculture (Part II)*. Addis Ababa, Addis Ababa University.

Chapter 12

Are there Mixed Malthusian and Boserupian Consequences of Population Pressure and Food Insecurity? Vulnerability and Demographic Responses in 16 Drought-Prone Districts Throughout Ethiopia

Charles Teller

Abstract This was a national, capacity-building vulnerability assessment and profiling project carried out in 16 carefully targeted drought-prone districts in 1999–2002 by the Ethiopian Federal government in collaboration with regional multisectoral government counterparts and university researchers. It used a coordinated, consensus-building approach of assessing interdisciplinary and multilevel aspects of population/food insecurity and disease interrelationships. In the process, both Malthusian and Boserupian theories were used to hypothesize that demographic change and response are important risks as well as appropriate adaptations to frequent natural and human hazards. To compliment the scarcity and unreliability of secondary data and information systems from relevant ministries and international organizations, primary data were collected on a multistage, stratified random sample of 10,000 households in 93 communities in 16 drought-prone districts, and spread out in the four most populated regions. The most demographically vulnerable households were found to be either newly formed, or old age and/or female headed, or with many siblings under 10 years of age. The most important assets for household resilience to drought continue to be access to arable land, draft animals and adult labor. Household coping strategies and resilience to structural vulnerability were common, with off-farm labor, temporary migration and income diversification as the more successful adaptations. This participatory research finds support for neither the Malthusian nor Boserupian effects, exclusively: there seems to be no direct and consistent causal relationship between crude population-land pressure, rapid population growth and vulnerability to food and nutrition insecurity. The effect of population density is a combination of contextual, technological, organizational, infrastructural and ecological factors and conditions. There are such large inter-district and agro-ecological variation in different types vulnerability that require contextual

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and micro-level assessment to establish valid criteria for targeting of more effective famine prevention, risk reduction and climate adaptation programs. As part of poverty and food insecurity/disaster risk reduction policies, demographic strategies would include labor migration, carefully planned resettlement, small and large urban center development, and delayed transitions to adulthood and childbearing.

Keywords Population pressure · Vulnerability · Food/nutrition insecurity · Labor migration · Agricultural diversification · Malthusian · Boserupian · Resilience and adaptation · Climate change

12.1 Introduction

12.1.1 Ethiopia

Ethiopia has suffered from increasingly frequent hunger and malnutrition over the past three decades, with the number of people affected rising to 13–15 million in the 1999–2000 pre-famine and 2002–2003 famine years (FEWSNET, 2003). In 2009, 7.56 million chronically food insecure people (approximately 10% of the total population) were covered by a Productive Safety Net Program (PSNP) in eight regions and 290 weredas (DM/FSS/MoARD, 2009; FEWSNET, 2010). Moreover, climate change is expected to impact Ethiopia over the coming years by increasing the frequency, irregularity and severity of weather-related shocks (MoARD, 2010). However, the population dimensions of these high numbers of food insecurity and vulnerability to environmental hazards are not well understood (Teller, 2010a; Teller, et al., 2010b)

With a high annual population growth rate of 2.6% in the 1994–2007 intercensal period (CSA, 2010), pre-transitional fertility in rural areas (6.0 TFR) and low modern contraceptive prevalence rates in rural areas (13%) (CSA and ORC Macro, 2006), and increasingly smaller farm plots (0.14 or under 1/6 per capita hectare average) and environmental degradation, the issue of how population factors may increase vulnerability to famine and food insecurity has been widely debated globally and also in Ethiopia. Some international and national agencies maintain that demographic factors are a major cause of the famine and environmental problems, and one of the main obstacles to poverty reduction (EEA, 2007; PAI, 2009; World Bank, 2007). Others, including many in the food and agricultural sector and in the government, feel that they are not major causes, and focus of balancing population growth and distribution with natural resources and technological and organizational change (Temesgen et al., 2008). However, the government, now planning the new

Research collaborators on this project include Ali Hassan (who provided the quotations here), Gugsu Yimer, Yibrah Hagos, Keffene Asfaw, Asfaw Yitna, Alemtsehay Aberra, Yared Mekonnen, Jellaladin Ahmed and Assefa Hailemariam; all 16 district vulnerability profile studies are found at www.dppa.gov.et/SERA

development strategy (2010–2015), is starting to take more seriously the population growth and distribution barriers to middle income status.

12.1.2 The Literature: Multidisciplinary and Intersectoral

There are four distinct types of literature that influenced this Ethiopian-specific vulnerability research and which this paper taps into:

- (1) Vulnerability and Resilience to Disaster (Anderson and Woodrow, 1998; ISDR/UN, 2002, 2005; Alwang et al., 2001; Haghebaert, 2001).
- (2) Causes of food insecurity and malnutrition (Joy and Payne, 1976; Webb et al., 1992; Sen, 1981).
- (3) Population, land, environment and climate (Boserup, 1965; Bilborrow, 1987, 2001; Pender, 1998, 2001; Pender and Berhanu, 2004; Turner et al., 1993; Lutz and Scherbov, 2001; de Sherbinin et al., 2007; Adamo, 2009).
- (4) Program assessment and evaluation of national and international efforts towards famine prevention and excess mortality reduction in Ethiopia (Riley et al., 2002; Ferris-Morris, 2002; Marchione and Novak, 2003; Lautze, 2003; USAID/Ethiopia, 2004; Teller et al., 2009).

African studies of these interrelationships are far fewer than those found in Latin America and Asia, and tend to focus at the district level. Those few that are cited include the well-known Tiffen and Mortimore (1994) study on Machakos district in Kenya; and the Turner et al. (1993) book of case studies from the more densely populated areas in Africa.

In a summary of the theoretical aspects of the relationship between trends in population, land use and agriculture, Bilborrow and Carr (2001) outline some of the factors shown to influence household responses to rural population growth:

- (1) potentially arable land nearby,
- (2) quality of natural resources,
- (3) land tenure regime,
- (4) land distribution and landlessness,
- (5) urban employment opportunities,
- (6) accessibility of product and labor markets,
- (7) alternative forms of agricultural technology, and
- (8) relevant government policies, including those in land, transportation, health, and education.

12.1.3 Ethiopian Literature

Before doing this in-depth, contextual research, we had felt that neither neo-Malthusian nor Boserupian models offered satisfactory explanations of population-food insecurity-environment linkages. Since these complex processes

are difficult to disentangle on a country scale, sub national data for smaller political units, such as districts, are better suited for testing the interrelationships because they permit taking into account additional factors, including contextual factors that differ from one area to another.

The uniqueness of the historical, political, socio-economic and cultural situation of Ethiopia, which has suffered frequently from famine, environmental degradation, hunger and malnutrition in the last 25 years, is represented by a rich literature of seminal works, especially by Pankhurst (1985); Dessalegn (1992, 2007, 2009); Mesfin (1986); Webb et al., (1992); Pender (2001); Devereux et al., (2002); Sharp and Devereaux (2004); Lautz et al., (2003); and Frankenberger et al., (2007).

The government's research on vulnerability to drought, famine and disease was carried out under the SERA project (DPPC, 2002a) and coordinated by this author; it was influenced the international methodologies developed in the 1970s by Joy and Payne (1976), the IRC (Haghebaert, 2001), Shawel (1993); and the USAID Famine Early Warning System (FEWS) (Downing, 1991).

Given the special population dynamics in Ethiopia, such as large population size, high rural densities and large family size, the inclusion of population factors in vulnerability, risk reduction and resilience to drought and food insecurity/malnutrition consequences has not been adequately conceptualized, contextualized nor rigorously analyzed in Ethiopia (Teller, 1997, 2005, 2010a). The few research efforts in Ethiopia have taken a more Malthusian approach (eg., Dessalegn 1992; Belay 1996; Biellil et al., 2001; Daniel, 2003; Berhanu 2005), while a more balanced view, taking into consideration both Boserupian and Malthusian approaches has been few (Pender and Berhanu 2004; Yared, 2003; Teller, 1996, 2005, 2007; Teller et al., 2010b; Little et al., 2006; World Bank, 2007; Temesgen et al., 2008).

As a result of the National Population Policy of 1993 and its main objective of balancing population growth and resources, the Addis Ababa University's Demographic Training and Research Center (DTRC) undertook a number of national and sub-national research efforts around the country in efforts to disentangle these interrelationships (Markos, 1997; Markos and Gebre-Egziabher, 2000; DTRC/PSTC, 1998, 2000; Teller, 1996, 2001, 2005). The findings indicated the need to contextualize the understanding over time and at various agro-ecological zones and levels of analysis (DPPC, 2002b).

12.1.4 The Holistic Approach

In this chapter, we look at three holistic aspects of the population/food insecurity interrelationship with demographic change and response, and consider the policy implications for the reduction of high levels of chronic hunger and malnutrition:

1. Identify the demographic characteristics and profiles of vulnerable agro-ecological zones, communities and households,
2. Establish the existence or lack of relationships between population variables and vulnerability, and
3. Analyze the demographic responses to both human and natural hazards factors.

Finally, by synthesizing results, we make evidence-based recommendations for population and famine-risk reduction policies and programs.

12.2 Objectives, Conceptual Framework and Methodology

12.2.1 *The SERA (Strengthening Emergency Response Abilities) Project*

The objective of the SERA project was to profile the types of populations (communities and groups) most vulnerable to the shocks of drought (DPPC, 2002b). It carried out vulnerability research into the causes of chronic vulnerability to food insecurity and chronic malnutrition in 16 drought prone districts in the 4 main regions of Ethiopia, and the planning for developing response packages to address the underlying causes (see all 16 profiles at www.dppa.gov.et/library/SERA).

Following the classic approach of the Functional Classification of Malnourished Populations (Joy and Payne, 1976), five leading applied research questions of the SERA project were stated (DPPC/SERA, 1999):

Key Questions For Vulnerability Assessments

1. Who are vulnerable to a particular hazard?
2. Where do they live (by agro-ecology)?
3. When do they face these hazards most frequently?
4. What are the factors most highly associated with the vulnerability, and with the nature of their resilience and coping strategies?
5. Why/how do they become highly vulnerable?

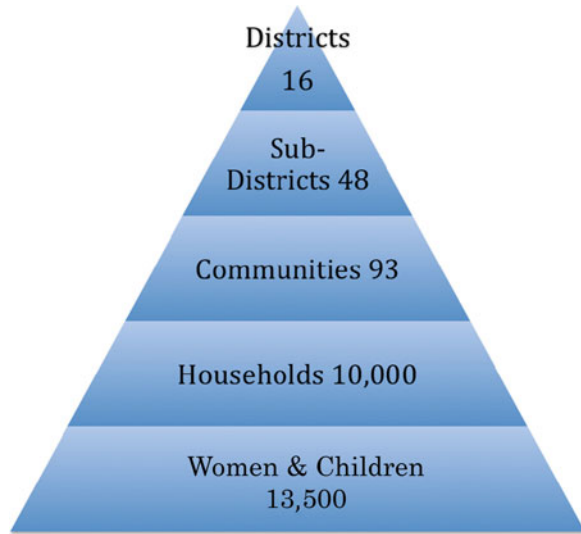
This chapter will focus on the role of demographic risk factors and multiple responses at different levels of analysis within a district, taking into account other physical, organizational, institutional, economic and socio-cultural and policy dimensions. It will utilize and triangulate multiple sources of data from primary household surveys and community interviews and focus groups, to secondary data from multiple government and non-governmental sectors.

12.2.2 *Hypotheses*

The working hypotheses for this demographic paper are:

1. Neither the Malthusian nor the Boserupian responses to population pressure can be readily predicted. High density can either increase vulnerability or strengthen resilience, depending on other historical, technological, contextual

Fig. 12.1 Five levels of analysis and sample sizes



(agro-ecological, cultural, institutional), and community factors (see Temesgen et al., 2008).

2. There is large within-country variation in vulnerability to food insecurity and malnutrition which makes programming complicated (Schmidt and Dorosh, 2009).
3. There is need to target all five levels of analysis (district, agro-ecological, community, household, individual), and interpret holistically (Teller, 2005; see Fig. 12.1).
4. The demographic factors that most affect food and nutrition insecurity are related to land, labor and large livestock (Dessalegn, 1992).

12.2.3 Methods

The quantitative and qualitative primary data collection focused on district and sub-district levels. The household surveys were a multi-stage (stratified by agro-ecological zone), random sample in 16 districts around the country – and 93 (see Fig. 12.1). The completed sample size was 9,839 households, 9,137 women of reproductive age, and 4,330 measured children aged 3–36 months. It also included 1,303 key informants and 93 community group discussions. The data collection methods consisted of three different sources of data: multi-sectoral data, primary rapid rural appraisal and primary household and women's survey and women's and child anthropometry. The secondary data were collected between 1999 and 2001, and the primary data between February and April, 2000, during the early stages of the 2000 (i.e., 1992–1993 Ethiopian calendar) famine.

The whole institutional and decentralized process of rigorous and standardized research, vulnerability profile development and intervention package design was

a unique collaboration between the host Federal government institution, DPPC, and the 4 major regions, their 8 zonal and 16 district governments. Key to the success were the formation of so-called Vulnerability Technical Working Groups (VWGs) established at Zonal level and filled by masters’ degree researchers (from demography, social and agricultural sciences) from these very zones with extensive knowledge of the language, culture, history and politics. They, with the support of the regional and zonal governments, were able to pull in experienced personnel and resources from related line ministries and NGOs working in the project districts.

12.2.4 Multi-Causal Conceptual Framework

The main spatial demographic variables are population size, agricultural density, agro-ecological zone and spatial distance to urban centers, while the main micro factors included household size and composition, marital status, adult labor, land and cattle density, migration, fertility, mortality and morbidity. The conceptual framework is shown on Fig. 12.2.

A technical and participatory consensus-building and consultative process was followed in developing the conceptual framework utilized in the SERA project, which was then supplemented with a document on National Vulnerability Development Guidelines (DPPC, 1999). The framework was developed as an overview of the interrelationships between key concepts and content area, to generation working hypothesis and key questions which suggest directionality and

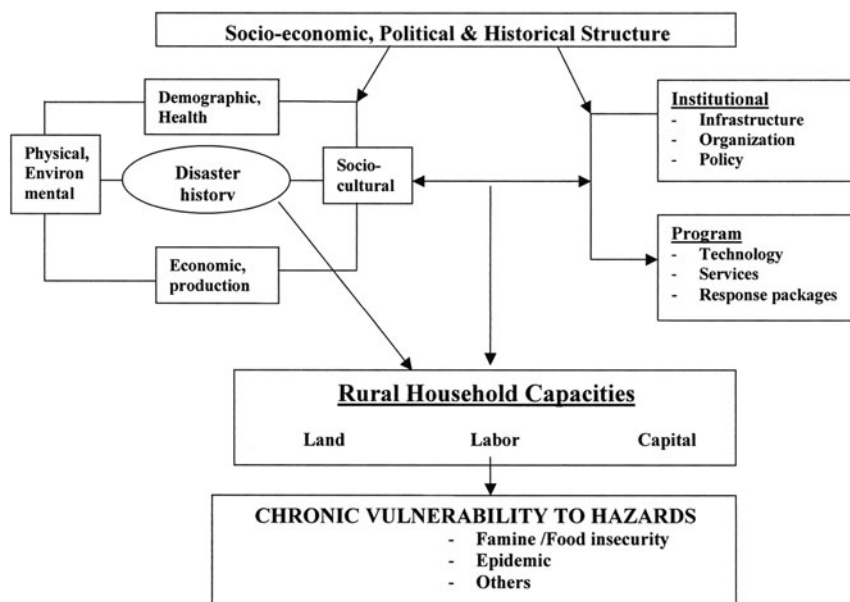


Fig. 12.2 Conceptual framework: causes of chronic vulnerability in rural areas

causality of these relationships, and as a guide to the selection of the most important indicators. Within the socio-economic, political and historical context, it represents a balance (on the left-hand side) between demographic, socio-cultural, economic, environmental, environmental, physical and health factors, and (on the right hand side) the institutional, organizational, infrastructural, technological and program situations. Both are mediated by local household capacities of land, labor and capital and as resilience to chronic vulnerability to hazards and shocks. Thus the research methods would have to include quantitative and qualitative, cross-sectional and longitudinal approaches.

12.3 Findings

12.3.1 Demographic Profile of the Drought-Prone Districts: Similarities and Differences

It is important, at the start, to get a descriptive feel for the population characteristics of each district, and the perceptions and felt needs of the populations, for this is what the government policy makers look at or hear about first. Table 12.1 shows a district and household demographic profiling of the 16 purposively-selected drought-prone districts, by broad region and administrative zone. There were 93 rural communities randomly selected, stratified by agro-ecological zone and enumeration area. It was estimated that a minimum of 400 households per district would be sufficient for statistical analysis of the dependent variables (13 of the 16 districts had 588 households and above).

The first two columns are district-level total population and density from the National Census, and the last six columns contain household and individual data from the 10,000 households (Table 12.2). Since the sample is not a national or regional sample, no national totals are given from the study. Only the totals from the National Census (projected from 1994) and the 2000 Ethiopia, are included, for comparative purposes. The demographic variables were selected from the National Guidelines on Vulnerability Development (DPPC, 1999) as those conceptually related to food insecurity and malnutrition, and a national consensus for the district profiling.

There is a large amount of variability in these rural areas both within these drought-prone zones and regions, as well as between regions. Twelve of the 16 weredas have total populations between 90,000 and 196,000 people, much higher than the national average of 46,000. The variability in crude density ranges from the Southern Zone A districts A1 and A2 (409 and 364 persons/km²), to the Amhara Zone district A2 (18 /km²). Fertility is uniformly high (completed CEB from 5.7 to 8.8), and also under-five mortality in the first three regions (195–396), but Tigray had significantly lower mortality (121–174). On the other hand, the Northern-most part of the region had by far the highest female headship (42–44% in three of the 4 districts closest to the Eritrean border) and formerly married women (39–45%),

Table 12.1 List of demographic indicators for vulnerability profile development, 1999–2001

General indicator	Specific indicator	Data source and collection method
1. Pop. size and rural-urban distribution	1.1 Size by 5-yr age groups and sex by 5-year time period 1.2 Distribution by rural/urban location by 5-year time periods	1994 census; 1995–2000 projections
2. Pop. growth	2.1 Ave. annual growth rates of rural and urban areas, 1985–1995; 1995–2000 projections	1984–1994 census; projections 1995–2000
3. Pop. density	3.1 Crude: rural population/all land 3.2 Agr. pop./cultivated land 3.3 Agr. pop./arable land	CSA; MoFED; MoARD
4. Age-related dependency	4.1 Pop. under 15 and 65+/pop. 15–64	1994 Census
5. Perceived dependency	5.1 Persons listed as non-productive/people listed as productive	SERA HH survey
6. Family size and fertility	6.1 Ave HH size 6.2 Mean no. of children ever-born to women 45–49 6.3 Total fertility rate (adjusted)	1994 Census; SERA HH survey 1994 Census; SERA HH survey 1994 Census; SERA HH survey
7. Migration:		
7.1 In-migration;	7.1.1 Permanent in-migrants/total pop. of wereda 7.1.2 Flows between rural and urban areas/total migrants in wereda 7.1.3 No. of recent in-migrants * <1 yr/total migrants in the area	Census Census Census
7.2 Outmigration	7.2 No. of HHs with at least one permanent out-migrant/total no. of HHs in same area	SERA HH survey
7.3 Stress migration (by age and sex)	7.3 No. of persons whose reasons for outmigration are strong push factors/total no. of out-migrants in same area	SERA HH survey
8. Agro-ecological pop. distribution	Proportion of total pop. residing in each agro-ecological (highland, midland, lowland) zone	MoARD; SERA key informants
9. Mortality (by sex, rural/urban residence)	9.1 Infant (0–1) 9.2 Child (1–4) 9.3 Under-five (0–5)	Census: indirect methods of CEB and surviving children to women 20–34; SERA HH survey, indirect methods
10. Female Household headship (by sex, marital status)	10.1 No. of HHs head by non-currently-married females 10.2 No. of HHs headed by currently-married females	Census SERA HH survey

Table 12.2 Demographic indicators in sample districts, household survey^a, 2000

Region, zone And district (#1, #2)	Rural pop. 1999 (000s) ^a	Pop. density per km ² (crude)	Rural fertility (CEB 45-49)	Rural under-five mortality/1,000 (persons <5 yrs.)	% Rural female headship	% Rural females 15-49 formerly married	% Adults outmigrated >6mo. in last 10 yrs. (Male/Fem.)	% Adults as seasonal migrants (<6mo.) in past 12 months (Male/Fem.)
<i>Amhara</i>								
Wag Himra 1	136	48	5.7	217	26.9	24.7	21/28	12/17
WH 2	54	18	6.3	240	18.2	20.7	22/20	15/23
S. Gondor 1	172	84	7.1	278	16.0	15.0	1/3	2/3
SG 2	91	118	7.6	369	28.6	23.9	3/3	2/3
<i>Oromiya</i>								
E. Haraghe1	166	82	8.8	308	18.0	9.6	30/24	30/25
EH 2	196	147	7.9	268	21.9	10.0	6/3	14/5
North Shewa 1	153	106	8.3	253	18.5	21.0	7/5	7/3
NS 2	111	108	7.7	195	18.4	15.5	10/5	16/6
<i>SNNPR</i>								
Hadiya 1	187	409	9.1	251	8.8	8.5	18/-	2/1
Had 2	288	364	7.5	218	15.1	9.0	48/-	3/4
North Omo 1	105	137	8.5	203	23.7	9.2	18/-	2/1
NO 2	112	89	8.5	213	8.3	5.8	17/-	1/2
<i>Tigray^b</i>								
Misrakwi 1	102	111	8.0	121	44.2	44.6	34/10	13/-
Mis2	90	127	7.8	131	43.4	40.4	35/33	14/-

Table 12.2 (continued)

Region, zone And district (#1, #2)	Rural pop. 1999 (000s) ^a	Pop. density per km ² (crude)	Rural fertility (CEB 45–49)	Rural under-five mortality/1,000 (persons <5 yrs.)	% Rural female headship	% Rural females 15–49 formerly married	% Adults outmigrated >6mo. in last 10 yrs. (Male/Fem.)	% Adults as seasonal migrants (<6mo.) in past 12 months (Male/Fem.)
Mahalwi 1	139	117	7.9	128	42.7	39.3	25/13	14/–
Mah 2	63	50	7.7	174	26.0	29.3	40/42	19/–
NATIONAL								
Census 1994								
DHS 2000 ^c	46 Million			187.8	21.3	12.3		

Sources: all but first two columns from SERA Household survey, Feb.–April, 2000, in Teller, 2001; stratified (by AEZ), random survey is representative of the wereda but not of the entire Zone or Region.

^a1994 Census in CSA, 1999.

^bFirst 3 districts located on or near the border war zone with Eritrea, 1998–2001 conflict (—=missing data).

^cDHS from CSA/ORC Macro (2001).

much higher than the average reported in the 2000 DHS. Permanent outmigration (households with a permanent out-migrant in the last 10 yrs.) was highest (12–29%) in the most densely populated districts, but seasonal migration (both male and female) in the lowest density district (40% males/17% females).

Variability in health care coverage and clean water, along with literacy and density, is also great (Teller, 2005). Two of the regions are well below the national average (16% literate), but in the other two regions, 6 of the 8 districts are above the average (the other 2 being the most isolated and least populated in the regional sample). There are large regional inequalities in health care, with Tigray districts having much higher prenatal and vaccination coverage and clean water access than the other three regional districts. The Amhara Zone A districts and Oromia Zone B districts have less than 5% DPT3 coverage. These Amhara districts in Zone A are the most sparsely populated of all 16, but not the Oromia Zone B districts. Variation in percent measles vaccination coverage is great, from the 80–90% in Tigray, to 1–7% in Zone B of Oromiya. Ever-use of modern methods of contraception was extremely low in the low density districts compared to the higher density ones.

12.3.2 The Demography of Hunger: Profiles of Vulnerable Populations in High Density and Low Density Districts

District-level population indicators related to food insecurity and child malnutrition are presented in Table 12.3. The comparison is between the high density districts in Hadiya Zone, and the low density districts in Wag Himra Zone. Looking at the food and nutrition indicators, it is obvious that low density Wag Himra is much more food aid dependent, food insecure and with extremely high levels of chronic stunting. It should be noted, however, that acute wasting during this famine year (2000) was very high in all four districts (10% being the critical trigger level for emergency interventions, as well as low current food stock availability).

In Table 12.4, we look at population-land pressure indicators and food-nutrition security across the three classical Ethiopian agro-ecological zones (AEZs are: Highland-Dega, Midland-WeinaDega, and Lowland-K’olla) within one low density and one high density district. Average land holding per household varied as expected by AEZ, with similar densities per AEZ in each wereda. Soil erosion was perceived to be very severe in the highlands, but also in the midlands in Sekota. The low density wereda had over twice the levels of perceived and actual food insecurity and malnutrition than the high density one, and the high level of seasonal migration had been reduced due to the drought in the areas of seasonal work. Within AEZs, though, the highlands of the Sekota suffered greater food and nutrition insecurity than the highlands of Hadiya. The Sekota women, in particular, are much thinner than in Hadiya (69% vs. 25%). As a zone, Sekota is much more isolated and war-affected during the 17-year insurgency against the Derg regime than Hadiya. As a zonal capital with a newly paved road, and favored by the current government for its political struggle, Sekota will likely continue growing at annual rate of 3.5% and above.

Table 12.3 Population factors and food and nutrition security indicators, by a high density and zones and districts, 2000

High/low Density and Zone-District	Population factors							% Out-migrants who left for 6> mo. due to stress-related reasons ^a
	Size (2000)	Growth rate (‘84–‘94)	Crude density	% Population affected by disaster and needing food aid (1994–1998)	% Food insecure (chronic)	% Children malnourished (–2sd stunted/wasted)		
High-Hadiya								
Badewacho	187	–	410	4.3	6	46/16	66.6	
Lemo	288	2.6%	29	5.1	86	43/13	37.5	
Low-								
Wag Himra								
Sekota	136	3.5%	48	51.9	42	74/10	94.5	
Ziquala	54	2.5%	18	61.8	41	59/13	93.4	

Sources: Teller 2001; adapted for Hadiya from Yohannes Desta et al., and for Wag Himra, from Demeke Eshetu et al., in www.dppa.gov.et/library/SERA.

^astress-related and push factors include looking for work; lack of land, better opportunities, inscription into army, “chigger” (an general Amharic word for a number of serious problems).

Table 12.4 Intra-district variations in population-land pressure, food insecurity and malnutrition indicators, by a selected high and a low density district, and by agro-ecological zone (AEZ), 2000

District and AEZ	Pop. & Agr density (pop. per km ² /pop. per km ² of arable land)	Ave. land holding/household (hectares)	Perceived severe soil erosion (% HHs)	Perceived food insecurity			Women's under-nutrition: women 15–49 with thin mid-upper arm (% MUAC <22.5 cm)
				(annually): % responded “much too small” to satisfy annual food requirement	Current Food Insecurity (“% no stocks left-post harvest season”)	Young child (3–36mo.) mal-nutrition (% stunted –2sd)	
<i>Sekota</i> (low density)	48/280		57.9	40.3	38.2	73.8	68.8
–Dega	0.65		80.0	52.4	71	93.8	70.8
–W/Dega	0.76		61.3	43.2	44	74.1	67.9
–Kolla	0.94		37.5	33.0	19	67.3	69.7
<i>Lemo</i> (high density)	364/400		44.0	32	22.0	43.1	24.4
–Dega	0.52		94.9	26	6.0	37.1	27.8
–W/Dega	0.80		34.4	37	30.3	49.7	23.5
–Kolla	0.91		26.7	37	19.3	36.6	24.3

Sources: Household survey and key informant interviews; Adapted from Yohannes Desta and Demeke Eshetu et al., Vulnerability Profiles, 2002c (www.dppa.gov.et/library/SERA), see above; N=800 HHs in Sekota, and 700 HHs in Lemo

12.3.3 Demographic Responses

One of the most important demographic responses to high density and lack of local opportunity has been found to be what might be generally called “stress” (i.e., pushed or forced) migration (Teller, 1998; DTRC and PSTC, 2000; see book chapter 9).

In the SERA sample’s most highly densely populated study region, SNNPR, the main reasons for permanent male outmigration in the last 10 years were studied.

In the most densely populated study district of the SNNPR (Lemo), it was found that 67% of the males out-migrated for stress factors (land shortage, resettlement, army recruitment, job search, health, social and personal problems, etc.). In the other three districts with descending densities, only 38, 29 and 20% were stress migrants, respectively. On the other hand, in the more drought-prone and poorer study districts in Amhara Region’s Wag Himra Zone, 94% of those who out-migrated (for non-family reasons) did so for stress reasons.

In writing their vulnerability profiles reflecting on the data in Table 12.4, the local researchers from Sekota district, Wag Himra Zone, comment on their data:

“Nowadays, food production and population growth have ceased to keep in balance . . . It is not the pressure exerted on land resources due to growth of population that is increasing, rather it is the size and quality of cultivable areas that is decreasing and deteriorating, thereby decreasing the returns from the land. . . Agricultural density has grown to 280 persons per square kilometer in 2000”. (DPPC (2002c) Vulnerability Profile, Sekota Wereda, November, 2001, Chapter 8.3.1).

The researchers from Lemo district, Hadiya Zone, comment that land is the scarcest resource throughout the district, but most scarce in the highland and next in the midland. However, the latter two areas’ carrying capacity is better than the lowland, since a wide variety of crops grow there.

“As a result of this population pressure, land resources are highly depleted. All sources agree that about 88% of the total land is already cultivated, and practices such as land fallow are almost impossible due to shortage of land. Similarly, area of land with natural forest is almost nonexistent at present. Rather, every field is invaded by eucalyptus. Due to repeated cultivation, soils are exposed to both visible erosion and invisible erosion” (DPPC/SERA, Vulnerability Profile, Lemo Wereda, September, 2001, Chapter 8.1).

12.3.4 Demographic Profiles of Highly Vulnerable Groups

The qualitative data help to elucidate the context and process by which some communities and household are more resilient and others more vulnerable (see Ali, 2001; SERA district profiles (DPPC, 2002c), and Ali, 2008):

The data sources for Table 12.5 are the qualitative key informant interviews (10–15 male and female adult and youth leaders per community) and a one focus group of traditional community leaders (non-government) per community (e.g., “geberemahaber”). Factors associated with highly vulnerable and less resilient households were grouped by asset depletion, and by socio-demographic stress. Communities and households in both low density and high density often suffer from similar social and economic deprivation. One difference, however, is that the low density community households are more vulnerable from poor access to markets and essential services (health education, veterinary, credit, etc.), higher agricultural and livestock dependency, and larger families with low skill base.

Table 12.5 Characteristics of highly vulnerable households in low and high density districts

Highly vulnerable households (agro/economic and socio-demographic factors)	Low density	High density
<i>Poor asset base</i>		
Landless (or less than $\frac{1}{4}$ hectare)	–	X
Oxen less (w/o sharing mechanisms)	X	X
Poor access to market and vital services	X	
Dependent only on agriculture	X	
Very small plot (of famine food)	–	X
<i>Socio-demographic stress</i>		
New formed household (inadequate adult labor)	X	X
Old age head of household (w/disabilities)	–	X
Large family size (with >4 children under 10)	X	
Female-headed households (which lack farm labor)	X	X

Source: Key informant interviews and focus groups, SERA project, DPPC (2002c)

There is a difference between the high density areas in the north-central part of the Southern region and those in Eastern Oromia. The Hadiya and Wellaita zones of the South have a traditional drought-resilient root crop (enset), tree-farming (eucalyptus), greater literacy and easier access to off-farm employment and daily early evening (“gullet”) road-side markets. While the Hararghe zones of Eastern Oromia rely on khat as a cash crop and sorghum as their drought-resilient crop, with less off-farm opportunities, proximity to unstable Somalia, and weaker institutional and local capacities.

12.3.5 Improve Resilience to Drought

On the other hand, the study also hypothesized that resiliency and local capacity can buffer these communities from the shocks of drought, erosion and political,

Table 12.6 Factors of resiliency and local capacity in high and low density districts

Resiliency factors/local capacity	Higher density (Lemo)	Lower density (Sekota)
Service centers nearer to the villages	X	–
Institutional capacity and infrastructure	X	–
Off-farm petty trade and daily labor	X	X
Early famine warning	X	X
Seasonal outmigration	X	X
Relief/rehab programs	X	X
Small irrigation schemes	–	X

Source: Reports from Yohannes Desta, Lemo; Demeke Eshetu, Sekota; and Ali Hassan, DPPC, (2002c).

agricultural and economic policies. Table 12.6 shows that while these factors are present in most communities, the low density districts tend to have less access to market and service centers, and less availability to the institutional capacity that facilitates improved agricultural and livestock development, modernization (electricity, quality schools and communications) and economic diversification. While the government's Early Famine Warning System functions well in the low density districts, the response in terms of relief and emergency food and health programs tends to be more delayed.

12.3.6 Multilevel and Multivariate of the Demographic and Other Factors Related to Vulnerability to Food Insecurity and Chronic Malnutrition

The univariate analysis in Table 12.7 shows that the highest prevalence of chronic food insecurity (i.e. over the past 10 years) are found in landless households (62%), followed by female-headed households (54%) and in high-drought-risk districts (53%).

We look at the five levels of factors related to stunting (Table 12.8). The greatest differentials are with the drought risk indicator (satellite-generated vegetation coefficients): 61% are stunted in communities with high drought risk, versus 46% with low risk. Also high levels are found in female-headed and landless households, as well as those living in lowland areas and with un-piped water.

In Table 12.9, multivariate analysis is employed at the household, community and district levels to control for the many factors in the comprehensive conceptual framework. In the table above, odds ratios on both current and chronic food insecurity and for acute (wasting) and chronic (stunting) childhood malnutrition are presented at the .05 level. For current food shortage during the 2000 famine year (i.e. food stocks lasting under 3 months), land, oxen, female-headed households had a significantly greater likelihood of being food insecure, as well as communities located far from the district capital. The most significant co-variate is the percentage of the population assessed annually by the Early Warning System of the Ethiopian Government to be food aid needy. It is important to note that the low population density populations

Table 12.7 Multi-level factors related to chronic household food insecurity

Factors	Indicators	% Food insecure
Individual	<i>Sex head of household</i>	
	Male	40
	Female	54
Household	<i>Land use</i>	
	Has land	42
	None	62
Community	<i>Distance from wereda capital</i>	
	Near	34
	Far	50
Sub-District	<i>Agro ecology</i>	
	High-midland	40
	Lowland	50
District	<i>Drought risk</i>	
	Medium	42
	High	53
Average		43

Table 12.8 Multi-level factors related to chronic child malnutrition

Factors	Indicators	% Stunted
Individual	<i>Sex head of household</i>	
	Male	54
	Female	58
Household	<i>Land use</i>	
	Has Land	54
	None	58
Community	<i>Water quality</i>	
	Piped	52
	Unpipied	56
Sub-District	<i>Agro ecology</i>	
	Highland	51
	Lowland	56
District	<i>Drought risk</i>	
	Low	46
	High	61
	<i>Density</i>	
	Low	58
	High	46

are more vulnerable to current insecurity. Looking at chronic stunting (last column), the direction of the signs is the same, except for the density variable, where the (high density highland) communities are more chronically vulnerable (in all probability,

Table 12.9 Logistic regression model on current and chronic food insecurity and childhood malnutrition (odds ratios at $p = < .05$)

Covariates	Indicator	Household food insecurity		Childhood malnutrition	
		Current (3 months)	Chronic (10 yrs)	Wasting (acute)	Stunting (chronic)
Household	Land owned	0.41	0.38	0.82	Ns
	Oxen owned	0.40	0.45	Ns	Ns
	Female headed	0.52	0.57	Ns	Ns
	Literacy of head	Ns	0.79	0.81	.86
Community	Distance to town	1.37	1.70	0.82	Ns
	Protected water	Ns	0.79	Ns	Ns
District	% Food aid needy	0.04	0.23	0.74	1.50
	Drought risk (veg.)	0.47	0.60	Ns	0.45
	High Pop. density	0.64	1.59	Ns	Ns

Ns=not significant

the Belg and/or short rain dependent areas). On the other hand, large family size was NOT found to be significant for either current or chronic food insecurity (data not shown here). Concerning the odds ratios on wasting and stunting, drought risk (satellite-generated vegetation density coefficients) was very important for stunting, and percent food aid needy for wasting. The crude density indicator was not significant for either wasting or stunting.

12.4 Discussion – Zonal, District and Local Vulnerability: Response and Capacities

Now, let us return to the initial holistic issues posited earlier:

1. Neither Malthusian nor Boserupian effects:

There seems to be no direct causal relationship between crude population-land pressure and food and nutrition insecurity. The effect of population density is contextual, technological, organizational and ecological; only one of the four major regions in taking the population pressure problem seriously (Southern).

2. Large *inter-district and agro-ecological variation* in different types and timing of vulnerability makes it difficult to generalize and establish criteria for targeting of more effective famine prevention programs. The Belg-dependent areas seem to be suffering more often now than the traditionally vulnerable lowland areas.
3. The most important *assets for household resilience* to drought shock continue to be access to arable land, draft animals and adult labor.

Rapid Population Growth as Both Negative and Positive

(“Man is a medicine for man”):

Participants of Community “Awaki” Discussions (CADs) held at all SERA project sample peasant associations (PA) have reported that the respective communities perceived the rapid increases in population size as not so good for the development of community and family welfare, except in Mololicho PA.

At Mololicho, the CAD participants have reported that, even though the community has identified the negative impacts that rapid population growth had exerted in them, they still claim that the increase in population situation as an asset, saying that “*man is a medicine for man*”. This may indicate that they do not want to exercise any sort of population control mechanisms, even if they get an access to such a service.

(from Lemo Wereda, Hadiya Zone, Southern Region, SERA Project, DPPC, 2002c)

The initial descriptive findings suggest that chronic food insecurity and chronic and acute malnutrition were major problems in these 16 districts over the 10-year period (1991–2000), but their magnitude differed by district, agro-ecological zone, community and household. Crude population growth and density were not consistently associated with hunger or malnutrition, but environmental degradation, land shrinkage, land and cattle pressure and family composition factors were associated.

Community Elders Quotes on Land Shortage and Family Size:

“Land that has been cultivated by one farmer before 10 years was now cultivated by six farmers” (Community elders from Goddima Sost Wark).

“In the past, a farmer with small family size (4 members) cultivates about 8 hectares, but now farmers with large family size (11 members) cultivates 2 hectares” (Community elders from Addis Alem Yayyu)

(from Derra Wereda, Northwest Shewa Zone, Oromiya Region, SERA project, DPPC (2002c))

However, even given these high vulnerability factors, the study weredas in Tigray showed better resilience higher health and nutrition status, lower mortality and better

access to agricultural, education and health services. Thus the political, institutional commitment and organizational factors make a difference, even in the face of a war zone on their border with Eritrea during the time of the study.

Qualitative, participatory research on local capacity included suggestions of interventions to reduce vulnerability at the following three levels.

At household level: Diversification of agricultural activities; off-farm activities; migration; small scale irrigation; drought-resistant crops; working long hours; practicing family planning; developing a savings culture/habit and reducing extra expenses or avoiding extravagancy; oxen sharing; growing early maturing crops.

At community/organizational level: participation in traditional welfare and savings societies; tree planting and harvesting and afforestation; livestock disease prevention; organizing for collective action; users association for river diversion.

At institutional level: participation in agricultural and credit services; modern land management schemes; water and soil conservation; clean water; constructing water dams and water harvesting; capacity-building, education and awareness creation on important issues; food for work employment.

12.5 Conclusions and Policy Implications: Demographic Dimensions of Food Security and Nutrition Policies and Programs

12.5.1 Summary and Conclusion

The chapter, as a result of decentralized, participatory research, has confirmed the Bilsborrow/Carr (2001) conclusion that neither the neo-Malthusian nor the Boserupian theories are sufficient to explain complex interrelationships. Moreover, that studies of the population-environment-land-agriculture nexus and their development consequences should be done at the local level with an emphasis on contextual factors (while keeping in mind the macro political and economic factors). There is a great deal of agro-ecological variation within Ethiopia in food security (Schmidt and Dorosh, 2009) and vulnerability to persistent household food insecurity and chronic malnutrition that makes it difficult to do administrative targeting broadly. However, there are a few consistent vulnerability factors at household level: scarce assets (fertile land and oxen); poorly skilled and illiterate adult labor, and inadequate non-farm employment.

The Ethiopian multisectoral experts knew that in their development of National Guidelines for the Vulnerability Profile Development (DPPC, 1999), there would have needed to be a lot of both quantitative and qualitative data collected, as well as analyzed, interpreted and used at the regional and local levels in a timely manner. However, the existing secondary data were often not of good enough quality to analyze the trends at local level. Thus the need to collect much primary data within each district, stratified by agro-ecological level.

Population-land pressures and agricultural densities can be either impediments or promoters of development. With the lack of adequate technological, educational and organizational development, the Boserupian optimism of intensification is hard to be realized in modern day Ethiopia (except may be in less-drought-prone districts close to Addis Ababa) (Temesgan, 2008). Moreover, the main demographic response to high rural density in these very poor districts is often not fertility reduction, but off-farm employment, circular, seasonal and outmigration to both rural and small urban areas. However, as a result of ethnic-based regionalization, there are restrictive policies on the rational mobility of labor between ethnic-based regions, so this main demographic response has been minimized (Dessalegn, 2009). Only the renewed policy of incentives for rural resettlement in the more tropical and fragile areas of the West and Southwest are potential escape values. Other research has shown that internal migration in Ethiopia is a positive response mechanism for human and economic development (DTRC/PSTC, 2000; see [Chapters 8 and 9](#)).

Concerning other demographic responses to hazards and vulnerability, Tacoli (2007) writes about the importance of population movement:

“Migration is an adaptive response to changes in people’s circumstances. Yet environmental factors are not the whole story. Socio-economic, political and cultural factors are also closely linked to population movement, and heavily influence vulnerability to both direct and indirect impacts of climate change. Shifts in migration patterns are a strategy of adaptation to complex transformations, and recognizing and accommodating this is key in policies for sustainable development and poverty reduction in the context of growing environmental stress” (p. 2).

This chapter just begins to scratch the surface in a very rich data set that will eventually be written up in a book form. It also calls for revisits to these same districts after the past 10 years in which a record number of Ethiopians (between 13 and 15 million) have become chronically vulnerable to food insecurity (MoARD, 2010; FEWSNET, 2009, 2010).

12.5.2 Recent Policy Implications

Bilsborrow and Carr (2001) write that successful policies on the population-agriculture nexus will be challenging, but include technical assistance in agriculture, credit, conservation, road-building and health and family planning services. In an optimistic vein, a major demographic report by the World Bank (2007) concluded that while high population growth put initially a burden on economic growth and poverty reduction, “it also generates favorable conditions for accelerated economic growth later on” (p. iii). While it is not the purpose of this chapter to debate this potential demographic bonus or dividend (see [chapter 4](#)), in the specific Ethiopian context at this time, there are a number of important population, food/nutrition security and development-related policies being addressed to meet the preconditions for a dividend:

1. The new National Plan of Action for the Population Policy of Ethiopia (2009/2010–2015/2016),
2. The new Growth and Transformation Plan 2010–11 to 2014–15, and the enhanced Productive Safety Net Program (PSNP),
3. The new Disaster Risk Reduction and Management Policy and Strategy (MoARD, 2010),
4. The new Health Sector Development Program IV (MOH, 2010) and
5. The secondary and post-secondary education expansion strategies.

The fight against poverty and food insecurity in Ethiopia is certainly a multi-pronged and long-term effort. In his thorough research on destitution in the North-east Highlands of Ethiopia (including some of the SERA profile sites), Yared Amare (2003) suggests a demographic strategy among his three other vital strategies (anti-drought/famine, agricultural productivity and income diversification). His strategy includes labor migration, careful resettlement, small and large urban center development, family planning and reduction of early age of marriage:

“Increasing poverty is to some extent a function of growing population, which has resulted in diminishing farm sizes and associated resource degradation. A sustainable strategy aimed at poverty reduction in the North-Eastern highlands there, needs to reduce the person/land ratio by facilitating population movement from the region into other locations and economic sectors. One of the ways this can be attained is by expanding the scope for *short and long-term labor migration* by promoting the growth of commercial farms and surplus producing farms in favorable regions. The institution of permanent land-rights will be indispensable in promoting the mobility of rural people by reducing the need to remain tied to their landholdings in order to retain access to them” (pp. 28–29).

In sum, the DPPC/SERA combination of academic, applied and decentralized, participatory research and capacity-building has suggested the importance of taking into account demographic factors in poverty reduction, famine prevention and health policies and programs at national, regional and district levels. After the vulnerability profiles and in-depth research dissemination were completed in the project, famine reduction response packages were drawn up in a participatory way in some of the districts, but few were implemented. Instead, Food Economy Assessments and Livelihood Zones were established in most regions to predict the effects of hazards on household livelihood assets (DPPA, 2007). Currently, under the recent national Disaster Risk Management Policy (2010), the government’s Disaster Management and Food Security Strategy (DM/FSS/MOARD, 2010) has reactivated the need for Wereda Profiling (MoARD and WFP, 2010), and is including population dimensions such as urbanization, rural resettlement, water diversion and land reform, child survival, health extension and family planning.

References

- Adamo, S. (2009). Climate Change–Population Interactions: A Spatial and Regional Perspective. IUSSP, Morocco, October.
- Alemtsehay Aberra. (2001). Coping Strategies and Household Structure in Tigray Region. Masters Thesis, Demographic Training and Research Center (DTRC), AAU, June.
- Ali Hassan. (2001). *Vulnerability to Famine, Local Capacity and Suggested Interventions by District*. Addis Ababa, SERA Project, DPPC, December.
- Ali Hassan. (2008). *Vulnerability to Drought Risk and Famine: Local Responses and External Interventions Among the Afar of Ethiopia: A Study on the Aghini Pastoral Community*. Bayreuth, University of Bayreuth, January.
- Alwang, J., Siegel, P., and Jorgensen, S. (2001). Vulnerability: A View from Different Disciplines. Paper Prepared for the World Bank, Washington, DC, May.
- Anderson, M. and Woodrow, P. (1998). *Rising from the Ashes: Development Strategies in Times of Disaster*. Boulder, CO, Lynn Rienner Publishers.
- Assefa Hailemariam. (1994). *Population Dynamics and Their Underlying Implications for Development in Ethiopia, in MoFED*. Addis Ababa, Integrating Population and Development Planning, May.
- Belay Tegene. (1996). Population Pressure and Problems of Arable Land Degradation in Ethiopia, In Aklilu Kidanu. (ed.), *Integration of Population, Environment, Equitable and Sustainable Development*. Addis Ababa, Addis Ababa University, UNFPA.
- Berhanu Nega. (2005). “Ethiopia’s Fate after One Generation”, Addis Ababa Vision 2020 Ethiopia, May.
- Biellil, C.G., Berhanu Gebre-Medhin, Amare Isayas, and Ariana, O. (2001). *Population Growth and Environment in Ethiopia*. Italy and Addis Ababa, Institute for Population Research, Italian National Council for Research, October.
- Bilsborrow, R. (1987). Population Pressures and Agricultural Development in Developing Countries: A Conceptual Framework and Recent Evidence”. *World Development* 15(2).
- Bilsborrow, R. and Carr, D. (2001). Population, Agricultural Land Use and Environment in Developing Countries. In Lee, D.R. and Barrett, C.B. (ed.), *Tradeoffs or Synergies? Agricultural Intensification, Economic Development and the Environment*. New York, NY, CABI Publishing. pp. 35–55.
- Boserup, E. (1965). *The Conditions of Agricultural Growth*, New York: AldineY
- MESSAES:Reardon, P., 1998. Population and Sustainability: Understanding Population, Environment and Development Linkages, In D’Souza, G. and Gebremedhin, G. (eds.), *Sustainability in Agriculture and Rural Development*. Aldershot, Ashgate.
- Central Statistical Agency (CSA). (2010). The 2007 Population and Housing Census of Ethiopia: Summary and Statistical Report, Office of Population Census Commission, Addis Ababa, July.
- Central Statistical Agency (CSA) and ORC Macro. (2001). Ethiopia Demographic and Health Survey, 2000. Maryland, Addis Ababa and Maryland.
- Central Statistical Agency (CSA) and ORC Macro. (2006). Ethiopia Demographic and Health Survey, 2005. Addis Ababa and Calverton, MD.
- Central Statistical Authority (CSA). (1999). The 1994 Population and Housing Census of Ethiopia: Results at Country Level, Volume II. Analytical Report, Addis Ababa, Ethiopia.
- Daniel Assefa. (2003). *Family Planning Services: An Important Front in the Battle Against Poverty in Ethiopia*. Addis Ababa, Ethiopian Economic Association.
- de Sherbinin, A.L., Van Wey, K., McSweeney, R., Aggarwal, A., Barbieri, S., Henry, L., Hunger, W.T., and Walker, R. (2007). “Rural Household Demographics, Livelihoods and the Environment”. *Global Environmental Change*, doi:10.1016. www.elsevier.com/locate/gloenvcha
- Dessalegn Rhamato. (1992). The Dynamics of Rural Poverty: Case Studies from a District in Southern Ethiopia, CODESRIA Monograph Series 2/92, Dakar.
- Dessalegn Rhamato. (2007). Development Interventions in Wollaita, 1960s–2000s. A Critical Review. Forum for Social Studies Monograph No. 4, Addis Ababa.

- Dessalegn Rhamato. (2009). *The Peasant and the State Studies in Agrarian Change in Ethiopia, 1950s–2000s*. Addis Ababa, Addis Ababa University Press.
- Devereux, S., Sharp, K., and Yared Amare (2002). *Destitution in the Northeastern Highlands (Amhara Region): Interim Report*. Brighton: IDS Sussex and Addis Ababa, Save the Children (UK), Ethiopia.
- Downing, T. (1991) *Vulnerability Assessments, Famine Early Warning System*, USAID, Washington, DC
- Disaster Management/Food Security Sector/Ministry of Agriculture and Rural Development (DM/FSS/MoARD). (2009). *Joint Government and Humanitarian Partners, Humanitarian Requirements*, Addis Ababa.
- Disaster Prevention and Preparedness Commission (DPPC). (1999). *National Guidelines for Vulnerability Profile Development*, SERA Project, August.
- Disaster Prevention and Preparedness Commission (DPPC). (2002). *Vulnerability Profiles for Each of the 16 Drought-Prone Weredas*. www.dppc.et.gov/SERA
- Disaster Prevention and Preparedness Commission (DPPC). (2002a). *Proceedings of the National Selected Weredas' Vulnerability Profiles Dissemination Seminar*, Addis Ababa, Feb. 12–13.
- Disaster Prevention and Preparedness Commission (DPPC). (2002b). *Background and Summary Highlights of 16 Selected Drought-Prone Wereda Vulnerability Profiles*, Addis Ababa, March.
- Disaster Prevention and Preparedness Commission (DPPC). (2002c). *District Vulnerability Profiles*. www.dppc.gov.et/gsd/collect/dppalibr/import/DPPA digital library docs/Sera project/
- Disaster Prevention and Protection Agency (DPPA). (2007). *The Livelihoods Integration Unit*. www.dppa.et.gov/LIU.
- Demographic Training and Research Center and Population Studies and Training Center (DTRC/PSTC). (1998). *Community and Family Health Survey, 1997*. Demographic Training and Research Center. Providence, RI, Addis Ababa and Population Studies and Training Center, Brown U.
- Demographic Training and Research Center and Population Studies and Training Center (DTRC/PSTC). (2000). *Migration, Gender, Health and Development*. Providence, RI, Addis Ababa University and Brown University. October.
- Ethiopian Economic Association. (EEA). (2007). *Population Growth and Economic Development*. FEWSNET/Ethiopia. (2009–2010). *Ethiopia Food Security Update, Famine Early Warning System Network, USAID, Addis Ababa* (monthly bulletins: www.fewsnet/ethiopia)
- Ferris-Morris, M. (2002). *Planning for the Next Drought: Ethiopia Case Study: An Assessment of the Drought Response 1999–2001 and Current Preparedness*. Washington, DC, USAID, Washington.
- Frankenberger, T., Sutter, P., Amdissa Teshome, Alemtsehay Aberra, Mulugeta Tefera, Moges Tefera, Alemayehu Seyoum, Bernard, T., Spangler, T., and Yeshewamebrat Ejigesemahu. (2007). *Ethiopia: The Path to Self-Resiliency (4 Volumes)*; CHF-Partner in Rural Development; Canadian Network of NGOs in Ethiopia, Addis Ababa, July.
- Haghebaert, B. (2001). *Vulnerability at the Household Level: Development of an Access to Safety: Model*. International Work-Conference on Vulnerability in Disaster Theory and Practice, Wageningen, June.
- International Strategy for Disaster Reduction (ISDR/UN). (2002). *Living with Risk: A global Review of Disaster Reduction Initiatives*, UN: Interagency Secretariat, July.
- International Strategy for Disaster Risk (ISDR). (2005). *Words Into Action: A Guide for Implementing the Hyogo Framework. Building the Resilience of National and Communities to Disasters*, UN: Interagency Secretariat.
- Joy, L. and Payne, P. (1976). *Nutrition and National Development Planning*.
- Lautze, S., Aklilu, Y., Ravens-Roberts, A., Young, H., and Kebede, G. (2003). *Risk and Vulnerability in Ethiopia, 2003: Learning from the Past, Responding to the Present, Preparing for the Future*. Tufts University and USAID/Ethiopia, June.
- Little, P., Stone, M.P., Tewodaj, M., Castro, P., and Workeneh, N. (2006). *Moving in Place: Drought and Poverty Dynamics in South Wello, Ethiopia*, *Journal of Development Studies* 42(2).

- Lutz, W. and Scherbov, S. (2001). Population, Environment, Development, Agriculture Model (PEDA), Technical Manual, UNECA, Addis Ababa, May.
- Marchione, T. and Novick, P. (2003). Decreasing Vulnerability: Building a Resilient Safety Net, Paper Prepared for the Famine Prevention Strategy Framework for Ethiopia, USAID, November.
- Markos Ezra. (1997). *Demographic Responses to Ecological Degradation and Food Insecurity: Drought Prone Areas in Northern Ethiopia*. Amsterdam, PDOD Publications.
- Markos Ezra and Gebre-Egziabher Kiros. (2000). Household Vulnerability to Food Crisis and Mortality in the Drought-Prone Areas of Northern Ethiopia. *Journal Bioscience* 32: 395–409.
- Mesfin Wolde-Mariam. (1986). *Rural Vulnerability to Famine in Ethiopia, 1958–1977*. London, Intermediate Technology Publications.
- Ministry of Agriculture and Rural Development (MoARD). (2010). Enhancing Disaster Risk Management of Reducing the Impact of Climate Change, National Conference on Disaster Risk Management, UN Conference Center, Jan 21–22.
- Pankhurst, A. and Bevan, P. (2004). “Hunger, Poverty and Famine in Ethiopia: Some Evidence from Twenty Rural Sites in Amhara, Tigray, Oromiya and SNNP Regions”. Draft, Addis Ababa
- Pender, J. (1998). Population Growth, Agricultural Intensification, Induced Innovation and Natural Resources Sustainability: An Application of Neoclassical Theory. *Agricultural Economics* 19: 99–112.
- Pender, J. (2001). Population, Agriculture and Natural Resources, In Birdsall, N., et al. (eds.), *Population Growth and Economic Development*. Washington, DC, National Academy of Sciences.
- Pender, J. and Berhanu Gebre-Medhin. (2004). Land Management, Crop Production and Household Income in the Highlands of Tigray, Northern Ethiopia, IFPRI/ILRI.
- Population Action International. (2009). Linking Population, Fertility and Family Planning with Adaptation to Climate Change: Views from Ethiopia, K. Hardee, K. Rovin and Aklilu Kidane, Washington, DC, October.
- Riley, B. et al. (2002). *The Impact of Title II Food Aid on Food Security in Ethiopia*. Washington, DC, USAID, April.
- Schmidt, E. and Dorosh, P. (2009). A sub-national Hunger Index for Ethiopia: Assess Progress in Region-level Outcomes, ESSP-II discussion paper 5, Addis Ababa, IFPRI/ESDI, October (www.ifpri/Ethiopia).
- Sen, A. (1981). *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford, Clarendon Press.
- Sharp, K. and Devereux, S. (2004). Destitution in Wollo, Ethiopia: Chronic Poverty as a Crisis of Household and Community Livelihoods. *Journal of Human Development* 5: 2 July.
- Shawel Consultant-International. (1993). Vulnerability Profile in Famine Prone Areas of Ethiopia: an In-depth Study of Five Awrajas, Final Report, RRC, Addis Ababa.
- Tacoli, C. (2007) Migration and Adaptation to Climate Change, Sustainable Development Opinion, International Institute for Environment and Development.
- Teller, C. (1996). Population Dynamics and the Environment in Ethiopia. Paper Presented at a Workshop on Population and the Environment, National Office of Population, Addis Ababa,
- Teller, C. (1997). Population Pressure and Vulnerability: Research Issues in Developing a Vulnerability Profile of High Density Zones/Weredas of the Southern Region, Ethiopia. Paper Presented at a Conference on Vulnerability in Ethiopia: from Disaster to Development, DPPC, June, Addis Ababa.
- Teller, C. (1998). The Community Context of Migration in Ethiopia: Structural, Institutional and Cultural Factors, with Examples from Densely Population Zones of the Southern Regions. Paper Present at a Workshop on Migration, Health, Gender and Development, Addis Ababa University, Addis Ababa, March.
- Teller, C. (2001). Vulnerability Profile Development: Decentralized, Applied Research on Vulnerability to Disaster in DPPC. Paper Presented at National Vulnerability Profile Training Workshop, Addis Ababa, March.

- Teller, C. (2005). The Demography of Hunger: Case Studies in Population/Land Pressure in Vulnerability to Food/Nutrition Insecurity in Ethiopia. Paper Presented at the IUSSP Conference, Tours, France, July.
- Teller, C. (2007). The Delayed Rural Fertility Transition in East African Countries: Population/Land Pressure and Food/Nutrition Insecurity, 1999–2006. Paper Presented at the Population/Health/Environment Conference, Population Reference Bureau and CIPHE, Addis Ababa, November.
- Teller, C. (2010a). Demographic and Socio-Ecological Dimensions of Vulnerability, Capacity and Response in Africa: Strengthening Multidisciplinary Analytical Capacity in Disaster Risk Reduction in Ethiopia, Paper presented to the Conference on Disaster Risk Science and Sustainable Development in Africa, Bahr Dar, Ethiopia, January.
- Teller, C., Assefa Hailemariam, and Tesfayi Gebreselassie. (2010b). “Revising the Demographic Transition Model for the Volatile Horn of Africa” Demographic Vulnerability and Response to Hazards in Ethiopia, Paper Presented at the PAA Meetings, Dallas, TX, April.
- Teller, C., Assefa Hailemariam, Tesfayi Gebreselassie, and Ali Hassan. (2009). Do Population Dynamics Affect Food/Nutrition Security and Mortality? A Delicate Balance of Vulnerability and Resilience in Ethiopia. Paper Presented at the IUSSP, Morocco, October.
- Temesgen Deressa, Hassan, R., and Ringler, C. (2008). Measuring Ethiopian Farmers Vulnerability to Climate Change Across Regional States. IFPRI Discussion Paper 00806, October.
- Tiffen, M. and Mortimore, M. (1994). Land Resources Management in Machakos District, Kenya 1930–1990. World Bank Environment Paper 5, World Bank, Washington, DC.
- Turner, B.L., Hayden, G., and Kates, R. (1993). *Population Growth and Agricultural Change in Africa*. Gainesville, FL, University Press of Florida.
- USAID/Ethiopia. (2004). Reducing Famine Vulnerability, Hunger and Poverty. Institutional Strategic Plan 2004–2008, United States Agency for International Development, Addis Ababa, March
- Webb, P., von Braun, J., and Yisehac Yohannes. (1992) Famine in Ethiopia: Policy Implications of Coping Failure at National and Household levels. Research Report No. 92, Institute for Food Policy Research Institute (IFPRI) Washington, DC.
- Yared Amare. (2003). Destitution in the North-Eastern Highlands of Ethiopia: Community and Household Studies in Wag Hamra and South Wello. Forum for Social Studies, No. 3, Addis Ababa, August.
- World Bank. (2007). Ethiopia: Capturing the Demographic Bonus in Ethiopia: Gender, Development and Demographic Actions, Washington, DC., June.

Chapter 13

Household Demographics, Assets, and Sustainable Rural Livelihoods: A Case Study from Rain-Endowed South Western Ethiopia

Dula Etana

Abstract The study examines the changes in household demographics and access to livelihood assets, and their effects on livelihood sustainability in one of the rain-endowed districts in South West Ethiopia. A binary logistic regression model is used to analyze the relative effect of the predictor variables on sustainable livelihoods based on data obtained from 390 randomly selected households. The results show that the likelihood of sustaining a livelihood is low for households headed by the young and the old, and by females. Low literacy levels, decreased livestock holding, lack of access to credit, absence of saving, and low social capital are also found to significantly reduce livelihood sustainability. The effort to sustain livelihoods and reduce vulnerability is, thus, based on the life cycle of households and the corresponding change in their livelihood assets. This implies the importance of life cycle stages of households, differential access to livelihood assets, and their repercussion on environment and livelihoods, in order to design interventions that enhance livelihood sustainability.

Keywords Sustainable livelihoods · Assets · Households · Life cycle

13.1 Introduction

The growth of population size at the expense of the natural environment (UN, 2001) has been one of the factors involved in the emergence of the concept of sustainable development. This term means a process of development that meets the needs of the present generation without compromising the ability of the future generation to meet its own needs (WCED, 1987). It entails the fulfillment of livelihood needs without adversely affecting the natural resource base on which livelihood

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depends. Subsequent international conferences also mainstreamed the importance of integrating population and development planning into environmental protection as a means to achieve sustainable development.

Environmental degradation is one of the challenges in fighting poverty and sustaining development in Ethiopia (MoFED, 2006). Although the country is endowed with multiple natural resources, it is increasingly under threat (Ayalneh, 2002; Patterson, 2007). Land degradation is among the main environmental problems of the country. According to UNECA (2002), Ethiopia loses 1.9 billion tones of top soil each year from its highlands. This, together with high rate of deforestation, impairs the capacity of the land to contribute to household food security and rural livelihoods (Badege, 2001; Ayalneh, 2002). This problem of environmental degradation is particularly pervasive in rural areas of the country (Getachew and Demele, 2001) where the majority of the country's population lives, being dependent on agriculture.

Given the reliance of the rural population on environmental resources for its survival, the pervasive degradation of the environment has adverse impact on achieving sustainable development in general and sustaining the livelihoods of the populace in particular. As indicated by Mulunesh (2001), rural people could not maintain their livelihoods due mainly to the deterioration of natural resources. To put the challenge more starkly, "Ethiopia is confronted with the dilemma of producing enough food for its rapidly growing population on the one hand, and protecting the resource base upon which food production depends on the other" (Melaku, 2001: 10).

Despite the recent decline trend of the population growth rate in Ethiopia, the size of the population continues to increase. In order to address the problem, the country enacted its population policy in 1993 with the overriding objective of harmonizing the relationship between population and environment. Besides, creating the balance between population growth and economic development is one of the eight pillars of the country's Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (MoFED, 2006). The quantitative target of the population aspect of the plan is increasing contraceptive prevalence rate from 15% in 2004/2005 to 44% in 2009/2010 as a means of reducing fertility, and reducing infant mortality rate from 77 per 1,000 populations to 45 per 1,000 populations during the same period.

Although environmental degradation, and thus livelihood challenges, is the result of a multitude of factors, demographic variables are found to be one of them (Seyoum, 1996; Ermias, 2003). It results in declining per capita assets (Masfield, 2001), landlessness, unemployment and underemployment, abandonment of traditional resource conservation practices (eg. fallowing, crop rotation practice), and expansion of farm land into marginal areas and natural forests (Tesfaye, 2003). In addition to the declining trend of land holding, the severity of land degradation due to population pressure and other institutional problems also aggravate the livelihood challenges of rural households.

In the light of worsening environmental degradation, increasing population size and the consequent problems of sustaining livelihoods, this chapter explores the household level changes of demographic characteristics, access to livelihood assets, and their effect on sustainable rural livelihoods.

13.2 Background: Theoretical and Empirical Review

The theoretical explanation of the interaction between human population and their environment in the pursuit of livelihoods has been an area of contention for a long time with divergent empirical findings. The pessimists emphasized the negative impact of population growth on productive capabilities of environmental resources, particularly land and thereby unsustainable livelihoods (Meadows et al., 1972; Ehrlich and Ehrlich, 1990; Marquette, 1997). On the other hand, the optimists put emphasis on population-growth-induced technological innovation and the positive effect on sustainable livelihoods through agricultural intensification (Boserup, 1965). For the revisionists, however, the impact of population growth is neutral (Blanchet, 1991). According to them the role of population growth in promoting or hindering economic development and environmental protection varies across countries on the one hand, and needs to be placed with several other factors of equal or greater importance on the other (National Research Council, 1986; Kelley, 2001). Thus, there is no strong empirical evidence on the impact of population growth, and the literature shows different and contradicting results (Kelley, 2001).

Most of the research related to the linkage between population and environment underpinning the aforementioned theoretical orientations are made at macro level, based on population size, growth, and density (Perz, 2002). Nevertheless, the micro level analysis of the linkage is crucial, as households play vital role in natural resource use and landscape change; and understanding this linkage is important for appropriate policy intervention (de Sherbinin et al., 2008). One of the theories that explain the relationship between household demographics and environment is the Chayanovian model of household life cycle (Chayanov, 1926 cited in Malmberg and Tsegaye, 2006; Perz, 2002). The life cycle of households begins when newly married couples establish household and ends when the founding couples no longer make livelihood decisions (de Sherbinin et al., 2008). The demographic characteristics of households at different stages of the life cycle change, the authors argue, due to fertility, mortality, and migration, which in turn change the age and sex composition of households, dependency ratio, labor availability, and household assets. These lifecycle dynamics influence the livelihood condition of households (Valdivia and Quiroz, 2001). The pattern of interaction between household demographics and their environment to sustain livelihood is multiple and complex, being mediated by livelihood assets. Malmberg and Tsegaye (2006), in their study in South Central Ethiopia using the Chayanovian based household life course approach, document the importance of the demographic characteristics of households and their access to livelihood assets to sustain livelihoods.

In this chapter, the relationship between demographic dynamics and access to livelihood assets is examined using the sustainable livelihoods framework (SLF). SLF analyzes how, in a particular context, livelihood resources are combined and transferred into desired livelihood outcome(s) using certain livelihood strategy (ies) (Scoones, 1998). Livelihood outcomes are outputs derived from the available livelihood assets which include more income, increased well-being, reduced vulnerability, and more sustainable use of natural resources. Livelihood assets are

ranges of resources (land, skill, health, credit, saving, infrastructure, social relations) that people utilize to achieve the desired livelihood outcomes (Bebbington, 1999; DFID, 2000). Besides, livelihood outcome is the function of the dynamics of demographic variables as they determine access to the assets. A livelihood is sustainable, either dynamically or statically (Ahmed and Lipton, 1997), when household well-being is enhanced (economic sustainability) and the productivity of key resources is maintained (environmental sustainability) (Campbell, 1999; DFID, 2000). In this study, economic and environmental sustainability, both statically and dynamically, are used as proxy indicators of sustainable rural livelihoods.

Among the demographic variables, age and sex of household heads are linked to access to livelihood assets and thereby sustainability of rural livelihoods. Age of household head (proxy for the stage of a household in life cycle) determines the quantity and quality of resources that households possess and consequently the activities they employ to sustain livelihoods (Valdivia and Quiroz, 2001). It is also well documented in the literature that female headed households have limited access to land (Hoben, 2001), small labor size and livestock (Tiruwork, 1998), low literacy status and social capital (Grootaert, 1999), and low access to credit (Ogato et al., 2009). Thus, the possibility of achieving sustainable livelihoods is a challenge for households headed by young and old persons, and by females. The pursuing of different combinations of strategies also depends on changes in dependency ratios of households (Scoones, 1998).

Land is an indispensable natural capital, as about 84% of the country’s population depends on agricultural activities. Nevertheless, arable land has become a scarce resource in the country. According to CSA (2009), the average size of land holding per household is 1.19 ha and the average crop land area is 1 ha per household. It also indicates that among those who have agricultural holdings, about 32% of them

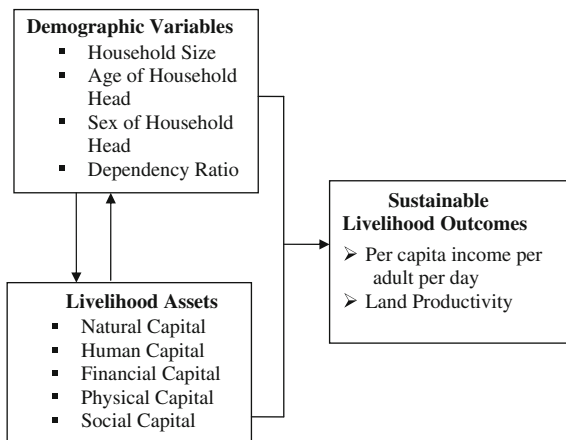


Fig. 13.1 Analytical framework of the study (source: adapted from sustainable livelihoods framework (DFID, 2000))

have land size of less than 0.50 ha. According to World Bank (2007), the average land holdings per rural person decreased from 0.50 ha in 1960s to 0.21 ha in 1999. Studies conducted in different parts of the country also indicate the declining trend of per capita land holding (Markos, 1997; Muluneh, 2003; Degefa, 2005). Given the low level of agricultural technology in the country that dissuades the productivity of farm land, such declining trend of per capita land holding makes the size insufficient to sustain livelihoods (World Bank, 2007).

The carrying out of agricultural activities and conservation of the environment are strongly associated to human capital, such as education and labor size of the household members (DFID, 2002; Degefa, 2005). Households with better educational level, large labor size, and good health condition are better in conserving the land, utilizing the livelihood assets, and diversifying livelihood activities, which are vital to sustain livelihoods.

Livestock ownership contributes to sustainable livelihoods through its production, consumption, buffering, saving, and insurance functions (Dorward et al., 2004). Ownership of farm equipments and access to infrastructure influence the livelihoods of rural people as producers and consumers. Access to basic infrastructure such as road and the market center is strongly related to land and labor productivity (Degefa, 2005; Jansen et al., 2006), and engagement in non-farm activities and use of farm inputs (Muluneh, 2003).

Financial capital, i.e., access to credit and saving, is crucial for sustainable livelihoods through its imperative role in technology dissemination, diversification of income generation activities, and investment on other assets (Khandker, 2003; Ellis and Freeman, 2005). Likewise, the social capital of a household affects livelihood sustainability as it determines access to other livelihood assets (Grootaert, 1999).

13.3 Description of the Study Area

The study was conducted in Jimma Arjo District in East Wollega Zone of Oromia National Regional State, South West Ethiopia (Fig. 13.2). The district capital, Arjo, is found at a distance of 379 km from Addis Ababa, the national capital, and 48 km from Nekemte, the zonal capital. The population density of the district is 116.4 persons per km², which is considerably greater than the zonal average (56.3 persons per km²) (CSA, 2008). With a total area of 75,812 ha, nearly half of the district (49.7%) is categorized under the mid-altitude (sub-tropical) agro-ecological zone. Despite variation in the amount of rainfall received by different parts of the area, the district is found in the well-watered Western highlands of the country where rainfalls throughout the year. The livelihood of the majority of the population (90%) depends on the farming of basic crops and animals: cattle, sheep, goats, equines, and poultry. The main crops grown in the district include *teff*, wheat, barley, horse beans, peas, sorghum, maize, and millet. Nevertheless, agricultural productivity in the area has been seriously challenged in the recent past due to the combined effect of land degradation, unfavorable climatic condition (delayed onset of rainfall), and increasing population size (Bezuayehu et al., 2002; Dechasa, 2003).

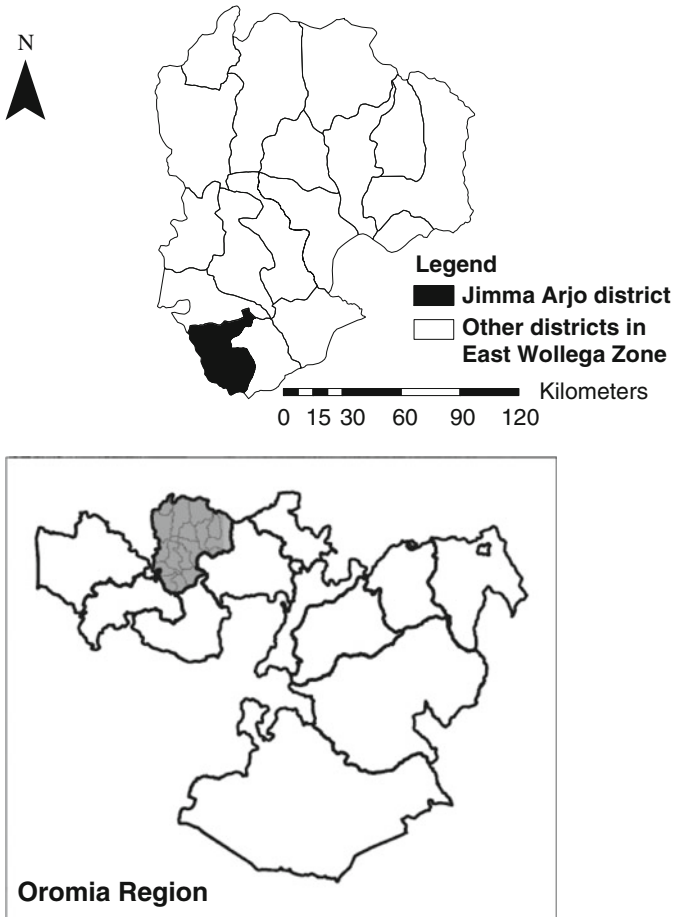


Fig. 13.2 Map of Jimma Arjo district, East Wollega Zone, Oromia Region

13.4 Data and Methods

The primary data used in this study were collected from 390 households randomly selected from three *Kebeles* (the lowest administrative unit in the country) of the district, one from each agro-ecological zone. The data were collected on household demographic characteristics, livelihood assets, income, and land productivity, referring to two points of time (2001/2002 and 2006/2007) to examine their changes and effects on sustainable livelihoods. Among the 390 households, 7 of them (1.8%) were not established in 2001/2002, and these were excluded from multivariate analysis.

The dependent variable is the sustainability of the livelihoods of a household. To measure it, per capita income per adult equivalent and land productivity were

used as proxy indicators of economic and environmental sustainability, respectively. Accordingly, the livelihood of a household was considered economically sustainable when the per capita income per adult equivalent per day was at least equal to 0.45\$ US¹ during both years. Similarly, it was considered environmentally sustainable when the land productivity (measured in terms of farm products per hectare obtained during the main cropping season) of the later year was at least equal to that of the former. The livelihood of a household was considered sustainable when the per capita income per adult equivalent was 0.45\$ US per day for both years and when the land productivity of the later year was at least equal to the former year. Binary logistic regression model was used to examine the effect of the predictor variables. Its outcome variable is dichotomous which takes the value of 1 for success (livelihood is sustainable) and 0 for failure (livelihood not sustainable).

It is hypothesized that households headed by young and old individuals and females have less likelihood of achieving sustainable livelihoods due to limited access to livelihood assets. Likewise, increased household size and dependency ratio decrease the likelihood of sustaining livelihoods. In the context of low level of technological input, increased land and labor force sizes increase the likelihood of sustaining livelihoods. It is also assumed that sustainable livelihood is positively related to increased educational level, increased size of livestock owned, shorter distance from the market center, access to credit, saving, and high decision making power in the Community Based Organizations (CBOs).

13.5 Results and Discussion

The interaction of household demographics with access to livelihood assets determines the sustainability of livelihoods in particular and the environment in general. The subsequent sections describe variation of livelihood assets owned by households by their demographic characteristics and the interactive effect of the two upon livelihood sustainability.

13.5.1 Demographic Dynamics and Changes in Livelihood Assets

More than half of the sample households (53%) are headed by individuals in the middle age group (35–54). Households headed by younger and older individuals constitute 22 and 25%, respectively. Male household heads comprise three quarters of the respondents and the remaining 25% are female household heads. When the pattern of change (in the 5-year period) is seen for individual households, the adult equivalent household size (value that weighs variation of the age of household members) has increased for about 56% of the households while it has decreased and

¹Given the purchasing power parity, this figure was used by the Ministry of Finance and Economic Development (MoFED, 2005) to estimate the percentage of population living below poverty line.

remained unchanged for 34 and 10% of the households, respectively. The household size is greater than 4 for about 58% of the households. On the other hand, the mean dependency ratio of the households significantly decreased from 1.23 to 0.79 during the same period.

With regard to the pattern of distribution of land holding size in the 12 months prior to the survey, the majority of the households (61%) have 1 ha or less of land and only 2.8% of them responded they had more than 3 ha. The mean land holding size during the same time is 1.06 ha, which has insignificantly decreased from 1.09 ha in 2001/2002. The land size of 91% of the sample households did not change during the 5 years.

Educational status of the household heads and labor size of the households are used as indicators of human capital of the households. Accordingly, more than half of the households (52%) are headed by illiterates. The mean labor size (described in man equivalent) significantly increased from 2.61 in 2001/2002 to 3.04 in 2006/2007. The size has increased for about 73% of the households, remained unchanged for 15%, and decreased for 12%. Despite insignificant change in the household size, this increase in labor size is attributable to the decrease in dependency ratio.

Among the physical capital, the mean livestock size in Tropical Livestock Units (TLU) owned by households significantly increased from 2.58 in 2001/2002 to 2.95 in 2006/2007. The size of livestock owned by nearly half of the sample households (49%) increased between the 5 years. Although farming constitutes the main source of livelihoods in the area, only 37% of the households have all the necessary farm equipment in 2006/2007. Most of the sample households do not have all farm equipment that is essential for farm operation. This could be because they have either no land to plough or had entered into share cropping arrangement due to lack of labor or oxen. Sixty-eight percent of the households are found at-the-most 20-min-walking-distance from the road (all-weather and/or dry-weather), and 76% were found at less than 2-h-walking-distance from the main market center.

As far as financial and social capitals are concerned, only 16% of the household heads respond that they obtained credit from financial institutions in 2001/2002, rising to 20% in 2006/2007. On the other hand, in 2006/2007 more than half (57%) of the heads mention that they had saving either in cash or kind to be used in times of emergency. Most of the household heads (90%) are members of at least one CBO. Nevertheless, for 69% of them, their decision making power (measured by creating an index based on their subjective evaluation of their roles in the CBOs) is low.

13.5.2 Differential Access to Livelihood Assets

The variation in access to different livelihood assets is a function, among other things, of the demographic characteristics of households. This variation is described below in relation to age and sex of the household heads.

Age of household head and livelihood assets: As indicated in Table 13.1, households headed by individuals in the middle age group are found to have better access

Table 13.1 Differential access to livelihood assets by age group of household heads

No.	Livelihood assets	Age group of household heads			Type of test	Test result
		≤35	36–54	55+		
1	Mean land size	0.66	1.20	1.14	F-test	13.7*
2	Mean labor size	2.25	3.37	3.03	F-test	22.3*
3	Mean size of livestock	1.83	3.49	2.79	F-test	12.8*
4	Mean index of decision making	0.35	0.39	0.32	F-test	4.2**
5	Percent literate	54.8	52.4	33.7	χ^2 -test	11.2*
6	Percent owned all farm equipments	16.7	34.6	41.8	χ^2 -test	23.1*
7	Percentage of access to credit	9.5	25.0	18.4	χ^2 -test	9.2*
8	Percent who had saving	50.0	64.9	50.0	χ^2 -test	8.8**

*Significant at 0.05; **Significant at 0.01.

Source: Survey Data

to all livelihood assets. The mean sizes of land (in hectare), labor (in man equivalent), and livestock (in TLU) owned by these households are 1.20, 3.37, and 3.49, respectively. Similarly, households that had savings and better access to credit are headed by middle-age persons. More than half (52%) of these heads are literate and have high decision making power in CBOs. Households headed by middle-age persons are at the life cycle stage when they can utilize their favorable demographic characteristics (large labor size and low dependency ratio) to increase their asset possession through engagement in different livelihood activities. On the other hand, for the newly established households, it is the time when they start to accumulate.

Sex of household heads and livelihood assets: Female household heads have limited access to livelihood assets compared to their male counterparts. Whilst the mean land holding size of female household heads is 0.78 ha, it is 1.16 ha for males.

Table 13.2 Differential access to livelihood assets by sex of household head

No.	Livelihood assets	Sex of household head		Type of test	Test result
		Male	Female		
1	Mean land size	1.16	0.78	T-test	3.85*
2	Mean labor size	3.31	2.20	T-test	7.38*
3	Mean size of livestock	3.49	1.31	T-test	7.50*
4	Mean index of decision making	0.40	0.23	T-test	8.20*
5	Percent literate	54.8	28.1	χ^2 -test	20.56*
6	Percent owned all farm equipment	39.1	12.5	χ^2 -test	56.75*
7	Percentage of access to credit	24.1	7.3	χ^2 -test	12.85*
8	Percent who had saving	63.6	40.6	χ^2 -test	15.68*

*Significant at 0.01.

Source: Survey Data

Seventy-two percent of female household heads are illiterate. The mean labor size of female headed households is 2.20 compared to 3.31 for male heads, and of livestock is only 1.31 compared to 3.49 for male heads. Among the household heads who did not have access to any credit, females constitute 92%. Most female household heads have no saving in cash or kind. The mean index of decision making in CBOs for females is 0.23 compared to 0.40 for males. In all cases, the difference between the two is statistically significant at 1%.

13.5.3 Correlates of Sustainable Rural Livelihoods

As noted above, per capita income and land productivity as respective indicators of economic and environmental sustainability are given due emphasis to identify those households with sustainable livelihoods. Generally, the livelihood of only 67 households (17.5%) is found to be sustainable. That is, these households are able to maintain the minimum per capita income per day per adult equivalent of 0.45\$ and land productivity during both years considered in the survey. It is “dynamically” sustainable for 57 of these better-off households (both per capita income and land productivity increased), and “statically sustainable” for 10 households (the land productivity was maintained and per capita income increased). Using the test proportion of 0.17, the binomial test shows statistically significant difference between households with sustainable and unsustainable livelihood.

Age of the household head is one of the demographic variables significantly associated to sustainable livelihood. Livelihood is sustainable in 73% of middle age household heads (36–54), 21% in the oldest (55+) and only 6% of the younger household heads (≤ 35). The logistic regression result also shows significant likelihood of livelihoods sustainability of the households headed by middle-age individuals compared to the other age categories. The relatively better sustainability of the livelihood of the households headed by middle-age persons is attributable to their better access to livelihood assets (land, labor, literacy, livestock, savings, and credit). On the other hand, the unsustainability of livelihoods of newly established households is associated to their limited access to all these livelihood assets, as it is the time when they start to accumulate. During old age, resources are bequeathed and options to sustain livelihoods are limited (Valdivia and Quiroz, 2001).

Male headed households over-represent the percentage of households with sustainable livelihoods. Among female headed households, the livelihood of only 3% of them is sustainable. Despite their role to carry the larger burden of ensuring the livelihoods of households, their limited access and entitlement to livelihood assets, which is shaped by gender norms and patriarchal form of power relations in the country (Frankenberger et al., 2007; Ogato et al., 2009), contributes immensely to the unsustainability of the livelihoods of female headed households. The culturally defined roles of women, together with the differential access to assets, also determine their selection of and participation in income generating activities (Frankenberger et al., 2007). The limited opportunities of female headed households

to expand their livelihood activities and increase the return from them due to limited asset possession, thus, escalates the vulnerability of their livelihoods.

With statistically significant association between the change in household size during the 5 years and sustainable livelihoods, 72% of the households whose adult equivalent household size decreased are found to achieve sustainable livelihoods. However, the model result shows that, compared to households with decreased household size, the likelihood of livelihood sustainability is 1.6 times higher for households with unchanged size ($p > 1$) and significantly decreased for those with increased household size ($p < 0.01$). Increase in household size is usually associated to high likelihood of diversification of activities to sustain livelihoods.

In the case of the study area, however, non-farm income surprisingly constitutes only 8.8% of the household income (Dula, 2007), compared to much higher levels in other parts of the world: 45% in Colombia (Deininger and Olinto, 2001), 51% in Peru (Escobal, 2001) and 18% in West Gurage land of Ethiopia (Muluneh, 2003). The sample households attribute their limited participation in, and low return from, non-farm activities to inadequate employment opportunities and low payment for the existing work. (Dula, 2007). It is worth noting that increasing in household size cannot be expected to have a positive effect on sustainable livelihoods in this small time period. On the other hand, the mere decreasing in household size does not necessarily increase livelihood sustainability, as there must be certain minimal or “optimal household size” to carry out livelihood activities. Thus, the relationship between change in household size and sustainable livelihoods is complex and dynamic, being confounded by the access to and utilization of livelihood assets on the one hand, and relative contribution of the household members to household livelihoods within each life cycle category on the other.

Among the households with increased dependency ratio, the livelihood of only 8% is sustainable. According to the model result, compared to households for which the number of economically dependent members decreased during the 5 years, the likelihood of sustaining livelihoods is 67% less for households with unchanged number of dependents, and 91% less for those with increased number of dependents (significant at 5 and 10%, respectively). This indicates that livelihood unsustainability is over-represented among households with increased number of dependents. Increased number of dependents inhibits the number of household members engaged in various income generating livelihood activities (Jansen et al., 2006) as well as in labor intensive land conservation activities. It is, however, worth noting that as rural children are also involved in farming activities, further explanation of the effect of dependency ratio requires thorough analysis of the age and sex composition of the households, the nature of activities they are engaged in, and the contribution to sustainable livelihoods.

Land, the essential asset for rural people, plays an important role in their livelihoods. While 60% of households that had at least 1 ha of land have sustained livelihoods, among the households with land holding size of less than 1 ha, only 40% of them were found to sustain livelihoods. The model result, however, showed insignificant effect of land size on sustainable livelihoods. The declining trend of land holding and its productivity due to increasing population size and severe soil

erosion (Bezuayehu et al., 2002), and consequently the search for optional means of livelihoods, is expected to reduce the significance of land size owned by households.

Literacy status of the household head is one of the human capital factors related to livelihood sustainability. In this regard, 91% of the households with sustainable livelihoods are headed by literate individuals. Similarly, significant at 1%, the logistic regression model indicates that illiteracy of the household head decreases livelihood sustainability by about 95%. Literacy is one of the human capitals that increase the opportunity that households will get access to other livelihood assets. Hence, households headed by literates are advantageous in expanding their access to and control over livelihood resources, diversifying livelihood activities, and engaging in higher return livelihood strategies.

Household labor is decisive for production, particularly in labor intensive agricultural activities in rural Ethiopia. The multivariate analysis, however, shows a statistically insignificant effect of change in labor size. When compared to households with increased labor size, the likelihood of sustaining livelihoods decreased by 92% for those households with decreased labor size over the 5 years. The figure also indicates that, the likelihood of sustaining livelihoods increased for households with unchanged labor size compared to the same reference category. This implies that the mere increase of labor size may not necessarily improve livelihood sustainability, which could be attributable to marginal return to labor productivity. One of the key informants in the study area mentioned that *“we are spending the scant resources we have on education of our children. Let alone the illiterate, these educated youngsters themselves are returning back to rural area and claiming the small piece of land we have”*. Thus, given limited access to livelihood assets, unless alternative sources of income from non-farm activities are available to use the surplus labor, its contribution to sustainable rural livelihoods is limited.

Livelihood sustainability is positively affected by the size of livestock owned. As shown in Table 13.3, the likelihood of sustaining livelihood is the highest for households whose size of livestock owned increased over the 5 years and the least for those with decreased size of livestock holding. Given that the study area is known by mixed farming (crop and livestock production), the size of livestock owned by households has overriding role in sustaining livelihoods. In spite of the fact that oxen are the basis of rural farming operation in the country in general and in the study area in particular, other livestock help households as means of saving, particularly in the absence of rural microfinance institutions, and income and consumption smoothing during the time of crop failure. Besides, livestock enable households to access credit by serving as collateral and those households that do not have land but draft animals share with land owners and obtain some amount of crop produced in compensation. Manure of livestock also improves the productivity of farm land.

Access to credit is positively related to sustainable livelihoods. Households which had access to credit are more likely to sustain livelihoods compared to the others without access, and lack of access to credit decreases livelihood sustainability by 30%. With respect to savings, a significant difference is observed between households that have saving in cash or kind and those which do not. Among the

Table 13.3 Logistic regression result of the effect of predictor variables on sustainable livelihoods

No.	Variable name	Classification	B	SE	Exp (B)
1	Age of household head	≤35	RC		1.00
		36–54	1.225	1.410	3.41*
		55+	0.338	1.426	1.40
2	Sex of household head	Male	RC		1.00
		Female	–2.029	1.056	0.13**
3	Change in household size	Decreased	RC		1.00
		Unchanged	0.970	1.285	2.64
		Increased	–4.931	1.291	0.007***
4	Change in dependency ratio	Decreased	RC		1.00
		Unchanged	–1.118	0.987	0.327*
		Increased	–2.457	1.125	0.086**
5	Land size owned	<1 ha	RC		1.00
		≥1 ha	0.417	0.862	1.52
6	Literacy status of household head	Illiterate	–2.942	0.776	0.05*
		Literate	RC		1.00
7	Change in labor size	Decreased	–2.571	1.240	0.076
		Unchanged	1.076	1.204	2.93
		Increased	RC		1.00
8	Change in livestock ownership	Decreased	–4.514	1.347	0.011***
		Unchanged	–2.503	1.021	0.082**
		Increased	RC		1.00
9	Walking distance from market center	≤120 min	RC		1.00
		121+	–0.808	0.802	0.446
10	Access to credit	No	–0.360	0.702	0.697*
		Yes	RC		1.00
11	Have savings	No	–4.052	1.456	0.017***
		Yes	RC		1.00
12	Decision making role in those CBOs	Low	–3.808	0.953	0.022***
		High	RC		1.00

RC, reference category; Nagelkere $R^2 = 0.847$.

*Significant at 0.10; **Significant at 0.05, ***Significant at 0.01.

Source: Survey Data

households with sustainable livelihoods, about 98% of them state that they had savings. Likewise, the logistic model confirms the significant decrease in the likelihood of sustaining livelihoods in the absence of saving. The financial capital of households (credit and savings) is usually associated to the use of agricultural inputs and hence enhanced productivity (Ellis and Freeman, 2005). Moreover, it broadens the income earning opportunities of households and protects the livelihood of rural households by avoiding depletion of assets during times of seasonal food shortages, illness, and other livelihood problems (Tesfaye, 2003).

The social capital of households is a valuable asset to sustain livelihoods particularly in rural areas. The decision making index of the household head is used

as a proxy variable to measure the social capital of households. The index is constructed based on the subjective evaluation of the household head about his/her role in CBOs. There exists a significant relationship between level of decision making and livelihood sustainability. Among household heads with sustainable livelihoods, 84% of them are headed by individuals with high decision making (≥ 0.50) role in the CBOs. The likelihood of livelihood sustainability decreases by about 98% when the heads have low decision making power, significant at 1%. Participation in local CBOs is strongly related to the daily livelihood activities of households particularly in rural areas. Social capital contributes to sustainable livelihoods through its role of facilitating access to other assets such as access to credit and savings, sharing of labor and other resources.

Among those living in the highland and low land areas, 19% each achieve sustainable livelihoods, whereas 15% of those living in mid-altitude area achieve livelihood sustainability. On the other hand, livelihood diversification, as measured by livelihood diversification index, plays crucial role to sustain livelihoods. The index is constructed on the basis of identifying the main income sources of the households (farming, livestock production, trading, selling fuel wood and charcoal, wage labor, and traditional contribution such as weaving, blacksmith and pottery) and dividing one by the sum of the square of proportional contribution of each livelihood activity to each household's income. Accordingly, the mean index of livelihood diversification is high for households with sustainable livelihoods (1.88) compared to the households with unsustainable livelihoods (1.73), significant at 5%. Besides, households headed by males, middle age individuals, and illiterates have higher value of mean index of livelihood diversification compared to their counterparts.

13.6 Conclusions

This study focuses on the changes in demographic characteristics of households and access to livelihood assets on the one hand, and their effect on sustainable rural livelihoods on the other. There exists significant difference in households' access to livelihood assets: households headed by younger and much older persons and females are at a disadvantage in accessing the livelihood assets (land, labor, livestock, credit, education, and saving). Changes in demographic characteristics of households (age structure) significantly influence the likelihood of sustaining livelihoods. Newly established households face livelihood challenges due mainly to their limited accumulation of livelihood assets. During the old age, too, the loss of some assets (e.g., bequeathing land to sons) limit their assets. Thus, change in the structure of a household at different stages of the life cycle, coupled with the quantity and quality of assets at the disposal of the respective households, determines the sustainability of livelihoods.

The findings demonstrate the importance of considering household life cycle (age and sex structure) while designing livelihood interventions and also enhancing the local community based organizations that can provide mutual support, particularly

for the resource poor households. Policies aimed at developing rural non-farm and off-farm economic opportunities also immensely contribute to the sustainability of the livelihoods of rural households. Further studies are required to analyze the potentials and challenges of migration, labor mobility, and agricultural intensification in sustaining livelihoods in the context of resource scarcity and increasing population size in the study area.

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References

- Ahmed, I. and Lipton, M. (1997). Impact of Structural Adjustment on Sustainable Rural Livelihoods: A Review of the Literature. IDS Working Paper 62.
- Ayalneh Bogale. (2002). Land Degradation, Impoverishment and Livelihood Strategies of Rural Households in Ethiopia: Farmers' Perception and Policy Implication. Germany, Institutional Change in Agriculture and Natural Resources, Vol. 8. Shaker Verlag.
- Badege Bishaw. (2001). Deforestation and Land Degradation in the Ethiopian Highlands: A Strategy for Physical Recovery. *Northeast African Studies* 8(1): 7–26.
- Bebbington, A. (1999). Capitals and Capabilities: A Framework for Analyzing Peasant Viability, Rural Livelihoods and Poverty. *World Development* 27(12).
- Bezuayehu Tefera, Gezahegn Ayele, Yigezu Atnafe, Jabbar, M.A., and Paulos Dubale. (2002). Nature and Causes of Land Degradation in the Oromia Region: A Review. Socio-Economics and Policy Research Working Paper 36. International Livestock Research Institute Nairobi, Kenya.
- Blanchet, D. (1991). On Interpreting Observed Relationships Between Population Growth and Economic Growth: A Graphical Exposition. *Population and Development Review* 17(1): 105–114.
- Boserup, E. (1965). *The Conditions of Agricultural Growth*. Chicago, IL, Aldine.
- Campbell, J. (1999). Linking the Sustainable Livelihoods Approach and the Code of Conduct for Responsible Fisheries. University of Exeter Campus, UK, Workshop Facilitators' Background Notes Prepared for Sustainable Fisheries Livelihoods Project.
- Central Statistical Agency (CSA). (2008). Summary and Statistical Report of the 2007 Population and Housing Census: Population Size by Age and Sex. Federal Democratic Republic of Ethiopia, Population Census Commission, December 2008.
- Central Statistical Agency (CSA). (2009). Agricultural Sample Survey 2008/2009, Vol. IV. Report on Land Utilization. Statistical Bulletin 446, Addis Ababa.
- Chayanov, A.V. (1986). *On the Theory of Peasant Economy*. Madison, WI, The University of Wisconsin Press.
- Dechasa Lemessa. (2003). Surplus Producing Eastern Highland Parts of Eastern Wollega Zone Badly Hit by Current Crisis. UN Office for the Coordination of Humanitarian Affairs, Ethiopia. <http://www.reliefweb.int/library/documents/2003/ocha-eth-11sep.pdf>
- Degefa Tolossa. (2005). Rural Livelihood, Poverty and Food Insecurity in Ethiopia: A Case Study at Ernessa and Garbi Communities in Oromia Zone, Amhara National Regional State. Doctoral Thesis, Department of Geography, NTNU, Norway.
- Deininger, K. and Olinto, P. (2001). Rural Non-farm Employment and Income Diversification in Colombia. *World Development* 29(3).

- de Sherbinin, A., VanWey, L., McSweeney, K. et al. (2008). Rural Household Demographics, Livelihoods and the Environment. *Global Environmental Change* 18(1): 38–53.
- DFID. (2000). Sustainable Livelihoods Guidance Sheets. Department for International Development. http://www.livelihoods.org/info/info_guidancesheets.htm.
- DFID. (2002). Improving Livelihoods for the Poor: The Role of Literacy. http://www.livelihoods.org/info/info_guidancesheets.htm.
- Dorward, A., Anderson, S., Paz, R. and Pattison, J. (2004). *A Guide to Indicators and Methods for Assessing the Contribution of Livestock Keeping to Livelihoods of the Poor*. London, Department of Agricultural Sciences Imperial College.
- Dula Etana. (2007). Demographic Dynamics and Sustainable Rural Livelihoods in Jimma Arjo District, East Wollega of Oromia, Ethiopia. Unpublished MSc Thesis, Addis Ababa University, Addis Ababa.
- Ehrlich, P. and Ehrlich, A. (1990). *The Population Explosion*. New York, NY, Simon and Schuster.
- Ellis, F. and Freeman, H. (2005). Conceptual Framework and Overview of Theories. In Ellis, F. and Freeman, H. (eds.), *Rural Livelihoods and Poverty Reduction Policies*. London and New York, NY, Routledge Taylor and Francis Group.
- Ermias Bekele. (2003). Causes and Consequences of Environmental Degradation in Ethiopia. In Gedion Asfaw (ed.), *Environment and Environmental Change in Ethiopia*. Addis Ababa, Ethiopia, Forum for Social Studies.
- Escobal, J. (2001). The Determinants of Non-farm Income Diversification in Rural Peru, *World Development* 29(3).
- Frankenberger, T.R., Sutter, P., Amdissa Teshome, Alemtsehay Abera, Mulugeta Tefera, Moges Tefera, Alemayehu Seyoum, Bernard, T., Spangler, T., Yeshewamebrat Ejigsemahu. (2007). *Ethiopia: The Path to Self-Reliancy*, Vol. I. Final Report Prepared for CHF-Partners in Rural Development on Behalf of Canadian Network of NGOs in Ethiopia.
- Getachew Adem and Demele Yismaw. (2001). Sustainable Development Indicators and Environmental Policy. In Zenebework Tadesse (ed.), *Environment and Development in Ethiopia. Proceeding of the Symposium of the Forum for Social Studies*. Addis Ababa, Forum for Social Studies.
- Grootaert, C. (1999). Social Capital, Household Welfare and Poverty in Indonesia. Local Level Institutions. Working Paper 62.
- Hoben, A. (2001). Ethiopian Land Tenure Revisited: Continuity, Change and Contradictions. In Workneh Nigatu, Yared Amare, and Yigremew Adal (eds.), *Current Issues on Land Tenure in Ethiopia: Access, Food Production and Natural Resource Management*. Workshop Proceedings Organized by IDR/AAU in Cooperation with Land Tenure Center, University of Wisconsin-Madison, Sponsored by Ford Foundation.
- Jansen, H., Pender, J., Damon, A. and Schiper, R. (2006). Rural Development Policies and Sustainable Land Use in the Hillside Areas of Honduras: A Quantitative Livelihoods Approach. International Food Policy Research Institute Research Report 147.
- Kelley, A. (2001). The Population Debate in Historical Perspective: Revisionism Revisited. In Birdsall, N., Kelley, A., and Sinding, S. (eds.), *Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World*. Oxford University Press.
- Khandker, S. (2003). Microfinance and Poverty: Evidence Using Panel Data from Bangladesh. World Bank Research Working Paper 2945.
- Malmberg, B. and Tsegaye Tegenu. (2006). *Population Pressure and Dynamics of Household Livelihoods in an Ethiopian Village: An Elaboration of the Boserup-Chayanovian Framework. Författaren samt Kulturgeografiska institutionen*. Sweden, Stockholm University.
- Markos Ezra. (1997). *Demographic Responses to Ecological Degradation and Food Insecurity: Drought Prone Areas in Northern Ethiopia*. Amsterdam, PDOD Publications.
- Marquette, C. (1997). *Turning but not Toppling Malthus: Boserupian Theory on Population and the Environment Relationships*. Bergen, CMI Development Studies and Human Rights Working Paper 16.

- Masfield, A. (2001). Chronic Food Insecurity in Ethiopia: Looking Through a Livelihood Lens. In Yared Amare, *Food Security and Sustainable Livelihoods in Ethiopia*. Proceedings of the Symposium of the Forum for Social Studies, Addis Ababa.
- Meadows, H., Meadows, L., Randers, J., and Beherens, W., III. (1972). *The Limits to Growth. A Report for the Club of Rome's Project on the Predicament of Man Kind*. New York, NY, Universe Books.
- Melaku Worede. (2001). Agro-Biodiversity and Food Security in Ethiopia. In Zenebework Tadesse. (ed.), *Environment and Development in Ethiopia*. Proceeding of the Symposium of the Forum for Social Studies. Addis Ababa.
- MoFED. (2006). *Ethiopia: Building on Progress – A Plan for Accelerated and Sustained Development to End Poverty (2005/06–2009/10)*. Ministry of Finance and Economic Development, Addis Ababa, September 2006.
- MoFED. (2005). *Ethiopia: Sustainable Development and Poverty Reduction Program*. Ministry of Finance and Economic Development, Addis Ababa, Ethiopia.
- Muluneh Woldetsadik. (2003). Impacts of Population Pressure on Land Use/Land Cover Change, Agricultural System, and Income Diversification in West Gurageland, Ethiopia. Dr. Polit Thesis, Department of Geography, NTNU, Norway.
- Mulunesh Woldemariam. (2001). Gender, Sustainable Livelihood and Food Security in Rural Ethiopia. In Yared Amare (ed.), *Food Security and Sustainable Livelihoods in Ethiopia*. Proceedings of the Symposium of the Forum for Social Studies, Addis Ababa.
- National Research Council. (1986). *Population Growth and Economic Development: Policy Questions*. Washington, DC, National Academy Press.
- Ogato, G.S., Boon, E. K., and Subramani, J. (2009). Improving Access to Productive Resources and Agricultural Services through Gender Empowerment: A Case Study of Three Rural Communities in Ambo District, Ethiopia. *Journal of Human Ecology* 27(2): 85–100.
- Patterson, K.P. (2007). Integrating Population, Health, and Environment in Ethiopia. Population Reference Bureau Policy Brief in “Making the Link” Series.
- Perz, S.G. (2002). Household Demography and Land Use Allocation among Small Farms in the Brazilian Amazonian. *Human Ecology Review*, 9(2).
- Scoones, I. (1998). Sustainable Rural Livelihoods: A Framework for Analysis. IDS Working Paper 72.
- Seyoum Gebresellasie. (1996). Population, Land Use and Food Insecurity in Ethiopia: Policy and Programmatic Implications of Past and Current Situations. In Aklilu Kidane (ed.), *Integration of Population, Environment, Equitable and Sustainable Development in to the Curriculum of the DTRC of the IDR at AAU*. Addis Ababa, Workshop Proceeding.
- Tesfaye Lemma. (2003). Livelihood Strategies in the Context of Population Pressure in Hararghe Highlands. Unpublished PhD Thesis, University of Pretoria, South Africa.
- Tiruworke Tizazu. (1998). Access to Resources and Productivity of Female Headed Households: The Case of East Gojjam and North Shoa. Unpublished MA Thesis, Addis Ababa University, Addis Ababa.
- United Nations. (2001). *Population, Environment and Development: The Concise Report*. New York, NY, Department of Economic and Social Affairs. Population Division.
- United Nations Economic Commission for Africa (UNECA). (2002). *Economic Report on Africa 2002*. Addis Ababa, Ethiopia, Tracking Performance and Progress.
- Valdivia, C. and Quiroz, R. (2001). Rural Livelihood Strategies, Assets, and Economic Portfolios in Coping With Climatic Perturbations: A Case Study of the Bolivian Andes. Paper Presented at the Social Organization and Land Management Session, Integrated Natural Resource Management for Sustainable Agriculture, Forestry and Fisheries. University of Missouri and Centro Internacional de la Papa.
- WCED. (1987). *Our Common Future: The Report of the World Commission on Environment and Development*. Oxford, Oxford University Press.
- World Bank. (2007). *Capturing the Demographic Bonus in Ethiopia: Gender, Development, and Demographic Actions*. Washington, DC, World Bank.

Part VI
Development Policy and Program
Evaluation

Chapter 14

Population, Family Planning and Long-Term Development Goals: “Predicting an Unpredictable Future”

Senait Tibebe

Abstract There is a growing need for evidence-based and concrete information about the interrelationship between population and development by policymakers in many countries. This paper provides information on the contribution of population to the realization of Ethiopia’s vision of “extricating itself from poverty and becoming a middle-income economy”. It uses a computer model “Spectrum” to project the population to the year 2035 under two fertility decline scenarios and links it with the growth in Gross Domestic Product (GDP). The assumptions for the two projections are: (1) High fertility decline scenario at TFR 2.1 in contrast to a low fertility decline scenario at 3.4 TFR by 2035, and (2) A faster development scenario with GDP growth of 10.1% annually, in contrast with a lower development scenario with 7.3% annual GDP growth. Under the fast fertility decline assumption, the population will reach at 128 million, and in the slow decline scenario it will be 148 million. Under the fast fertility decline and high growth scenario, GDP per capita will reach around \$1,400, allowing the country to join the middle income category in 2035. We conclude that the country might be able to achieve its middle-income development vision under the fast fertility decline scenario if GDP grows by more than 10% and accompanied by a massive family planning program and giving attention to quality social services, such as education, health care and women’s empowerment.

Keywords Population · Development · Policy · Middle income · Projection · Fertility · Family planning

14.1 Introduction

There is currently a growing interest by policymakers in many countries in evidence-based and concrete information about the interrelationship between population and development. They want to see the relationship between population and

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food security, health and education, urbanization, land pressure, etc. The groups interested in climate change have also started giving attention to the role of population growth in poverty and environmental degradation. In view of these and other variables therefore, it is important to review the relationship between population and development in Ethiopia in the context of realizing the long-term development goals and examining their policy implications.

The current paper begins by providing the achievements of the past few years in the areas of population and economic growth, and a brief summary of the policy environment in the country. Then we make future projections, using two different fertility and economic growth scenarios, thus demonstrating the contribution of population to the realization of long-term development goals of the country. Finally, cost estimates needed to deliver family planning services under the two population scenarios are made for the next 5 years (2010–2015), with concluding policy recommendations.

14.2 Background

14.2.1 Population Situation

According to the recent population census of Ethiopia, conducted by the Population Census Commission in 2007, the actual count of the Ethiopian population was found to be about 73.9 million. This number was less by 3 million people from the projected 77 million based on the 1994 census (CSA, 2010). The deficit mainly came from two of the eleven regions in the country, raising questions to the credibility of the census or of the projections. The finding of the census was also surprising to many because most of the indicators that contribute to a high population growth such as fertility, contraceptive use, age at first marriage are still low by world health standards in the country. Yet the unexpected census result of the 2007 revealed that about 45% of the population was still under the age of 15. The number of child dependants under the age of 15 for every 100 adults in the working age (15–64) was about 87% in Ethiopia (CSA, 2010). This dependency rate has a vital implication on the development of any country as it creates high reliance on the working age group. This situation of young population also implies that there is a momentum for the population to grow for a long time even after there is a decline in fertility.

14.2.2 Total Fertility Rate and Contraceptive Prevalence Rate

According to the 2005 Ethiopian Demographic and Health Survey (EDHS), the Ethiopian women on the average had 5.4 children. The National Family and Fertility Survey (CSA, 1993) conducted for the first time in the country in 1990 found the fertility rate to be 6.6 children per woman, and the EDHS conducted after

10 years revealed the fertility rate as 5.5 children. When the fertility behavior of Ethiopian women was further analyzed, it was found out that those women who live in urban areas (TFR=2.4) and those who have attended secondary or higher level of education (TFR=2) had fewer births compared to women who live in rural Ethiopia (TFR=6), who were not educated (TFR=6.1) or had only primary education (TFR=5.1) and who were not wealthy (TFR=6.6). The contraceptive prevalence rate was still amongst the lowest at 15% in 2005, although it almost doubled from 8.1% in 2000. (CSA and ORC Macro, 2001, 2006) (see [Chapters 2 and 3](#) for more details).

14.2.3 Family Planning Service Delivery Efforts

In the past few years tremendous efforts have been made to change the low family planning figures of the country. According to a recent assessment by the USAID | Health Policy Initiative (HPI), with favorable policy environment being the major focus, the country has improved a lot in family planning service provision; but there are still some areas for improvement such as method availability as the family planning methods provided are heavily skewed towards short term methods. The policy environment is not supported by public statements from higher authorities such as heads of government, and the amount of in-country funding for family planning is limited. The involvement of other ministries and public agencies in family planning is still weak, as revealed by the same program effort index.

14.2.4 Economic Indicators

The country's economic indicators are also amongst the lowest in the world rankings. The economic performance as often expressed by the Gross National Income (GNI purchasing power parity) is amongst the lowest, hovering around 800. Notwithstanding some improvements in GDP in the last 10 years, they did not contribute much to the international ranking on improving peoples' livelihoods. UNDP uses, among other things, the Human Development Index (HDI) to measure the progress made by a given country bringing together important dimensions of human development such as long and healthy life (measured by life expectancy), access to education (measured by adult literacy and enrolment at the primary, secondary and tertiary level), and a decent standard of living (measured by PPP, income). With HDI of 0.415 in 2007, Ethiopia stands at the rank of 171st out of 182 countries that provided data. Moreover, compared to other Sub-Saharan countries, Ethiopia has a lot to work on despite some improvements shown in some areas in the past few years (Fig. 14.1).

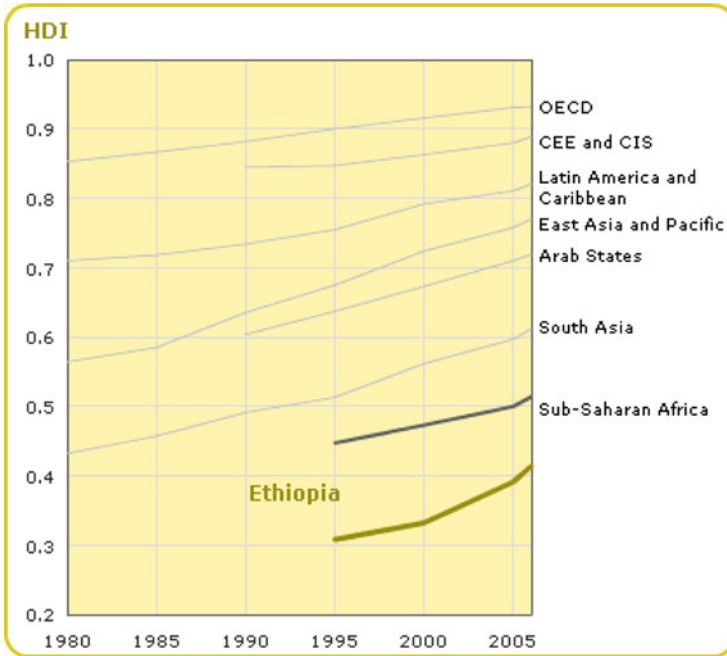


Fig. 14.1 Human development index (HDI) trends (source: indicator table G of the human development report, UNDP 2009)

14.2.5 Ethiopia's Development Vision

The long-term development vision of Ethiopia is stated thus: “In the coming 20–30 years, Ethiopia’s vision is to reach the level of middle-income countries where democracy and good governance are maintained through people’s participation and where good will and social justice are secured” (MoFED, 2006). The vision statement has the following goals especially for the economic sector:

- Build an economy which has a modern and productive agricultural sector with enhanced technology and an industrial sector that plays a leading role in the economy;
- Sustain economic development and secure social justice; and
- Increase per capita income of citizens so that it reaches the level of those middle-income countries (MoFED, 2006).

14.3 Objectives

The general objective is to provide information on the contribution of population to the realization of Ethiopia’s long-term development vision. More specifically, this

chapter projects the country's population in the next 25 years under two fertility decline scenarios and link it with the growth in GDP. This is to see if the country will be able to achieve her long-term vision of joining the middle-income countries and to estimate the implications of this in the education and health sectors, and family planning, thereby informing policy makers about the policy implications of integrating population into development objectives.

14.4 Methodology

Relevant policy papers, strategies and plan of actions in the areas of population and development in Ethiopia are summarized. These include the National Population Policy, the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), the Health Policy, and the Health Sector Development Plan (HSDP), etc. Two different population scenarios were assumed using a demographic projection tool named "*Demproj*", which is a module in a computer model called "Spectrum", to project the Ethiopian population in the next 25 years, i.e., by 2035. Using "*RAPID*" module in the same spectrum model, the Gross Domestic Product (GDP) was forecasted under the two different growth scenarios. Subsequently, the projected population was linked up with the GDP and with the country's long-term development objectives. This was done to see whether the country will be able to achieve her long-term vision, and what the contribution of population will be to realize this vision. The "*FamPlan*" module, in the same computer model, was used to provide the cost implication of the increased use of modern family planning methods.

The Policy Project developed "Spectrum Policy Modeling System" that helps to analyze existing data and determine future consequences of different population programs and policies. "*Spectrum*" is a Windows-based system of integrated policy models. These are: **Demographic Projection (DemProj)**, a program to make population projections based on current population, fertility, mortality, and migration rates for a country; *Family Planning (FamPlan)*, a program to project family planning requirements in order for consumers and/or nations to reach their goals of contraceptive practice or desired fertility; *Benefit-Cost*, a program for comparing the costs of implementing family planning programs, along with the benefits generated by those programs; *AIDS Impact Model (AIM)*, a program to project the consequences of the AIDS epidemic; *Condom Requirements (CR)*, a program to forecast national condom requirements for both family planning and HIV/AIDS prevention, focusing on the critical groups at risk in the population; *Socioeconomic Impacts of High Fertility and Population Growth (RAPID)*, a program to project the social and economic consequences of high fertility and rapid population growth for sectors such as labor force, education, health, urbanization and agriculture; *Prevention of Mother-to-Child Transmission (PMTCT)*, a program to evaluate the costs and benefits of programs to reduce mother-to-child transmission of HIV (Stover et al., 2006).

14.5 Review of Population and Related National Policies

14.5.1 The National Population Policy (NPP)

Although its implementation and its genesis is under critiques, the National Population Policy of Ethiopia was drafted in 1993 with the overall goal of harmonizing the rate of population growth with development and the rational utilization of natural resources (see Chapter 15). The then Transitional Government of Ethiopia (TGE) designed this population policy aiming at a significant reduction of the rate of population growth by primarily addressing the problem of high fertility. The policy aspires to close the gap between high population growth and low economic productivity through planned reduction of population growth and increasing economic gains. The specific objectives of the policy include among other targets: reducing the total fertility rate to approximately 4.0 by the year 2015; and increasing the prevalence of contraceptive rate to 44.0% by the same year. The policy envisages meeting these targets by employing different strategies that include expanding clinical and community based contraceptive distribution services through mobilizing public and private resources; and diversifying methods of contraception. The policy gives emphasis to different activities such as improvement in the quality and scope of reproductive health service delivery; population research, data collection and dissemination; expansion and strengthening of domestic capacity for training in population; and expansion of Information Education Communication (IEC) activities and social mobilization (TGE, 1993a).

14.5.2 Health Policy

The health policy of Ethiopia was also formulated during the Transitional Government of Ethiopia in September 1993. This policy stipulates that health policy cannot be considered in isolation from other policies addressing population dynamics, food availability, acceptable living conditions and other requisites essential for health improvement. One of the strategies in this policy document is promoting family health services by intensifying the use of family planning services for the optimal health of the mother, the child and the family at large. As one of its priority areas the policy gives special attention to the health needs of the family, particularly women and children (TGE, 1993b)

14.5.3 The Health Sector Strategic Plan

Recently, in the final year of the 5-year cycle (2005–2009) of the Health Sector Development Plan, HSDP III focuses on primary health care and preventive services

with special attention on reaching rural villages and households, thereby achieving universal primary health care access. The strategy aims at reducing under-five mortality from 150 to 85 per 1,000 population, infant mortality rate from 97 to 45 per 1,000 population and the contraceptive prevalence rate (CPR) from 15% to 60% (although this high target is also referred to as CAR, the “A” measuring the “acceptance” of family planning services). A critical element for achieving the target set in the HSDP III document is the Health Extension Program (HEP), which aims at deploying health extension workers to all Ethiopian rural villages (MoH, 2005).

14.5.4 Health Extension Program (HEP)

The Health Extension Program, which is a unique implementation modality in Ethiopia, was rapidly scaled up after 2005. The program involves the use of female health extension workers to deliver 16 health packages in four major areas namely: hygiene and environmental sanitation, disease prevention and control, family health services, and health education and communication. The overall goal of the HEP is to create a healthy society and reduce rates of maternal and child morbidity and mortality. The family health services provision includes the delivery of family planning information and services to the community through home visits and in the health posts that are being built in rural villages of the country (MoH, 2007).

14.5.5 National Reproductive Health Strategy 2006–2015

The National Reproductive Health Strategy of Ethiopia 2006–2015 was developed by the Ministry of Health in collaboration with representatives of organizations working on reproductive health in 2006. The strategy has an overall objective of meeting the reproductive and sexual health needs of the country. Programmatically, the strategy reflects three principal priorities that can contribute to the achievement of the Millennium Development Goals (MDGs) and respond to the socioeconomic and demographic realities of the country. According to this document, the priorities are “the community”, which comprises the social and cultural context; “the system”, which looks at opportunities arising from the delivery of health care services; and “the policy”, which examines the institutional framework within which decisions are made. Reducing unwanted pregnancies and enabling individuals to achieve their desired family size are the main outcomes the strategy has envisaged to achieve by creating acceptance and demand for FP, increasing access to and utilization of quality FP services and delegating the service delivery to the lowest level possible. The main targets towards this goal are reaching contraceptive coverage rate of 60% by 2010, ensuring awareness and increasing demand satisfied to 80%, and inclusion

of long-term FP service in the job description of mid-level health care providers (FMoH, 2006).

14.5.6 A Plan for Accelerated and Sustained Development to End Poverty (2005/2006–2009/2010) (PASDEP)

As the main strategy to end poverty in the country, the Government of Ethiopia acknowledges that the population challenge should be addressed carefully. The plan gives priority to the implementation of the national population policy and its strategies and to make available family planning services. Under PASDEP, greater emphasis was given to girls' education and to the fight against harmful traditional practices as they are essential for the population policy to meet its objectives.

One of the eight pillars in this poverty reduction paper for Ethiopia is creating the balance between economic development and population growth. The paper acknowledges the achievements in family planning by quoting the 2005 EDHS: It reads:

The 2005 DHS for example showed that the average ideal family size has declined over the past 5 years by nearly a child among women (all women and currently married women). A remarkable decline in fertility has already taken place in urban areas -especially in Addis Ababa where fertility has fallen rapidly to a remarkable 1.4 births per woman, as opposed to a national average of 5.4. There has been notable progress, with the CPR reportedly rising to 15% in 2005 from 8.1% in 2000.

PASDEP envisages reducing the total fertility rate to approximately 4.0 by the year 2010 and increasing the prevalence of contraceptive rate from 15 to 60% by the same period (MoFED, 2006).

14.5.7 The Constitution of the Federal Democratic Republic of Ethiopia

Among other things, it is also the constitutional right of Ethiopian women to have access to education and information on family planning. The constitution of the Federal Democratic Republic of Ethiopia under article 35.9 states that: "To prevent harm arising from pregnancy and childbirth and in order to safeguard their health, women have the right of access to family planning education, information, and capacity" (TGE, 1995).

14.6 Results

14.6.1 Population Projection

The current paper uses two population projection scenarios to project the Ethiopian population for the next 25 years in order to analyze the achievability of the long-term development vision of the country.

- (1) *High fertility decline scenario*: This scenario suggests a fast decline in fertility and reaching replacement level (2.1) by the year 2035. This high fertility decline is assumed to come from an increase in contraceptive use combined with a decline in the proportion of married women, which will be brought about by the focus the country has given to girls' education.
- (2) *Low fertility decline scenario*: This scenario is based on the 2008 revised UN's high fertility assumption, i.e. TFR of 3.75 by 2030 UN, 2009. This scenario assumes an absence of substantial access to family planning services but a fertility decline coming from an increase in age at marriage because of girls' education and a moderate family planning effort the country is expected to follow.

A computer projection model, Demproj, was used to make the two population projections up to the year 2035. The projections start in the year 2007 up to the year 2035 to match the years in the country's long-term development vision and the census year. In the high fertility decline scenario, the population will reach at around 128.5 million in the year 2035 even if TFR reaches replacement level in the same year; giving the country some time before it doubles in 30 years from 2015 as compared to the low fertility decline scenario which will have a doubling time of 27 years from 2015. Table 14.1

Table 14.1 Projected total population – Ethiopia

Year	Slow fertility decline	Fast fertility decline
2010	80,065,960	79,722,903
2015	91,460,611	90,079,030
2020	103,895,039	100,564,064
2025	117,258,864	110,795,625
2030	131,459,056	120,299,806
2035	156,345,650	128,538,526

Source: Author's projection using spectrum model, March 2010.

In the low fertility decline scenario, the country will have about 156.3 million people, an increase of about 73 million people which almost doubled the population number of the 2007 census.

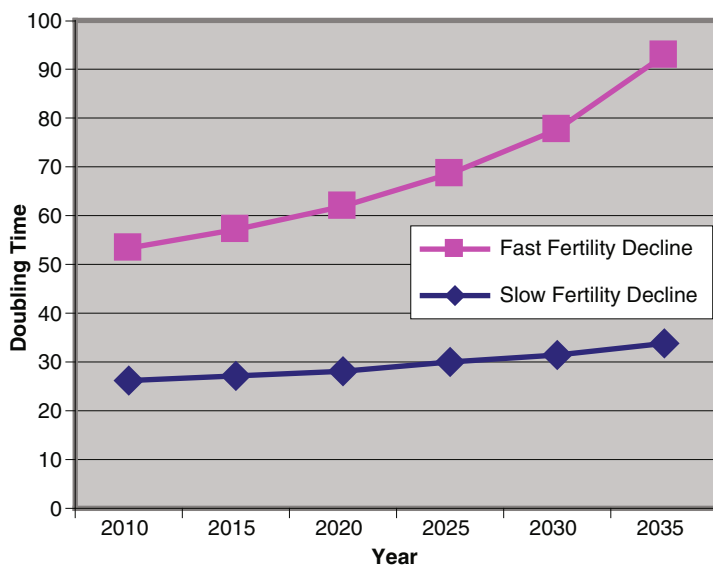


Fig. 14.2 Doubling time under two fertility decline scenarios (source: author's projection using spectrum model, March 2010)

As the years increase the population will double fast in the slow fertility decline scenario, doubling in 34 years, i.e. by 2035. In the fast fertility decline scenario, the country will gain a lot and population will take about 60 years before it doubles itself in 2035 (Fig. 14.2).

14.6.2 Population and the Country's Vision

As mentioned earlier, Ethiopia's long term vision is to reach the level of middle-income countries in the coming 20–30 years. For operational and analytical purposes the World Bank has divided economies among income groups. As per the 2008 gross national income (GNI) per capita, countries are grouped under low income, \$975 or less; lower middle income, \$976–3,855; upper middle income, \$3,856–11,905; and high income, \$11,906 or more (World Bank, 2010).

Although economies are grouped under this vast categorization, economies under a category do not experience similar development level. To see if Ethiopia will reach the level of middle-income countries by 2035 (which is 30 years after PASDEP is endorsed), GDP was used as a measure of economic development. We made different growth assumptions both for the population and for the GDP of the country.

- ***Assumption 1 – High Fertility Decline and High Economic Development Scenario:*** For this scenario, fertility was assumed to reach at replacement fertility level of 2.1 by 2035. The Ministry of Finance and Economic Development

of Ethiopia projected the percentage growth in GDP for 2010 to remain strong at 10.1%, therefore this double digit growth is assumed to stay constant in the next 25 years starting from the year 2010. (MoFED, 2001 E.C)

- *Assumption 2 – High Fertility Decline and Low Economic Development Scenario:* This scenario still assumes reaching the fertility level of 2.1 by 2035 but the economy is assumed to grow at the rate of 7.3%, which is an average annual growth in GDP in the PASDEP document (MoFED, 2006).
- *Assumption 3 – Slow Fertility Decline and Low Economic Development Scenario:* This assumes slow fertility decline but reaching 3.4 by 2035 and low economic development of growth of GDP at 7.3% consistently throughout the projection period up to the year 2035.
- *Assumption 4 – Slow Fertility Decline and High Development Scenario:* This assumes slow fertility decline but reaching 3.4 by 2035 with high economic development of growth of GDP by 10.1% annually up to the year 2035. This shows limited investment in family planning service delivery but some gains in fertility reduction as a result of increase in age at marriage because of girls education.

Using the above four assumptions, in-depth analysis was conducted to see if the country will be able to join the middle-income countries by 2035. As the chart (Fig. 14.3) depicts, Ethiopia will be able to reach the middle-income category (GDP around \$1,400) if it sustains a 10% or more annual growth rate continuously up to

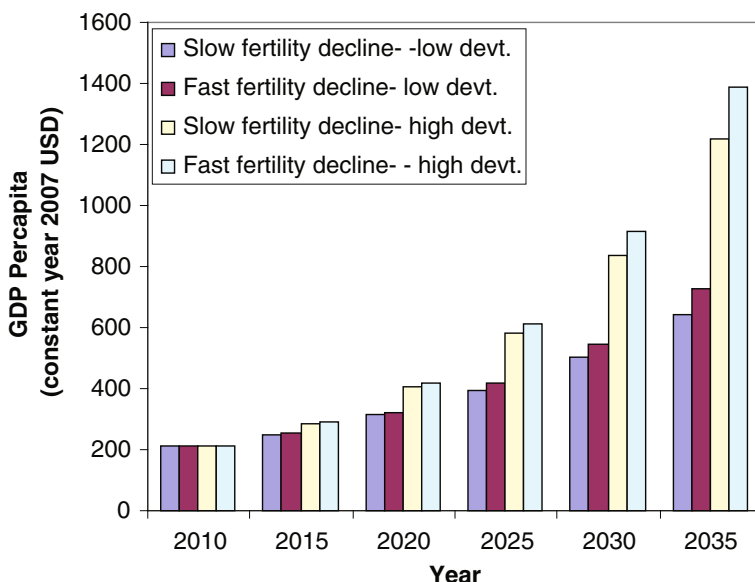


Fig. 14.3 Projected GDP per capita under four different population and economic growth assumptions (source: author’s projection using spectrum model, March 2010)

the year 2035 and reach at a total fertility rate of 2.1 by the same period. This will also be possible if the definition of middle income, as defined by World Bank in 2008, holds true in 2035 as well. The analysis used GDP per capita and compared it with the World Bank GNI per capita economic classification. Basically, there is no major difference between the two indicators for Ethiopia, for example in 2007 GDP per capita in current US price was 201.1 and the GNI per capita in current US price in the same year was 200.5 (World Statistics, UN Statistics Division). According to government documents (MoFED, NBE, PASDEP, etc.), past economic achievements of the country had been promising; according to the 2007 annual report of the National Bank of Ethiopia (NBE, 2008), growth in real GDP from 2003/2004 to 2007/2008 were 11.7, 12.6, 11.5, 11.5 and 11.6% respectively. However, there are some arguments that a country cannot grow a double digit growth for long especially as the GDP gets huge. However the finding from the current projection shows that the country cannot afford but grow with this double digit growth in order to join the middle-income countries in the next 25 years.

14.6.3 Population Growth and Required Investments

This section looks at population growth under the two population projection scenarios and its implications on selected social outcomes such as education, health and family planning expenditures in the country.

14.6.3.1 Education

PASDEP plans to increase the gross primary enrollment rate to 79.8% in 2010 from the base line figure of 61.6% in 2005 and gross primary enrolment between the ages of 7 to 15 to 67.8% by the same year from the baseline of 52.2% in 2005 (MoFED, 2006). Assuming that by the year 2035 the primary school enrollment rate will be 100% and students per primary school will be 500 and students per primary school teachers will be 50 in the same year (2035), the number of schools and teachers required is summarized below (Table 14.2).

Table 14.2 No of primary students, primary teachers required and primary schools required

Year	No. of primary students		Primary teachers required		Primary schools required	
	Fast fertility decline	Slow fertility decline	Fast fertility decline	Slow fertility decline	Fast fertility decline	Slow fertility decline
2015	17,728,654	17,852,338	315,338	316,531	28,271	28,468
2020	19,439,080	20,262,996	354,728	369,763	32,649	34,033
2025	20,481,158	22,492,686	384,984	422,795	36,340	39,909
2030	21,103,472	24,707,826	408,982	478,834	39,683	46,461
2035	21,060,300	26,788,080	421,206	535,762	42,121	53,576

Source: Author's projection using spectrum model, March 2010.

Accordingly, the projections under the two scenarios assume that the number of primary students will reach about 21.1 million in the year 2035 under the fast fertility decline scenario and about 26.8 million under the slow fertility decline scenario which is a decrease by about 5.7 million students. The country needs to train more than 100,000 teachers in just 1 year only in 2035 if population increases faster and needs to build more than 10,000 schools to achieve a 100% gross primary school enrolment rate.

14.6.3.2 Health

In the same poverty reduction strategy of the country (MoFED, 2006), the plan is to increase the number of health stations to 4,211, the number of health centers to 600 and the number of hospitals to 131, and increase the health coverage to 72% by 2010. According to MOH, health coverage is defined as one health center per 25,000 people and one health station per 5,000 people. For the current exercise, it was assumed that by 2035 the health coverage will be 100% and population per health center will be 25,000, nurse to population ratio will be 1 nurse to 5,000 people, and one doctor for 20,000 people. With this assumption the number of nurses and doctors the country needs to train and, the number of health centers required is summarized in the following table (Table 14.3).

Table 14.3 Doctors, nurses and health centers required

Year	Doctors Required		Nurses Required		Health Centers Required	
	Fast Fertility Decline	Slow Fertility Decline	Fast Fertility Decline	Slow Fertility Decline	Fast Fertility Decline	Slow Fertility Decline
2015	2,526	2,565	20,094	20,403	1,062	1,078
2020	3,168	3,273	21,804	22,527	1,439	1,487
2025	3,981	4,215	23,368	24,731	2,017	2,135
2030	5,030	5,497	24,699	26,990	3,010	3,290
2035	6,427	7,317	25,708	29,269	5,152	5,854

Source: Author's projection using spectrum model, March 2010.

As it can be easily seen from Table 14.3 above, the country needs to train more doctors and nurses to maintain the minimum health quality service. For example in 2035 the country needs to train about 1,000 more doctors and 3,500 more nurses and build about 6,000 health centers to maintain a 100% health service coverage in the country if population grows rapidly as opposed to the fast fertility decline scenario which needs a lower investment in human resource and health facility construction.

14.6.3.3 Family Planning Expenditures

Determining the family planning expenditure for Ethiopia is a tough exercise as there are no recent cost data in the country. However using the "FamPlan" module in the "spectrum" model, which allows for an input of cost information and which

provides estimates of annual expenditure in family planning based on studies done in the past, costs were estimated. These costs are associated with the provision of family planning services including commodities; the calculation was done by multiplying the number of users by the total cost per user. Several country-specific studies of the late 1990 s are provided in the “FamPlan” in which Ethiopia was one of them. According to this summary, expenditure per family planning user for Ethiopia was found to be \$15.17 in the late 1990 s (Stover et al., 2006). Assuming that as CPR increases cost per user decreases; the cost of the 1990 was used as it is to directly estimate the expenditure in family planning for the country for the next 5 years Table 14.4.

Table 14.4 Estimated family planning expenditure 2010–2015

Year	Fast fertility decline	Slow fertility decline
2010	35,495,666	29,956,783
2011	38,695,819	31,869,506
2012	42,025,103	33,848,616
2013	45,483,234	35,893,092
2015	49,066,076	37,999,066
2015	53,067,557	40,460,635
Total	263,833,455	210,027,697

Source: Author’s projection using spectrum model, March 2010.

Without considering inflation and using the family planning cost of the late 1990 s, expenditures in family planning were estimated for the country. Accordingly the country needs about \$35.5 million in 2010 to bring about a fast decline in fertility. All in all, in the next 5 years there is a need for \$210–260 million to run the family planning program effectively in the country.

14.7 Conclusions and Policy Recommendations

This chapter is limited in scope as it did not include variables that bring a rapid socio-demographic change in the country such as urbanization, food security, and factors like culture. Negative factors like increased cost of raising children and inflation that have impacts on reducing fertility are not discussed because of shortage of critical data to make estimates and projections in these areas.

Major barriers that bring a shift from the use of short acting to long-acting family planning methods were also not included in this chapter. This is therefore to call for a rigorous and in-depth analysis of these variables to clearly see the relationship between population and development in the future. However the following recommendations are forwarded based on the above findings.

14.7.1 Policy Environment

The importance of population in development has been recognized by the government of Ethiopia as it is clearly articulated in the different policy papers which put population as one of the important variables to accelerated growth. Ethiopia has a favorable policy environment for the provision of family planning information and services; it is Ethiopian women's constitutional right to ask for family planning information and get it readily available.

However, a more favorable policy environment should be promoted that includes increased government financing, the quick implementation of institutions such as the population council which was recommended in the national population policy, involving other ministries and public agencies, and increased commitment from leaders.

14.7.2 Population and Economic Growth

In order to examine whether the country will be able to achieve its long-term development vision of reaching middle income in the next 20–25 years, different fertility decline and economic growth assumptions were made. The assumption that envisions growing by the current GDP growth rate of 10.1% annually for the next 25 years will help the country achieve its long-term vision if complemented by a decline in fertility rate to 2.1 by 2035. This suggests the integration of population variables into development activities, above and beyond girls' education, women empowerment and urbanization. A massive family planning program should also follow these other development endeavors to achieve a more than 60% contraceptive use rate by 2035.

14.7.3 Population Projection

Projecting the Ethiopian population is a very difficult task, trying to predict the unpredictable as the 2007 census surprised us all. However, efforts have been made to project the population using different fertility decline scenarios; accordingly, it was found out that the Ethiopian population will continue to grow even if the most ambitious fertility reduction target (TFR=2.1) is set for the year 2035. This is because of the in-built population momentum which is the result of the high current fertility in the country (TFR 5.4). A close look at the characteristics of the Ethiopian women with high fertility reveals that those who live in rural areas, who are poor and have primary or no education, are the ones with high fertility. This therefore suggests that, to bring a decline in fertility, programs should target these groups. However, without empowering women economically and educating them; efforts to lower fertility will be unsuccessful.

14.7.4 Education and Health Sector Development

Population growth and its implication in the education and health sectors were also worth considering. The need for human resources and expenditure in terms of services is different in the two population scenarios, leaving the country with huge investment if population is left uncontrolled. It will be important for policy makers to connect and observe this long-term vision of reaching the middle income with improvements in the other social sectors as the increase in GDP per capita by itself doesn't show the distribution of wealth and improvements in indicators such as the Human Poverty Index (HPI), Human Development Index (HDI), etc. as defined by UNDP.

14.7.5 Family Planning Expenditure

To respond to the growing demand for contraceptives because of increased focus for family planning services or as a result of girls' education and women empowerment, the country has to be ready to invest from \$35 to \$50 million US annually starting from the current year (2010). The country has to reconsider the current policy of providing family planning services free of charge and start charging some fee in cities such as Addis Ababa where CPR has reached more than 60% and where there is more than 40 years of family planning services by NGOs. It will be wise to start in a phased approach to include other major urban centers later and expand to more areas as necessary. Encouraging the private sector for a higher involvement in the provision of family planning services is also one strategy the country cannot help but consider immediately. With the growth in economy, a middle class who will be ready to pay for quality services at private health facilities will emerge. Therefore, the role of the private for profit sector will be enormous; without their involvement sustainability of efforts will be questionable.

14.7.6 Focus on Long-Acting Family Planning Methods

The mix of methods in the country is heavily skewed towards short acting methods such as injectables and pills. Anecdotal evidences show that there are women who take injectables for more than 6 years tirelessly. Injectables as a dominant method in the Ethiopian method mix has also emerged as an expensive method to provide partly because the women have to come four times to the facilities in a year – demanding the providers' time, and partly because Ethiopian women who want to limit and space the number of their children are provided with this method mainly. The second costly method in the Ethiopian family planning program, the implanon, also has become the choice of the Ministry of Health because it can easily be administered. However these two methods will have heavy cost implications

on the family planning expenditure of the country. Therefore, it will be rational to consider promoting IUCD which is the cheapest method by removing demand and providers-related barriers in the long run.

References

- Central Statistical Authority (CSA). (1993). *The 1990 National Family and Fertility Survey Report*. Addis Ababa, Population Analysis and Studies Center.
- Central Statistical Authority (CSA) and ORC Macro. (2001). *Ethiopia Demographic and Health Survey 2000*. Addis Ababa and Calverton, Maryland, CSA and ORC Macro.
- Central Statistical Agency (CSA) and ORC Macro. (2006). *Ethiopia Demographic and Health Survey 2005*. Addis Ababa, Ethiopia and Calverton, Maryland, CSA and Macro.
- Central Statistical Agency (2010). The 2007 Population and Housing Census of Ethiopia. National Statistical Report, Office of the Population Census Commission, Addis Ababa, July.
- Federal Ministry of Health. (MoH) (2005). *Health Sector Development Program III, 2005*, Addis Ababa.
- Federal Ministry of Health. (MoH) (2006). National Reproductive Health Strategy 2006–2015, Addis Ababa.
- Federal Ministry of Health. (MoH) (2007). *Health Extension Program in Ethiopia, PROFILE*. Addis Ababa, Ethiopia, Health Extension and Education Center.
- Futures Institute (2010). Spectrum Version 3.45, Policy Modeling System, A System To Support Policy Development And Planning For Improved Health.
- Ministry of Finance and Economic Development (MoFED). (2001). EFY, GDP update data <http://www.mofed.gov.et/index>, Last Updated on Tuesday, 12 January 2010.
- Ministry of Finance and Economic Development (MoFED). (2006). Ethiopia: Building on Progress, *A Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005/2006–2009/2010)*.
- National Bank of Ethiopia. (2008). Annual Report 2007.2008, Addis Ababa.
- Stover, J., Heaton, L., and Ross, J., Futures Group. (2006). FamPlan, Version 4, A Computer Program for Projecting Family Planning Requirements, Spectrum System of Policy Models.
- The Transitional Government of Ethiopia. (1993a). *National Population Policy of Ethiopia*, April 1993, Addis Ababa.
- The Transitional Government of Ethiopia. (1993b). *Health Policy of Ethiopia*, 1993.
- The Transitional Government of Ethiopia. (1995). *The Constitution of The Federal Democratic Republic of Ethiopia*, 1995.
- United Nations Development Programme. (UNDP) (2009). *Human Development Report 2009*.
- United Nations, World Population Prospects. (2009). The 2008 Revision, Population Data Base. <http://esa.un.org/unpp>
- USAID/Health Policy Initiative (HPI), 2009, Family Planning Effort Scores, Unpublished document.
- World Bank. (2010). World Bank Development Indicators. <http://publications.worldbank.org/>. Accessed on March, 2010.

Chapter 15

The National Population Policy (NPP) of Ethiopia: Achievements, Challenges and Lessons Learned, 1993–2010

Assefa Hailemariam, Solomon Alayu, and Charles Teller

Abstract This chapter assesses the implementation of the 1993 National Population Policy (NPP) of Ethiopia. Policy documents, censuses, survey results, research findings, development plans and program reports are used as sources of data in writing the chapter. It is shown that considerable progress has been made in the areas of reproductive health service delivery, population data collection and research, training and population information, education and communication. The population growth rate declined from 2.9% during the intercensal period 1984–1994 to 2.6% during the period 1994–2007; total fertility rate declined from 6.4 children per woman in 1990 to 5.4 in 2005; contraceptive prevalence (CPR) increased from less than 5% in 1990 to about 15% in 2005; infant mortality (IMR) decreased from 97/1,000 in 2000 to 77/1,000 in 2005; and maternal mortality declined from over 1,000 deaths per 100,000 live births in the late 1980s and early 1990s to 871 in 2000 and it further declined to 673 in 2005. Moreover, steps were taken to remove all legal and customary practices against the social, economic and reproductive health rights of women and legislative measures were designed that are instrumental in eradicating all harmful traditional practices. The failure to establish the National Population Council, absence of legally defined structure at regional level, weak coordination and institutional arrangements, little or no monitoring and evaluation system, and lack of a comprehensive population program are some of the problems that have hindered the enhanced implementation of the policy. Therefore, renewed commitment of policy and decision makers is required to establish these needed coordinating mechanisms for implementing the policy.

Keywords Fertility · Mortality · Early marriage · Gender equality · Evaluation · Institutional coordination

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15.1 Introduction

Population dynamics had not been recognized as an important factor of the development process during the Imperial and Military regimes in Ethiopia. Until the early 1990s, development plans had been formulated and goals were set in the absence of a virtual demographic vacuum (Assefa and Seyoum, 1993). This was partly due to absence of comprehensive demographic data and partly due to ignorance and ideology¹ among policymakers of the interrelationship between population and development variables.

However, some appreciation of the implications of population dynamics on socio-economic development began to emerge in the 1980s. A number of factors contributed to this change of attitude among officials. Increased research findings drew public attention to issues of resource imbalance, food in security and population pressure (DTRC, 1988; ONCCP, 1989, 1990; Asmerom, 1990). The first ever census of 1984 indicated that the country's long-term perspective plan within which a series of medium and long-term development plan were included had been based on a population which was 9 million less than the actual enumerated figure of 39,860,572 (TGE, 1993). The frequent food shortages that the country was facing suggested the imbalance between population numbers and food production and availability.

At the international level, Ethiopia adopted various programs of action, such as the 1984 Kilimanjaro Program of Action (KPA) at the Second African Population Conference; the Mexico City Population Conference, 1984, and the Dakar Ngoro Declaration (DND) at the Third African Population Conference in Dakar, 1992, among others (MoFED 2008b). The central focus and consensus of all these programs of action as appreciation of the interrelationships between population and development and the integration of population variables into development plans, strategies and policies. These events forced the Military Government of Mengistu Hailemariam to change attitude and draft a population policy in 1988. However, the policy was never promulgated and the Government was overthrown, and EPRDF took over and set up a Transitional Government in 1991. This Transitional Government realized the rapid rate at which the country's population was growing would have implication on the country's development effort, and thus formulated and adopted an explicit national population policy in 1993.

15.2 The Policy (NPP) and Its Formulation

15.2.1 *The 1993 Policy Development and Goal*

Population policies can be defined as direct or indirect measures taken in the interest of national survival and welfare by public authorities in order to address the

¹The Marxist view that population control is unnecessary

imbalances between demographic changes and other social, economic, and political goals (May, 2005; Lucas, 2003). There are direct and indirect population policies intended to influence elements of population dynamics. Direct policies are policies designed to affect population variables directly (improving access and quality of family planning programs, encouraging immigration), while indirect policies are those that influence population variables indirectly (for example, increasing access to secondary education). Population policies can be explicit or implicit. An explicit population policy is one associated with the stated intention of a national government to influence population events whereas an implicit policy is one that is unstated because of fear of political controversy (Stamper, 1974; May, 2005). A country can adopt an implicit or explicit population policy to tackle its population problem.

Ethiopia has adopted an explicit population policy in April 1993, which recognized the links and interrelationships between population, resources, the environment and development. A committee of experts drawn from various sector ministries, academic institutions, non-governmental organizations and the private sector was formed by the Prime Minister of the Transitional Government of Ethiopia in late 1992 with the task of drafting the population policy. The committee organized several consultative meetings, seminars and workshops in which papers were presented on issues related to population and development. The committee also reviewed research findings and workshop proceedings on population and development interrelationships, the draft population policy developed by the Military Government as well as population policies and programs of other African countries (e.g., Tunisia, Ghana, Egypt and Tanzania). These activities guided the formulation of the NPP.

The goal of the 1993 NPP was *to harmonize the rate of population growth with that of the economy*, to coordinate and influence other strategies and programs that ensure sustainable development of the people and to promote gender equality and the empowerment of women. Its demographic objectives include reducing total fertility rate from 7.7 children per woman to 4; achieving a corresponding increase in modern contraceptive prevalence rate (CPR) from less than 5 to 44% of married women of reproductive age; and reducing infant, child, and maternal mortality.

The policy provided guidelines that determined priorities in population and development programs that should be designed to strengthen the preparation and implementation of the socio-economic development effort of the country. In addition, the policy gave directions for addressing population issues in an integrated manner. It thus recognized the relationships between population dynamics and quality of life on one hand, and environmental protection and sustainable development on the other.

The NPP identified issues that require priority attention in its implementation, which included strengthening domestic capacity for population data collection, research and training and the expansion of information, education, communication and social mobilization, as well as improving access to and quality of service delivery, addressing legal issues regarding the advertising and distribution of contraception and the minimum age at marriage, among others.

15.2.2 Mechanisms for Policy Implementation

The national population policy identified key actions, and provided the overall direction in which the country's population outcomes are to be achieved. The policy calls for the development of an operational plan of action to implement activities in support of the policy strategies; the establishment of the National Population Council (NPC), composed of sector ministries, academic institutions, NGOs and the private sector, and a national office within the office of the prime minister.

The NPC is supposed to be accountable to the council of ministers and expected to develop specific policies and programs pertaining to population and development to be undertaken in the various sectors of the economy; to define a legal framework within which population and development related information are to be accessible to the general population by various governmental and non-governmental groups; and to review short, medium and long term action plans for policy implementation (TGE, 1993). The duties and responsibilities of the national office of population, on the other hand, included serving the NPC as its secretariat, coordinating population related activities with other ministries in the country and providing guidance for various departments' activities in policy implementation.

The adoption of the NPP opened a new chapter, in the history of Ethiopia, catalyzing policy dialogue on ways to strengthen implementation and to promote further progress towards achieving population and development outcomes. However, policy implementation is not a linear process; it is dynamic and can change over time along with the realities on the ground.

In the process of implementation of the NPP, successes were registered in some areas, and in others, constraints were encountered.

15.3 Objectives and Methods

The purpose of this chapter is to review the progress made towards achieving the set objectives of the policy, assess the successes registered, identify the major constraints and challenges encountered and the lessons learned in the implementation of the national population policy and to suggest strategies to be taken for future better implementation of the policy. Results of the 1984, 1994 and 2007 National Population and Housing Censuses (CSA 1991; 1999a; 2010), the 1990 National Family and Fertility Survey (CSA, 1993), and the 2000 and 2005 Ethiopia Demographic and Health Surveys were used (CSA and ORC Macro, 2001, 2006). Moreover, policy documents, such as PASDEP (MoFED, 2006, 2007), research findings and evaluations (MoFED, 2003; Assefa and Sisay, 2003; Teller and Assefa, 2009) and other relevant materials (e.g., Annual Progress Reports) Reports for Ethiopia on Progress towards Achieving the Millennium Development Goals: Successes, Challenges and Prospects (MoFED, 2008a, b) were reviewed.

15.4 Achievements

This section addresses the progress made in implementing the four priority strategic areas identified for action in order to achieve the policy objectives, namely, (i) Reproductive Health Service Delivery; (ii) Population Research and Data Collection; (iii) Expansion and Strengthening of Domestic Capacity for Training in Population; and (iv) Expansion of Information, Education and Communication Activities and Social Mobilization. This is followed by a review of the achievements of the demographic targets.

15.4.1 Reproductive Health Service Delivery

15.4.1.1 Increase in Family Planning and RH Services

At the time the policy was launched (1993), there was no government health facility providing family planning services in the country. However, after the policy was launched, all government hospitals as well other government health service delivery points began providing family planning services. The quality was low, due to lack of qualified staff, shortage of contraceptive supplies and the like.

1. At the time the policy was launched, there was only one NGO, the Ethiopian Family Guidance Association of Ethiopia (FGAE, 2000) providing family planning services. However, its service was limited to one hospital in Addis Ababa, St. Paul's Hospital. Even here, family planning services were provided only once a week for a couple of hours. However, the number of NGOs providing family planning services increased considerably following the launching of the policy. The NPP called for the participation of GOs, NGOs and the private sector in the implementation of the policy. Service provision is one major area in policy implementation where there has been active participation as every year more and more NGOs joined the reproductive health field and began providing clinical as well as non-clinical methods of family planning.
2. A recent survey carried out in large areas of broad government-NGO collaborations in all four major regions of the country showed a rise in CPR from 4% in 1990 to around 28% by 2009 (JSI, 2009)

15.4.1.2 Service Delivery Approaches

There was a belief that family planning methods (clinical or non-clinical) must be provided by a doctor and clients must be visited by a doctor before obtaining the service. This suggests that those who sought services could not get the service due to lack of access to services other than in St. Paul's Hospital in Addis Ababa. Other approaches of providing services such as community based, market place and other approaches were non-existent. After the policy was launched such services have

been introduced and access to family planning service has improved considerably. In addition, method mix has also improved as different methods were made available such as voluntary surgical sterilization, intrauterine device, implants, pills, condoms and other barrier methods are made available (Mengistu et al., 2006).

In general, Ethiopia has made considerable progress in addressing all the essential elements of RH proposed in the ICPD Program of Action (MoFED, 2008b). The country adopted the ICPD definition of Reproductive Health to mean a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity in all matters related to the reproductive system and its functions and processes.

15.4.2 Expansion and Strengthening of Domestic Capacity for Training in Population

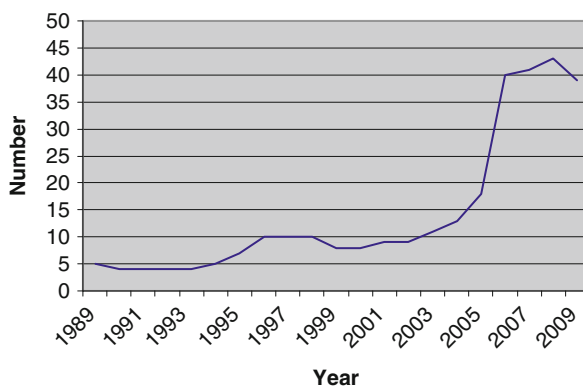
The only institute for training in population studies was the then Demographic Training and Research Center (DTRC), at Addis Ababa University, established in 1982 (DTRC, 1998). There were two or three graduates every year from this center in the late 1980s and early 1990s. Since 1993, however, the Center was strengthened in terms of staffing as well as teaching materials though the financial and technical support of UNFPA.

Moreover, international collaboration and support for training and research in the areas of population also improved after the policy was launched. For example, the collaboration between the Demographic Training and Research Center at the Addis Ababa University and the Population Studies and Training Center at Brown University, which resulted in the training of five PhDs, is a prime example. There have also been similar collaborations with other international institutions such as the Italian Cooperation (for the analysis of the 1994 Population and Housing Census Data) that supported research and training in population studies.

There were also more than half a dozen Ethiopians trained in population studies at the PhD level abroad with UNFPA assistance and other bilateral support. In our opinion, the scholarships and other support provided to these trainees were to support the GOE in the implementation of the NPP. However, the brain drain has affected most of those trained.

Thus, the effort made to strengthen domestic capacity for training and research has assisted local training institutions to increase their intake/enrolment to meet the increasing demand for trained personnel in population and development. For instance, as can be seen from Fig. 15.1, DTRC increased its enrolment after the policy was launched and the number of graduates considerably increased since then. Moreover, more training opportunities were created in the areas of population and reproductive health in other local institutions of higher learning (Jimma, Haramaya, Hawassa, Dilla, Arbaminich and Mekele universities), and at the Institute of Gender Studies at the Addis Ababa University. A major spike occurred in the most recent (2005–2009) period.

Fig. 15.1 Trends in graduates with advanced degrees in population studies



The effort made to build domestic capacity for training and research has also helped the provision of several in-service trainings at the regional level and contributed to building the capacity of the regional and zonal offices in managing population activities. Short-term trainings given to federal and regional medium level experts include those in:

- Data management;
- Incorporating population education in the school curricula;
- Operations research;
- Integrating population and development planning;
- Management of population programs;
- Monitoring and evaluation of population, health and nutrition programs;
- Population Communication;
- Population and Development, Reproductive health, Gender;
- Population and Environment; and
- Adolescent Reproductive Health.

15.4.3 Population Research and Data Collection

The NPP emphasized the importance of reliable and timely demographic and socio-economic data for development planning and the monitoring and evaluation of development programs. In this regard, considerable effort was made in collecting demographic and socio-economic data.

Ethiopia is one of the countries that did not originally participate in any one of the major KAP-type surveys, such as the World Fertility Survey and the Demographic and Health Surveys (DHS) prior to 2000. Consequently, there was a total lack of any internationally comparable demographic data. However, immediately after the launching of the policy, preparatory steps (such as the formation of a national technical committee) were taken for conducting DHS and in 2000,

the first ever demographic survey was conducted. This was followed by the second DHS in 2005 and a third planned for 2011. The two rounds of the DHS have produced key demographic and health information needed for planning and programming and monitoring and evaluation of various development policies and programs.

Furthermore, several large-scale national surveys in the area of population and reproductive health continue to be conducted by the Central Statistical Agency (CSA) and other research organizations, including the Demographic Training and Research Center (now the Center of Population Studies) and the Community Health Department (now School of Public Health) of the Addis Ababa University. The CSA examples include the 2000 and 2005 DHS, the 1994 and 2007 population and housing censuses (and their in-depth analyses), national labor force surveys in 1999 and 2005, and urban labor forces surveys every 2 years since 2003; DTRC has also carried out large scale demographic and community surveys in the SNNP Region in 1997 and a migration, health and gender survey in 5 major regions in 1998; and NGOs such as the Population Council, Pathfinder, Family Health International, DKT, Population Media Center and John Snow International have carried out large-scale surveys and evaluations of FP/RH programs. Both government health and education sectors have made significant improvements in decentralized sectoral information systems that have benefitted national and local area planning (PRB, 2009). The availability of these data combined with the increased number of trained personnel in the population-development area has assisted the expansion of research undertakings in the country.

The need for a vital registration system was clearly stated in the 1993 policy document. Although due emphasis was given in the NPP Plan of Action (1993/1994), it has not yet been established. There was a pilot vital registration introduced in the mid-1990s, and operations research done in the mid-2000s (UNICEF, 2008). Recently, there has been a lot of discussion in parliament, workshops and other meeting on the issue, the setting up of a committee in parliament to work on its legal basis, and now, finally, the preparation of a decree establishing a vital registration system.

15.4.4 Expansion of Information, Education and Communication Activities and Social Mobilization

Since the adoption of the NPP several programs have been put in place to promote the integration of population issues into the overall development plan of the country both at national and regional levels.

As a result, population is now considered as major factor in achieving sustainable development and poverty alleviation in the country. Systematic efforts made in the IEC areas in the past have also resulted in increased awareness of reproductive health issues, including STDs and HIV/AIDS. Despite this high level of

awareness among the general population, continued effort has also been made in the area of advocacy to build consensus and thereby foster a favorable climate. In this way it would motivate top leaders, policymakers, planners and opinion leaders to keep population issues at the top of the national development agenda, advance the implementation of the population policy and programs more effectively; promote their sustainability, and thus lead to the achievement of the goal of the population policy.

In order to facilitate a coordinated effort, an IEC/Advocacy Strategy was developed in 1997. The main objectives of this strategy were:

- (i) To create an informed society, fully conversant with the interrelationships between population growth and socio-economic development at all levels and mobilize them to support and sustain population programs.
- (ii) To secure and motivate broad based political and social groups in order to create an environment conducive to population and development activities at national and regional levels.

This has created an enabling environment to produce and disseminate IEC/Advocacy materials and for organizing and conducting seminars, workshops and meetings dealing with the broad issue of population and development. A number of seminars, workshop and meetings in which policymakers at regional and federal levels as well as parliamentarians have participated have been organized and conducted by the National Population Office, the regional offices of population as well as the sector ministries. Moreover, a number of advocacy and awareness creation activities using the media have also been undertaken. For example, the Population Media Center (PMC) has produced and aired 740 episodes of radio serial drama, several radio magazine programs and talk shows, more than ten publications, and conducted numerous workshops addressing various issues of reproductive health, family planning, HIV/AIDS and harmful practices such as female genital mutilation, early marriage and abduction among others (PMC, 2006).

These activities appear to have contributed to change on the attitude and behavior of the general population on various issues, such as the value of children (the desire for more children), family planning and RH and HIV/AIDS, among others. These activities might have also influenced policymakers (e.g., the change in the legal age at marriage and law enforcement relating to it as well as marriage by abduction, FGM, etc).

Regarding the age at marriage, it is being strongly advocated in schools and communities at kebele and woreda levels in Amhara and Tigray regions, where early marriage is common. There is also enforcement of the law (i.e., legal measures being taken on those who marry their daughters early).

In addition to the above four major areas of policy implementation, considerable effort has also been made in other areas, such as removing legal and customary barriers against economic and social rights of women. In this regard, Women's Policy,

whose major objective is to protect the rights of women and girls, was issued and a Women's Affairs Office was established at the Prime Ministers Office to coordinate the implementation of the policy. Moreover, Women's Affairs Departments were formed in the federal ministries and also at regional level to facilitate the implementation of the policy. Legal measures have also been taken to ensure that women are given proper treatment through affirmative action. Consequently, female participation in the educational system has been increasing; the number of women assuming management roles in public and private sectors has been rising. Moreover, more and more women parliamentarians and women officials are coming to the forefront.

15.5 Achievements of Demographic Targets

15.5.1 Factors Contributing to Population Growth

One of the major objectives of the population policy is to reduce fertility, which is the most important factor for high population growth in Ethiopia. Fertility, has been decreasing at slower rate compared to mortality the total fertility rate (TFR) decreased from 6.4 children per woman in 1990 to 5.4 in 2005. Contraceptive prevalence rate increased from 4.8% in 1990 to 14.7% in 2005. Infant mortality rate decreased from 105/1,000 in 1990 to 77/1,000 in 2005, Under 5 mortality rate decreased from 199/1,000 in 1990 to 123/1,000 in 2005 and maternal mortality ratio decreased from 871/100,000 in 2000 to 673/100,000 in 2005. Population growth rate decreased from 2.9% during the 1984–1994 intercensal period to 2.6% for the intercensal period 1994–2007. A slight change in the age structure has also occurred. For instance, the proportion of children under 15 decreased from 45.4% in 1994 to 45.0% in 2007.

The implications of such rapid rate of population growth is a youthful population with a youth dependency burden, which increases consumption of basic goods and services and reduces the capacity for domestic savings, thereby negatively affect investment and economic growth.

The other significant demographic consequence of a youthful population is its fertility potential. The level of fertility, which is already very high, is further promoted by annual increases in the number of women entering the reproductive age group (15–49 years). The current high growth rate puts pressure on natural resources of land and increase demands for basic services including education and health.

The rapid rate of population growth in poor countries such as Ethiopia means continuous expansion of the labor force, which exacerbate the exiting problems of open unemployment, underemployment and poverty in the population. This is because the dynamic force of population growth continues to release large numbers of new job seekers into the saturated labor market each year, (MoFED, 2008a). An analysis of the labor force survey data shows that unemployment is an urban phenomenon. In Ethiopia, Urban unemployment slightly decreased from 26% in

1999 to 20.6% in 2005, and has shown almost no change (20.4%) in 2009 (CSA, 1999b; 2009; see Chapter 4). The other major general objective of the policy was the reduction of rural-urban migration. During 1994–1999, the percentage of migration patterns that were rural to urban, decreased slightly from 24.8 to 23.5%, but since then we have no reliable national estimate (see Chapter 9, and CSA, 1999a). Spatial distribution of population is still uneven: about 70% of the population settled in about 30% of the total land area, and per capita agricultural land for more than 60% of the population is less than 1 ha. (IFPRI and CSA, 2006).

15.5.2 Other Targets

Among factors contributing a lot for reduction in fertility in this country are the amendments (2005) in the improved Family Law which increased the minimum age at first marriage for both sexes to 18 years and significant improvement of girls education at all levels, particularly at elementary and secondary education. Thus improving women's status in the population are other factors to be considered for improvements in fertility reduction. However, *fertility is still high in Ethiopia compared to other countries in Africa* (see Chapter 2).

The changes in conserving and developing environment resources including land and forest are not balanced with that of population growth. The carrying capacity of the environment has not improved, and as a result a high man – land ratio and disproportionately high consumption of forest resources compared to replenishing, protecting and conservation efforts (MOARD, 2004). Crude Density of Population, in Ethiopia, increased from 49 persons per Km² in 1993 to 71 in 2009 (CSA, 2009), while agricultural density (a ratio of rural population to cultivated land area per hectare) increased from 5.2 persons per hectare in 1995/1996 to 7.1 persons in 1999/2000 (CSA 1996; 2002). Forest coverage is also not more than 3.6% (Ministry of Agriculture and Rural Development, 2004).

Improvements of girls education at all levels was one of the specific objectives of the NPP. Accordingly, significant changes have been registered in the policy implementation period, particularly at elementary and secondary levels of education. Participation of girls in primary school education increased from 20% in 1993 to 90.5% in 2007/2008; and in secondary school education, it increased from 7.1% in 1993 to 22% in 2007/2008.

In summary, we present in Table 15.1 the achievements made as a result of both the NPP as well as other development policies, strategies and programs such as the Health Policy (1994), the Education and Training Policy (1994), and Strategies, including the Reproductive Health, Adolescent and Youth Reproductive Health Strategy, PASDEP (2005) and Sector Development Programs (such as the Health Sector Development Programs HSDPs (HSDP-I (1997/8–2001/02), HSDP-II (2002–2004/05) and HSDP-III (2005/06–2009/10), the Education Sector Development Programs, etc).

Table 15.1 Summary of progress in implementation of the national population policy

Specific Objectives	Degree of Progress
1. Reducing the 1990 total fertility rate of 6.4 children per woman to approximately 4.0 by the year 2015	<ul style="list-style-type: none"> ● Reduced TFR to 5.4 by 2005. The 2007 Census results are not released yet and there are no nationally representative surveys that allow the estimation of fertility since then
2. Increasing the 1990 prevalence of modern contraceptive use from 4.0 to 44% by the year 2015	<ul style="list-style-type: none"> ● Increased CPR to 14.7% by 2005 (no nationally representative data for 2005–2010)
3. Reducing maternal, infant and child morbidity and mortality rates as well as promoting the level of general welfare of the population	<ul style="list-style-type: none"> ● Decreased IMR from 106/1,000 in 1990 to 77/1,000 in 2005 (no reliable data available for 2005–2010) <ul style="list-style-type: none"> ● Under 5 mortality reduced from 210/1,000 in 1990 to 123/1,000 in 2005 ● MMR decreased from 871/100,000 in 2000 to 673/100,000 in 2005
4. Significantly increasing female participation at all levels of the education system	<ul style="list-style-type: none"> ● Female participation in elementary education increased from 20% in 1993 to 90% in 2007/2008, and in secondary education from 7.1% in 1993 to 22% during the same period
5. Removing all legal and customary practices militating against the full enjoyment of economic and social rights of women including the full enjoyment of property right and access to gainful employment	<ul style="list-style-type: none"> ● Revised Family Law (2005), in which age at first marriage for both sexes set to be 18 years <ul style="list-style-type: none"> ● Criminal codes amended ● Guidelines for Abortion and other legal and customary practices removed
6. Ensuring spatially balanced population distribution patterns with a view to maintaining environmental security and extending the scope of development activities	<ul style="list-style-type: none"> ● Proportion of urban population to the total population has changed from 13.7% in 1994 to 16.2% in 2007 <ul style="list-style-type: none"> ● Agricultural density of population increased from 5.2 persons per hectare in 1995/2006 to 7.1 persons in 1999/2000 ● Rural-urban migration decreased from 30% in 1984 to 24.8% in 1994 and further decreased to 23.5% in 1999
7. Improving productivity in agriculture and introducing off-farm non agricultural activities for the purpose of employment diversification	<ul style="list-style-type: none"> ● The share of agriculture is reduced to 43% in 2007/2008, but population engaged in agricultural activities is about 84%
8. Mounting an effective country wide population information and education program addressing issues pertaining to small family size and its relationships with human welfare and environmental security	<ul style="list-style-type: none"> ● Formulated National Population IEC / Advocacy Strategy; based on which better awareness, knowledge created in the area of small family size and the interrelationships between population and development. Better support and commitment enhanced in population and development

Sources: CSA and ORC Macro (2001).

CSA and ORC Macro (2006).

CSA (1996)

CSA (2010)

MoE (1996)

15.6 Progress Made in the Population Components of PASDEP and MDGs

15.6.1 PASDEP

Population policy, by its very nature, is multi-sectoral and its translation into action also requires a coordinated effort, including integrating population variables/issues into all sectoral development programs and at all levels. In this regard, the first attempt in integrating population variables/issues into sectoral and national development plans was made meaningfully in the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) formulated for the period of 2005/2006 to 2009/2010. Basically PASDEP is intended at the minimum to achieve the MDGs targets (MoFED, 2006).

In relation to balancing population and development, positive changes have been observed in the following key development indicators (see references in Table 15.1 above):

1. Per capita annual GDP growth increased from 2.3% during 1992/2003–2003/2004 to 7.2% in 2008/2009,
2. Overall unemployment rate decreased from 8% in 1999 to 5% in 2005,
3. Poverty decreased from 45.5% in 1995/2006 to 30.6% in 2007/2008, and
4. Food poverty decreased from 49.5% in 1995/1996 to 33.5% in 2006/2007.

In the PASDEP, rapid population growth is considered as one of the development challenges. *Creating the balance between economic development and population growth was one of the eight pillar strategies of PASDEP (MoFED, 2006).*

15.6.2 The MDGs

The 1994 International Conference on Population and Development and the Program of Action served as a precursor to the social and population-related MDGs, as most of them are directly or indirectly related to population issues in development (MoFED, 2008b). The MDGs aim at achieving the following targets: reduction in poverty and under nutrition (MDG1); improvements in health, including reduction in maternal, infant and childhood mortality and the prevention of communicable diseases such as HIV/AIDS, tuberculosis, malaria, etc. (MDGs 4,5,6); universal primary education (MDG2); gender and development (MDG3); access to safe water and basic sanitation (MDG7, targets 10 and 11); provision of employment opportunities (MDG8, target 16); rural and urban development (MDG7, target 11); rural and urban development (MDG7, target 11); and the overall sustainable utilization of available resources for development (MDG7, target 9).

Current progress and expected progress made in achieving the 2015 MDG targets, in the context of Ethiopia, according to MoFED, are the following (MoFED, 2008a):

- Reduce Poverty Head Count from 48% in 1990 to 22% in 2015: progress up until 2008/2009 was 30.6%,
- Reduce extreme hunger from 67% in 1990 to 34% in 2015: progress made up until 2005 was 47%,
- Increase Gross Primary Enrolment from 3% in 1990 to 100% in 2015: progress up until 2008/2009 was 100%,
- Improve ratio of girls to boys in primary school from 0.65 in 1990 to 1.0 in 2015: the progress up until 2008/2009 was 0.96,
- Decrease Under-Five mortality rate from 210/1,000 in 1990 to 120/1,000 in 2015: the progress up until 2005 was 123/1,000, and
- Reduce Maternal Mortality Ratio from 670 to 392/100,000 in 2015: the progress up until 2005 was 673.

These last two indicators are explicitly demographic, with the U5MR target likely to be achieved by the year 2015, but the MMR target is unlikely to be realized.

15.7 Constraints

What are the major challenges that affected and impeded effective implementation of the NPP?

15.7.1 Lack of Legal Basis

- The policy was formulated and launched, but there was no legal basis such as a proclamation for the establishment of the various offices, including the National Office of Population, NOP, at the Office of the Prime Minister as well as the regional offices. This has affected the allocation of resources (financial, material and human) both at Federal and regional levels.
- Although the duties and responsibilities of NOP and its regional counterparts are clearly stated in the policy document, these offices were not given the legally defined structure with which to operate. This seems to have seriously hampered the coordinating and executing role of the offices at national as well as regional levels.
- At the regional level, some regions (Afar, Benshangul-Gumuz, Dire Dawa, Gambela and Harari) have established population offices that are accountable to the Regional Council, while in others (Amhara, Oromia, SNNPR, Somalia and Tigray), the offices are accountable to the regional bureau of Finance and Economic Development, a reflection of the structure at the federal level.

15.7.2 Failure to Establish the National Population Council (NPC)

As stated in the NPP document, the NPC was supposed to develop specific policies and programs pertaining to population and development to be undertaken in the various sectors and to create conditions conducive for inter-sectoral collaboration, and to provide technical and programmatic guidelines for the implementation of the NPP. However, since the NPC was never established, the National Office of Population, which was within the office of the Prime Minister but later moved to the Ministry of Finance and Economic Development, was not able to prepare such guidelines. Nevertheless, NOP did prepare a five-year plan of action for the implementation of the policy in early 1994, but this was not effectively executed.

15.7.3 Weak Coordination and Institutional Arrangements

Coordination of policy implementation activities across sectors has been poor and the down-line leadership skills have not been adequate to guide and direct the policy implementation activities.

The institutional arrangement for the implementation of the policy envisaged in the policy document, the purpose of which was to give more strength and power to implement the policy has not been operational. As stated above, the National Population Council, which was supposed to have the overall responsibility to guide the implementation of the population policy and programs, was not established. At regional levels, some regions could not establish population councils at regional and zonal levels, and woreda level population committees have not been established. Thus, the institutional arrangements in place for the purpose of policy implementation could not play the coordination role that was expected nor bring different actors together because the operational environment has been far from ideal.

15.7.3.1 Weak or Non-existent Monitoring and Evaluation Framework

The NPP did not reach the expected level in meeting its objectives partly due to the total absence or weakness of monitoring and evaluation strategies to measure the impact of interventions.

15.7.3.2 Lack of a Comprehensive Population Program

Although the policy clearly stated that comprehensive and multisectoral strategies were needed for its implementation, these have not occurred in a coordinated way. A few sectors and regions have attempted such coordination with varying degrees of progress, but overall the country has not been able to pursue the commitment and authority sufficiently for the successful implementation of the policy. These constraints are now being addressed in the planning of the population and development component of the new five-year (2011–2015) development plan.

15.7.4 Budgetary Constraints

Whereas major international agencies, such as UNFPA, USAID, Packard Foundation and various other I/NGOs have been supporting the NPP, budget cuts and delays in the release of funds have severely affected program implementation at federal as well as regional levels. Moreover, limited capacity in the utilization of funds has led to reduction in allocations of funds for population program implementation.

15.8 Conclusions and Policy Implications

15.8.1 Balancing the Progress and the Policy Implementation Constraints

The major population issues for which the NPP and related development policies and programs have made some progress include: annual population growth rate reduction from 2.9 to 2.6% and the population distribution in urban areas increased from 13.5% in 1994 to 16.1%. However, population and agricultural densities have increased considerably and thus rural-urban migration pattern, which had declined between 1984 to 1999, is apparently on the rise again, especially temporary urban-ward migration (see [Chapter 9](#)).

Fertility, which is the major responsible factor for high population growth in Ethiopia, is decreasing at a somewhat slower rate compared to mortality. Both infant and under five mortality rates decreased significantly, and maternal mortality has decreased, but not in a statistically significant way.

Though there has been considerable progress in the population situation in the country, there is still a long way to go to reach the main NPP goal of harmonizing the rate of population growth with that of socio-economic development. The recent intercensal (1994–2007) rate of growth (2.6%) suggests that the population of Ethiopia is still growing rapidly and might double its current size of 80 million within a quarter of a century. The share of the population under age 15 years is still high at 45%, which is symptomatic of high age dependency and future rapid growth of the population, even if fertility is reduced to replacement level today. The uneven spatial distribution of the population and high density will continue putting increasing pressure on the environment.

Absence of effective coordinating institutions, lack of a Joint Plan of Action and Monitoring and Evaluation Framework, inadequate integration of population variables into development planning (until recently) are some of the major reasons for current inadequate implementation status of the NPP.

15.8.2 Recommendations

Based on the above background, the following recommendations are made in order to make the policy implementation more effective and to capture the demographic

bonus as quickly as possible. There needs to be increased commitment in overcoming the constraints in NPP implementation and to reaching the 2015 goals. Appropriate institutional mechanisms/arrangements need to be established (e.g., National Population Council, Regional Population Council, and their Secretariats with the necessary legal framework) to make the policy implementation more effective.

- Enhanced stakeholder capacity to integrate population variables/issues into development planning through training and preparing guidelines for planners to guide the integration of population variables/issues into development planning;
- Concerted efforts to execute the new Population Plan of Action that was developed and a new system for monitoring and evaluation of progress in the implementation of the policy needs to be in place;
- Increased government resource allocation for implementing population/reproductive health programs to make the RH services more sustainable;
- Up-graded skills of junior and middle level experts in data collection and research through short-term and in-service training;
- Strengthened capacity of local training institutions in data collection, management, research and training;
- Minimize the brain drain by strengthening local institutions to offer advanced training (e.g., PhDs) in population and development;
- Minimize Staff turn-over;
- Establish a Vital Registration System, legalize and make functional;
- Establish an integrated Population and Development Database needs through the newly established National Statistical Council (CSA, 2009); and
- Design a systematic population target evaluation component to the overall MoFED M&E system for the new five-year development plan
- Population and Development Research Agenda and conducting Training Needs assessment to coordinate and improve the dissemination and use of the findings and newly established capacity.

In spite of the expanded access to family planning service provision, CPR is still very low compared to many countries in sub-Saharan Africa (see [Chapter 2](#)). Thus, there is need to further expand family planning services and improve the quality of service provision in order to meet the prevailing high unmet need for family planning (unmet need for family planning was 34% in 2005 among married women (CSA and ORC Macro, 2006)). This, combined with reductions in the still high demand for children, might help the country to capture the demographic bonus at faster pace and in large size.

This in, turn, requires intensifying renewed commitment of policy and decision makers to accelerate family planning services, increasing the government share of resources for family planning, promoting the integration of population variables/issues into development planning by all stakeholder at all levels, and establishing institutional mechanisms for effective coordination of policy

implementation. The current status of the policy implementation, therefore, requires renewed commitment of policy and decision makers to accelerate its implementation.

References

- Asmerom, Kidane (1990). *The Economic Demography of Ethiopia (1990)*. Addis Ababa, Addis Ababa University Press.
- Assefa Hailemariam and Seyoum, Gebre Selassie (1993). Background Paper for the Formulation of the Population Policy of Ethiopia, Demographic Training and Research Center, Addis Ababa University.
- Assefa Hailemariam and Sisay Worku (2003). Review of the implementation of the National Population Policy: Proceedings of the National Population Conference to Commemorate the Tenth Anniversary of the Population Policy of Ethiopia. United Nations Economic Commission for Africa, Addis Ababa, July 7–8, 2003.
- Central Statistical Authority (CSA). (1991). *The 1984 Population and Housing Census of Ethiopia: Analytical Report at National Level*, Vol. II. Addis Ababa, Central Statistical Authority.
- Central Statistical Authority. (CSA). (1993). The National Family and Fertility Survey Report, Addis Ababa.
- Central Statistical Authority (CSA). (1999a). *The 1994 Population and Housing Census of Ethiopia*, Vol. II. Analytical Report. Addis Ababa, Ethiopia.
- Central Statistical Authority. (1999b). *National Labor Force Survey, 1999 and 2005*. Addis Ababa, Ethiopia, Federal Democratic Republic of Ethiopia.
- Central Statistical Authority (CSA). (2005). *National Labor Force Survey 2005*. Addis Ababa, Ethiopia, Federal Democratic Republic of Ethiopia.
- Central Statistical Agency. (CSA). (2009). *National Strategy for the Development of Statistics*. Addis Ababa.
- Central Statistical Agency (CSA). (2010). Statistical Tables for the 2007 Population and Housing Census of Ethiopia. Addis Ababa.
- Central Statistical Agency (CSA). and ORC Macro. (2001). *Ethiopian Demographic and Health Survey 2000*. Addis Ababa, Ethiopia and Calverton, NY, Central Statistical Agency and ORC Macro.
- Central Statistical Authority (CSA). and ORC Macro. (2006). *Ethiopian Demographic and Health Survey 2005*. Addis Ababa, Ethiopia and Calverton, Central Statistical Agency and ORC Macro.
- Demographic Training and Research Center (DTRC). (1988). Proceedings of the seminar on development planning and demographic analysis: The case of Ethiopia, Addis Ababa: Addis Ababa University Press.
- Demographic Training and Research Center. (DTRC) (1998). *Tenth Anniversary Symposium*. Addis Ababa, Addis Ababa University.
- Family Guidance Association of Ethiopia. (FGAE) (2000). Thirty four Years of Dedicated Service. Government of Ghana (1969). National Population Policy.
- International Food Policy and Research Institute (IFPRI) and Central Statistical Agency (CSA). (2006). *An Atlas of the Ethiopian Rural Economy*. Washington DC and Addis Ababa.
- John Snow Inc (JSI). (2009). Preliminary Results from the L10K Survey, Powerpoint, Addis Ababa, April.
- Lucas, D. (2003). *Population Policy and Advocacy*. The Australian Demographic & Social Research Institute. ANU, College of Arts and Social Sciences.
- May, J.F. (2005). In Population Policy. Poston, D., Micklin, M., (eds.), *The Handbook of Population*. New York, Springer.

- Mengistu Asnake, Lakachew Walie and Yilma Melkamu. (2006). Improving the Range of Contraceptive Choices in Rural Ethiopia. *Ethiopia Journal Health Development* 20(2):74–78.
- Ministry of Agricultural and Rural Development (MoARD), (2004). A National Strategic Plan for The Biomass Energy Sector, Final Report, Addis Ababa, Ethiopia.
- Ministry of Education. (1996). *Education Statistics Annual Abstract*. Addis Ababa, Ministry of Education.
- Ministry of Education. (2007/8). Education Statistics, (MoE) Annual Abstract–2007/8.
- Ministry of Finance and Economic Development (MoFED). (2006). Ethiopia: Building on Progress, A Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (2005/6–2009/10), Addis Ababa, Ethiopia.
- Ministry of Finance and Economic Development. (MoFED). (2007). Annual Progress Report of PASDEP–2006/7.
- Ministry of Finance and Economic Development. (MoFED). (2008a). Ethiopian Progress Towards achieving the MDGs, 2007/8. Federal Democratic Republic of Ethiopia.
- Ministry of Finance and Economic Development. (MoFED). (2008b). Country Report for the fifteen-year review and assessment report for the implementation of the Dakar/NGOR Declaration and the ICPD Program of Action, MoFED, Addis Ababa, November.
- Ministry of Health. (MoH). (2008). HSDP-III Mid Term Review. Addis Ababa.
- Office of the National Committee for Central Planning. (1990). National workshop on population policy implementation, Addis Ababa, Ethiopia.
- Office of the National Committee for Central Planning. (ONCCP). (1989), Conference on Population Issues in Ethiopia's National Development, Vols I & II, Addis Ababa. Ethiopia.
- Population Reference Bureau (PRB). (2009b). Demographic Data for Development Decisionmaking: Case Studies from Ethiopia and Uganda, April. www.prb.org/pdf09/demographicdecisionmaking.pdf
- Population Media Center. (PMC). (2006). Media and Communication for Social Development, Addis Ababa, December.
- Stamper, M. (1974). Demographic Considerations and Population Policies in Development Planning, A Discussion Paper, New York. The Population Council.
- Teller, C. and Assefa Hailemariam (2009). Impact Evaluations of Population, Health and Food/Nutrition Security Policies in Ethiopia: Institutionalizing their Demand, Production and Use, Paper presented at the Conference on Perspectives on Impact Evaluation, Cairo, April.
- The Transitional Government of Ethiopia (TGE). (1993). National Population Policy of Ethiopia, April 1993, Addis Ababa.
- UNICEF. (2008). Pilot Vital Registration Project, Addis Ababa.

Chapter 16

Barriers to Access and Effective Use of Data and Research for Development Policy in Ethiopia

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Abstract The principle of evidence-based decision-making for development policy and planning is now well accepted, and population data are of critical importance. Some ministries (eg., Health) are even including targets for program managers in the “use of reliable data in 75% of their decisions”. In 2008–2009, four African countries were selected for a study to assess the demand for, access to and use of demographic data for development decision making. In the Ethiopia case study presented here, the authors carried out nearly 100 key informant interviews of decision makers, key advisors, planners and media, at Federal and regional levels, plus follow up dialogue with selected and forthcoming policy advisors. The main finding is that demand for demographic data has increased, with the heightened need for monitoring international (eg, poverty, Cairo conference and MDG) targets and national results-based planning, as well as decentralized and locally empowered planning. However, there is still weak demand by international partners for developing strong and transparent national M&E systems. The demand and supply side barriers to effective use include: limited awareness of the value and type of data available; differing sources of information available on the same indicator (eg., contraceptive prevalence, ante-natal care) with contradictory estimates; old, unrepresentative and non-disaggregated data; research and survey findings not communicated well to policymakers, and skepticism and even mistrust of unexpected demographic statistics. Applied research, rigorous evaluation and data generation and analytical capacity in the country are weak, and the lack of demographic media expertise exacerbates the data use gap. The overall recommendation is advocacy for a culture of transparent information in order to rebuild trust and promote strategic use, as well as active involvement of the media to promote awareness of the importance of demographic data for development. Technical and institutional capacity building include the strengthening of key statistical, research and data collection institutions; improving true international partnerships towards increasing local ownership

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for large scale demographic data collection, research and M&E systems. It is also important to resolving key indicator contradictions between service statistics and household surveys through committed harmonization of sources, improve communications between data analysts, media and policymakers, and the creation of a well-functioning National Population Council. More research is needed on the socio-cultural and historical barriers to enabling a greater culture of reliable data.

Keywords Evidence-based decision-making · Demographic data use · Data access · Data demand · Development policy · M&E systems · Media · Culture of transparency · Institutional capacity

16.1 Introduction

This chapter posits that demographic data provide an essential evidence base for the planning and evaluation of development policies. Previous chapters assess the trends and inequalities in achieving the development and MDG objectives of the country. But how well are these goals and objectives being monitored and evaluated? Are development decision-makers aware of the most reliable demographic data, can if they access it in a timely manner to meet deadlines, and how often do they use it appropriately? What are the reasons for under-utilization of existing data and the factors that limit the collection, analysis, sharing and use of data? Who are the key drivers of the demand for data from international to local and the private sector?

A series of assessments in 4 sub-Saharan countries (Ethiopia, Uganda, Senegal and Ghana) were carried out in late 2008 and early 2009 (PRB 2009; Baldwin and Diers, 2009) to document the gaps and to seek increased opportunities to strengthen use. They attempt to improve our understanding of how policymakers demand access and use demographic data for development planning and evaluation. They identify: (1) key population-related development indicators and data about which there are quality concerns; (2) contradictions and credibility gaps; (3) ways that influential journalists can better access and interpret reliable and timely data; and propose ways that development partners can contribute to improving proper use of data.

16.2 Methods, Strategic Approach, and In-Country Activities

16.2.1 Approaches in Ethiopia

There were two assessment teams in Ethiopia: one from the Population Council (Yared, 2009), and another from the Population Reference Bureau (Teller et al., 2009). In a coordinated way, they both sought a broad range of views from government, NGOs, development partners, civil societies and academia/researchers. They interviewed federal and regional government decision-makers, their population and socio-economic planning advisers, and other key influential individuals. In addition, PRB interviewed a variety of media as well as a few policy-level staff at international partners, using the following approaches:

1. Targeted and segmented 3-D informants: mix of data producers, analyst/advisers, planners, policymakers, and consumers.
2. Different data generation and use levels, including government, research, media, IGO and NGO, and the private sector.
3. Open-ended interviews with semi-structured questions.
4. Use of high-level, respected “policy insiders” as consultants.
5. Media targets: print, radio and TV; government and private; international, national, and regional.

In all, both teams interviewed nearly 100 key informants at national, regional and local (district and zonal) levels. Both current and recent high level decision-makers and journalists, as well as their influential technical advisors, were targeted. Follow-up discussions with the best informants were pursued to arrive at a deeper understanding of the issue. Arising out of the timing of the assessment came a specific case study on the delayed release of the controversial 2007 census results. Moreover, visits to three of the most populous four regions of Ethiopia were carried out to understand local level of demand and use of data.

16.2.2 Strategy

To ensure the future use of our findings, we involved government through the national coordination body for population: the Population Department of the Ministry of Finance and Economic Development (MoFED); under MoFED, the ad-hoc National Population-Development Task Force (P&D), which was working on a new National Population Plan of Action (MoFED, 2008b). This task force represents key government, academic, and international organizations, and is coordinated by the Population Department of MoFED, which is responsible for coordinating the formulation and implementation of the National Population Policy Plan of Action.

16.3 Findings: Main Themes in Demographic Data for Decision-making – The Demand-Access-Use Continuum – Policymakers

16.3.1 Demand

There has been an increase in both the real demand for data, as well as that perceived by the key informants, in recent years by government, media, private sector, and their international partners. However, the demand may be outstripping timely access to quality data: a stark case is the third national census that should have been conducted in 2004, but was delayed until 2007 and not released in a preliminary report until 18 months later, in December 2008 (CSA, 2008a), and officially published in July, 2010 (CSA, 2010).

There is distrust and even suspicion of data from different ministries. Examples mentioned of debated indicators are those related to hunger/food insecurity, crop

Table 16.1 Similar and differing estimates of demographic data (in 2010) between government ministries for key population targets: the baseline (preliminary data) is for 2010, the (proposed) target is for 2015

Indicator	Ministry of Health/PPD (Baseline, 2010)	Ministry of Finance and Economic Development/Population Affairs Directorate (Target, 2015)
Contraceptive use	65% “acceptance” rate (new and old acceptors)	44% prevalence rate (for currently married couples)
Total fertility rate (15–49)	4.0	4.0
Infant mortality rate	45/1,000	37/1,000

Sources: draft documents, from MoFED 2010; MoH, 2010;

production, land use/landlessness, economic growth, inflation, contraceptive use, HIV prevalence, un/underemployment, migratory movements, and population distribution.

The strong influence of international partners for demand-driven data is often not strategic, and may lack government buy-in at times. In 2008–2009, there were three major population and health surveys (on reproductive health, HIV/AIDS, and community-based health services). During the assessment, we were told that they were carried out without full government implementing partnership within a capacity building mode.¹ This lack of inter-government technical dialogue on key indicators interferes with the more transparent dialogue about the indicator gap between Ministry of Health estimates of CPR and CSA estimates.

Several respondents noted that although the Millennium Development Goals (MDGs) and Poverty Reduction Strategy Paper (PRSP) targets are endorsed by the government, their own national sectoral policy and/or strategy specific targets and time frames are often different from the globalized estimates.

For example, the CPR target from the 1993 National Population Policy is to move from 5% in 1990 to 44% in 2015; but the MOH now uses a different definition of this indicator (contraceptive “acceptance” rate) and estimates it at 65% for the year 2010 (MoFED, 2010; MoH, 2010). The TFR target is the same (4.0), but the MOH had targeted achieving by 2010, the other for 2015 (Table 16.1).

The study found little support for the continuity of internally driven data and sustainable information systems. More often, data are only called upon irregularly and when needed, such as when driven by particular events (World Population Day, HIV/AIDS Day) or crises (drought, hunger, epidemic, flood). This undermines the data demand and use for purposes of planning (education, health, housing, food, etc).

¹For example, we understood that a prominent international partner was collecting data on, among other indicators, current contraceptive use, but in a sample of mostly accessible areas, and then generalized this to show that their programs are being more successful in CPR coverage than documented by the government’s own DHS data.

16.3.2 Access

While there are still weak service statistics and monitoring and evaluation systems, some are being significantly strengthened. Examples of improvements include the Health Management Information System (HMIS, MoH, 2009) and the new Student Management Information System (SMIS). The MOH's Sector-wide approach 2006–2011 (MoH, 2008b, MoH, 2010) has been cited as a best practice by the recent Paris Declaration Progress Report on Aid Effectiveness (OECD, 2005).

University faculty and students also have limited access to the internet for accessing population-related publications and web-based information. It takes much longer to download demographic data even when there is access – very few said they were able to download the 99 pages of the 2007 Census tables during the month after it was released and reported in the media. (CSA, 2008). Moreover, this lack of web-based information does not mean that they can afford to buy the publications from the CSA bookstore tucked away inside the Addis campus (eg, the attractive Atlas of the Ethiopian Rural Economy, IFPRI and CSA, 2006).

There are numerous contradictions and much confusion over conflicting sources of international versus national data, such as:

- (1) contraceptive prevalence rate (internationally accepted indicator) versus contraceptive acceptance rate (i.e., the ever use of family planning services or contraceptives);
- (2) HIV incidence (new cases) versus prevalence (current cases);
- (3) food insecurity (pre-harvest food stocks) versus malnutrition (anthropometry); and
- (4) drought affected persons (inadequate crop yields) versus food/medical assistance required (people seeking aid).

This confusion feeds a tendency to select the source that most supports the policy or media story under discussion. Many surveys and evaluations are perceived by respondents as partial, unrepresentative, of poor quality, and even “politicized to serve their own self-interest”. many national and international institutions alike. Some major donors reported not releasing their most recent set of project evaluation reports (just sharing their sanitized summaries), citing poor quality of the evaluations. The World Bank has been self-critical of its own “weak monitoring and evaluation and results framework” in its recent Country Assistance Strategy document (World Bank, 2008). Another example comes from a major international health project manager, who told us that they designed a comprehensive results framework for the 5-year project, but that the donor did not request that they go beyond baseline and end line surveys; thus they did not provide resources for a comprehensive evaluation to find out what worked, and what didn't. The decision apparently had already been made as to the major components of the upcoming project extension.

Table 16.2 Different data from government and international sources, 2005

Indicator (%)	Ministry of Health	CSA/DHS	Other International
Modern Contraceptive Prevalence Rate, Women 15–49	35.8 (“Acceptance”)	13.8	31.8– 2008/2009 (JSI/L1OK)
HIV (15–44)	3.5 (urban 10.5, rural 1.9)	1.4	4.0 (UNAIDS)
Antenatal care (1 visit)	50.4	27.6	
Skilled Birth Attendant	15.1	5.0	
Fully Immunized (aged 12–23 months)	54	20.4	
Stunted/Underweight (under- five)	(No estimate at all)	47/38	

Sources: CSA and ORC Macro, 2006; MoH, 2007; 2008; JSI, 2009; UNAIDS, 2004;

One example of great controversy has been the number of drought-affected and food-needy people in different periods throughout 2008, ranging from a high of 13.2 million people, which donors often cited to “justify” their claims for increased food aid requirements, to the government’s 4.9 million, which are the chronically food insecure that need more long-term humanitarian and development assistance (DM/FSS/MoARD, 2009; FEWSNET, 2009, 2010). Another example is the donors’ perceived exaggeration of the high prevalence and number of AIDS-infected persons needing treatment, which ranged from the UNAIDS high estimates of 4–6% in 2004 to 1.4% from the preliminary 2005 DHS results (CSA and ORC Macro, 2006). (see Table 16.2).

16.3.3 Use

There is a common suspicion among the interviewees and in the media about possible manipulation of the data selected and used in both policymaking and by donors. The recent controversy over the much-delayed release of the 2007 National Population Census and concerns over under-reporting is an example. There was reported a major “attitudinal” problem, as well as a culture of suspicion of national data, resulting in an inability to make practical use of data (PRB, 2009).

Key media respondents expressed a need for a “breakthrough” in proper use, that is, an urgent radical change in the way the demand of beneficiaries is met through access to trusted and reliable data. They felt that an emotional reaction to demographic data was more common than technical analysis and interpretation – especially in relation to the census, often by tribe, religion, or region. Examples include the slower growth of the Amhara Region versus the large increase in the

Oromiya Region; the slower growth of the Wellaita and Guraghe ethnic groups versus the large increase in the Sidama group within the SNNPR; and the large increase in the proportion of the Protestant religion versus little increase in the proportion of Muslim (see Teller and Ali, 2009).

There are many gaps between research findings, media access to them, and timely policy use. For example, there have been a number of recent Master's Theses on fertility and family planning in Amhara Region that might have alerted the media to lower population growth in that region before the 2007 Census shocked them. These theses would have provided clear evidence of an advanced fertility transition going on there, with delayed age at marriage, higher contraceptive use, greater women's empowerment and migration to urban areas. Yet these theses are rarely disseminated outside of the university, inaccessible on the web and even in the graduate library and documentation centers, and copies are available, with difficulty, through the Graduate School. Moreover, the AAU's large national study on Migration, Gender, Health and Development was published in 2000 (DTRC/PSTC, 2000), with very little dissemination and little access by the media that might have alerted the public at large to the changing demographic picture subsequently demonstrated in the 2005 DHS and 2007 Census.

The un-timeliness is often related to the lack of capacity and preparedness to meet timely data needs. This forces the use of outdated projections, studies, and interviews. The median variant projection from the 1994 Census should not have been used literally after a 5-year period, and should have been updated with DHS 2000 and 2005 results (see text box). The delay from the scheduled 2004 Census to 2007, and then the 18-month delay in its release when it was greatly needed sooner, is another example. Ethiopia had been known in Africa for a more timely release of its census and DHS than other more statistically developed countries, such as South Africa and Nigeria. Now the DHS, which was all set for implementation in early 2010 (to be consistent with the seasonal timing of the 2000 and 2005 DHSs), was suddenly postponed at the last moment until early 2011, for various and sundry reasons, but ones that could affect its reliability.

16.3.4 Media-Specific Issues

There is often limited internet access in Ethiopia. Some media admitted to a "phobia" of the internet; and the lack of internet access to data is related to inadequate knowledge of analysis and interpretation of the data, even when accessed. The whole system concerning the importance of the technology of accessing data for overall development has not been well appreciated until very recently.

Government officials use the media and packaged press releases for their demographic data in most cases. There is a major gap between data availability and user-friendly access; data (in the form of tables and spreadsheets) are considered as "bulky"; thus the media often copy press releases verbatim. There is a lack of media capacity and know-how on using appropriate technology to access the best quality

data to address this increase in demand; some attribute this to lack of commitment and willingness to develop that capacity.

The media often lack adequate knowledge for data use, perceive that demographic data can be sensitive, and thus practice extreme caution and even avoidance.² Users, particularly the media, feel a “heavy burden” in trying to access reliable and timely data. This is due mainly to the lack of well-established systems to meet the needs of the data users. There is a lack of technical capacity for data analysis and interpretation, especially by influential government planners and media (for example, between TFR and birth rates; urban growth and urbanization; or contraceptive prevalence rates and contraceptive acceptance rates).

Controversy Over the “Undercount” of the 2007 Census Results

When the Spring 2007 National Census results were finally released much later than expected, in December, 2008, it documented only 73.9 million Ethiopians (CSA, 2008a) compared to the internationally-sanctioned projection of 77 million. The projection had been made based on the 1994 census and was not officially updated since. Thus most of the key informants and the media demonstrated keen skepticism over the results, and Parliamentarians (from the “undercounted” regions) demanded a recount. Subsequently a close evaluation of the census was done in March-April, 2009, by national and international demographers (personal communication with team of consultants), and found that the census had both field collection and coding problems, but was fairly accurate and should not be repeated. This team of demographers recommended to delay the release of the statistical reports until the data were properly cleaned. However, this technical report has never been released (the only summary report released was to the Parliament, which “voted” to confirmed the reliability of the data). In the meantime, line ministry planners from one of the major undercounted regions were torn between having to use the official census data and their own higher estimates of their target populations, which they felt represents their reality. What we demographers learned is how important is the absolute size of the population, because that determines the allocation of both financial resources and seats in Parliament!

²Fear and caution are also common outside the media, including technical consulting firms, as well as in research and university settings.

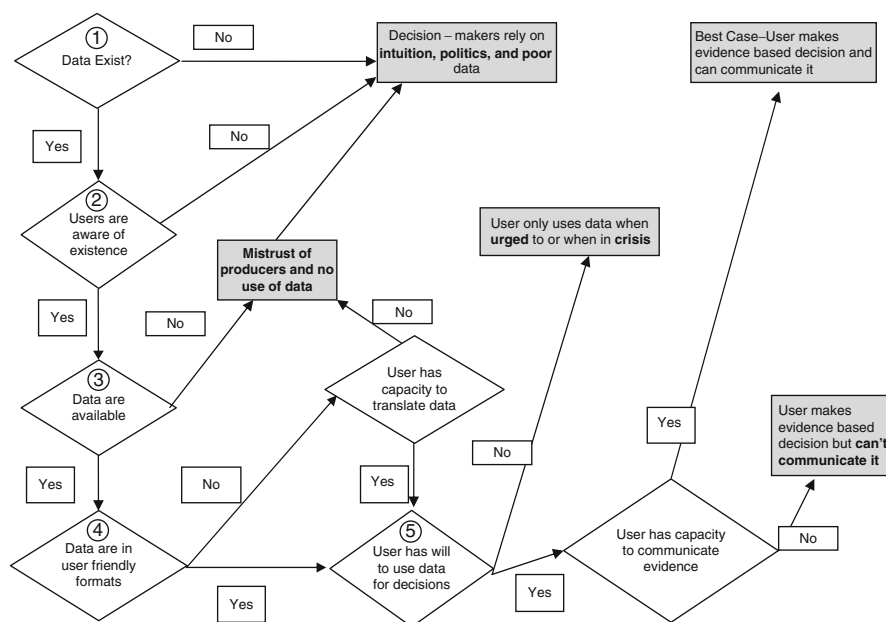


Fig. 16.1 Data flow chart algorithm of barriers (1–5), from data availability to data use/non use (source: adapted from Bremner, PRB, 2009)

16.3.5 Discussion: Toward a New Algorithm

16.3.5.1 Data Flow Chart

The team summarized the barriers in the flow toward data use, from the non-existence of crucial data through availability, awareness, access, use and uptake constraints (see Fig. 16.1 and PRB 2009):

Barrier 1- Some crucial data *do not exist* or have low coverage and reliability—examples include:

- Vital events (births, deaths, marriages, divorces),
- Incomplete migration data (Ethiopia does not ask place of birth on Census form any more like it used to in the 1984 census),
- Unemployment data in rural areas,
- Updated, local area denominators by age groups for critical groups (eg., children under one and pregnant women) for development are hardly available (projects made for the region, not the wereda),
- Landless farmers, and
- Per capital arable land.

Barrier 2- Data exist but people are *not aware* of their existence (media and policymakers):

- Teenage pregnancy, for TFR, for FGM by age, and
- Age at marriage, desired family size, seasonal migration, CPR, etc.

Barrier 3- Data exist and are known, but are *not available* to potential users:

- Surveys by NGOs and universities are often not easily accessible even when sponsored by public funds,
- Bureaucratic and other personal hurdles often exist to timely access to data,
- Physical distance can also make data effectively unavailable to users outside of Addis, and
- Technological innovations in accessing on-line data are often not familiar to users.

Barrier 4- Data are available but not presented *in user-friendly* formats for media and policymaker use:

- Reports usually include extensive tables which are only useful for those with the technical capacity to use detailed data,
- Briefs exist but often are in short supply and not in the right hands, or are lost after a short period of time, and
- Summaries are not available for smaller administrative units.

Barrier 5- Data are accessible but are still *not used*:

- Lack of willingness to make evidence based decisions,
- Mistrust of data due to:
 - Complexity of data/estimates/projections,
 - Evidence not supporting expected results,
 - Lack of local involvement in data collection and analysis,
 - Perceived biases in the data.

- Data not timely for speed of decision-making process,
- Data not considered reliable,
- Outdated projections:
 - Inconsistent use of updated data, and
 - Poor denominators.

16.3.6 Demand and Supply Side Impediments

As a result of increased demand for data, most government organizations now have a planning and programming department. However, there remain some impediments to data use, both of the demand and supply sides:

Table 16.3 Demand and supply side constraints to data use

Demand side	Supply side
Limited awareness of the value of data	Differing sources of information available on same indicator with different results
Limited awareness of the amount and type of data available in the country	Absence of priority data for policymakers
Absence of a coordinating mechanism linking the data and policymakers	Research/survey findings not communicated well to policymakers
–	Poor research and data generation capacities in the country

Source: Yared, 2009

16.3.7 User Perceptions of Data Quality

Demand for data is often limited to processed data, as most data consumers rarely solicit raw data from surveys or censuses, for the following reasons (Yared, 2009):

- Do not see the relevance of inquiring about raw data,
- Not aware of the amount of information collected,
- Limited data management and analytic capacity,
- Assumptions that data analysis is the responsibility of experts at CSA and the universities,
- Do not know that the raw data exist, and
- Concerns about how to share data.

16.4 Summary of Key Findings, Conclusions and Implications

Demand for data/information has recently increased— often international donor-driven, but also by decentralized level planners and by private sector investors. Both demand and supply side are impediments of data use (see Table 16.3): supply was often limited by restrictions to the entire raw data of a given survey or census.

While quality of the CSA data was perceived to be high (except for the recent 2007 census), there were reported problems of central control, timeliness, consistency, and comparability limited factors in use; the improved MOH/HMIS is still perceived as incomplete and biased; and the National budget and accounts data were seen as unreliable. Confusion has been created by contradictory sources of data and lack of harmonization on key indicators; moreover, journalists lack adequate knowledge for accessing and interpreting large quantities of data: example given were with the 2007 census and with the DHS. Finally, certain sectors (Education, Health and MoFED) have the greatest use; but environment, and agriculture ministries underutilize population data.

In summary, there are numerous implications: at international (ie, MDGs), national (Policies), regional (strategies, programs) and possibly local levels (eg., projects):

- *Creating public awareness* – national fora; data use dialogue; culture of transparent information,
- *Human capital investments* – build analytical and research capacity; retention of CSA technical and university demography staff,
- *Infrastructure and institutional investments* – national data clearinghouse,
- *Vital registration systems* – that meet both statistical and governance needs (of both the government and the general public)
- *Monitoring and evaluation* – towards evidence-based policymaking,
- *Media* – addressing their concerns, access gaps and interpretative and reporting capacity limitations, and
- *Donors* – revising their role in strengthening the demand for and use of demographic data.

16.5 Policy Recommendations

16.5.1 General

There is a need for a radical change and paradigm shift – advocating a culture of transparent information in order to rebuild trust and promote strategic use. Here are some of the team’s recommendations, (in Teller et al., 2009):

- *Build capacity* in demand for, analysis of, and proper use of data at all levels. Cultural factors reinforce this, thus a need for radical change to meet the demand of the beneficiaries. Activities include: promoting local ownership, management,

supervision, and monitoring of data, including their immediate use for accountability and quality control; training/awareness on the importance of population data for development; the role of a national population technical group on population and development to ensure proper use of data; and the important role of CSA in generating and distributing data of national interest.

- *Protect the objectivity of the CSA census data* from possible influence for resource allocation and budgeting. Create a mechanism to empower CSA to have final say on data collected at national level by any national or international organization (similar to the South African system); use the new Statistical Council autonomy for this purpose (CSA, 2009).
- *Use media to promote awareness* of data importance and to engage decision-makers and the public for their proper use.

16.5.2 Specific Opportunities: Demand

- *Create awareness* on the part of the general public for the importance of demographic data. Bring system-wide change in data demand, access, and use. Support the data demand-use priority actions included in the new National Population Policy's Plan of Action, 2008–2016: four of the seven priority areas in the Population-Development theme related to demand, access, and use (MoFED, 2008b). Advocate the value of reliable and timely demographic data by the public, the government, and donors.
- *Develop strategic information and M&E systems.* Important innovations in Health and Education sectors are now occurring. One exciting example is the Health Management Information System Reform Team's development of Information Use Guidelines and Display Tools and piloting under a decentralized "SEE-PLAN-DO" strategy in 11 districts in five regions (MoH, 2008a, 2009). The "display" of information is to enhance the understanding of health priorities for improvement and results so that they can be "easily understood." In Education, under the new Education Management Information System (EMIS), data are collected twice a month for tracking the number of teachers and students. Moreover, there is a piloting of a new Student Management Information System (SMIS) in 35 "child-friendly" schools in Amhara Region. The approach is for basic computer skills to follow "student careers" on each student (PRB, 2009).
- *Accelerate functioning of the National Population Council (NPC)*, which was proposed under the 1993 National Population Policy but not implemented. The NPC membership is drawn from key line ministries, regional population council representatives, religious leaders and representatives of NGOs, CBOs, and other development partners. It serves as an advisory body to the government on matters relating to population and development, and will serve as the highest body for the coordination and management of the national population plan of action.
- *Promote regional, zonal, district (wereda), and sub district (kebele) strengthening and capacity building.* Increased demand is now coming from the sub-national levels, under the expansion of decentralization, but much of the high quality

survey data (e.g., DHS, WMS) is only disaggregated to the regional level. They need the data for budget and personnel allocation and for monitoring their health, education, welfare, and related service provision and performance indicators. Under the new BPR government reorganization, performance monitoring will be carried out at the lowest levels.

- *Reverse the weak donor demand for well-planned and reliable M&E systems and data.* Major donors acknowledge the need for more comprehensive strategic information and M&E Systems (e.g., see World Bank Country Assistance Report, 2008), and need to allocate sufficient budget and time for strengthening and providing incentives for evidence-based decision-making. Donors can make data systems development a prerequisite for awards.
- *Improve “real” partnerships for large-scale international/national surveys and evaluations (such as the 2007 Census).* Examples include: CSA strengthening through sharing of experiences with strong African statistical agencies, such as STATS/South Africa and CSO/Kenya; USAID to ensure that Macro/DHS strengthen demographic analytical capacity at CSA and that MEASURE/Evaluation support yearly outcome monitoring surveys between the 5-year DHS; and HIV/AIDS donors can strengthen existing government strategic information and M&E systems by building national capacity (instead of carrying out their own parallel surveys).

References

- Baldwin, W. and Diers, J. (2009). Demographic Data for Development in Sub-Saharan Africa. Working Paper No. 13, New York. www.popcouncil.org/documents
- Central Statistical Agency (CSA). (2010). *The 2007 Population and Housing Census of Ethiopia*. National Statistical Report, Office of the Population Census Commission, Addis Ababa, July.
- Central Statistical Agency (CSA). Ethiopia. (2008a). Preliminary Tabulations, 2007 Census, December. www.csa.gov.et
- Central Statistical Agency (CSA). Ethiopia. (2009). National Strategy for the Development of Statistics (NSDS), Addis Ababa, June.
- Central Statistical Agency (CSA) and ORC Macro (2006). Ethiopia Demographic and Health Survey, 2005. Addis Ababa and Calverton, Maryland. CSA and ORC Macro.
- Demographic Training and Research Center (DTRC) and Population Studies and Training Center (PSTC). (2000). *Migration, Gender and Health Survey in Five Regions of Ethiopia*. Addis Ababa University and Brown University, Addis Ababa. August
- Disaster Management/Food Security Sector/Ministry of Agricultural and Rural Development (DM/FSS/MoARD). (2009). *Joint Government and Humanitarian Requirements, 2009*. Addis Ababa, Ethiopia.
- Famine Early Warning System Net (FEWSNET) (2009). USAID, Addis Ababa, www.fewsnet.org.
- Famine Early Warning System Net (FEWSNET) (2010). USAID, Addis Ababa, www.fewsnet.org.
- International Food Policy Research Institute (IFPRI) and Central Statistical Agency (CSA). (2006). *Atlas of the Ethiopian Rural Economy*. Washington, DC.
- JSI Research and Training, INC. (2009). Baseline Household Health Survey: Amhara, Oromoya, SNNP and Tigray. The Last Ten Kilometers Project, August
- Ministry of Agriculture and Rural Development (MoARD). (2008). Livelihood Information Unit, DPPA (www.dppa.gov.et/ENCU/maps).

- Ministry of Finance and Economic Development (MoFED). (2008a). Population and Development in Ethiopia: A Situation Analysis, Solomon Alayu, Addis Ababa, Feb.
- Ministry of Finance and Economic Development (MoFED). (2008b). National Population Plan of Action, 2008/2009–2015/2016 Dec. (draft)
- Ministry of Finance and Economic Development (MoFED). (2010). Growth and Transformation Plan (GTP) 2010/11–2014/15, Addis Ababa, Ethiopia, Draft, September.
- Ministry of Health (MoH). (2007). AIDS in Ethiopia. 6th Report for 2005, Addis Ababa
- Ministry of Health (MoH). (2008a). Health and Health-Related Indicators, 2006–2007
- Ministry of Health (MoH). (2008b). Ethiopia Health Sector Development Programme: Mid-Term review, July
- Ministry of Health (MoH). (2008c). Health Management Information System/Monitoring and Evaluation, HMIS Reform Team, January.
- Ministry of Health (MoH) (2009). Health and Health-Related Indicators, 2007/2008.
- Ministry of Health (MoH). (2010). Health Sector Development Program IV 2010/11 – 2014/15, Addis Ababa, Ethiopia, First Draft, June.
- Organization for Economic Cooperation and Development (OECD) (2005). www.oecd.org/dac/effectiveness/parisdeclaration/members
- Population Reference Bureau (PRB). (2009). Demographic Data for Development Decision-making: Case Studies from Ethiopia and Uganda. Bremner, J. (ed.). (www.prb.org/pdf09/demographic_decision-making.pdf).
- Teller, C. and Ali Hassan. (2009). Socioeconomic and Demographic Profile of Muslims in Ethiopia, Pew Forum on Religion and Public Life, Washington, DC (report incorporated in Pew Report, Demography of the Muslim World, October, 2009 www.pewforum.org).
- Teller, C., Assefa Hailemariam, and Negash Teklu (2009). Demographic Data for Decision-making in Ethiopia, Addis Ababa (draft report to the Population Reference Bureau, March).
- UNAIDS. (2004). Report on the Global HIV/AIDS epidemic www.unaids.org
- World Bank. (2008). Ethiopia Country Assistance Document, Addis Ababa.
- Yared Mekonnen. (2009). *Demographic Data for Development: Ethiopia*. Report to the Population Council, Addis Ababa, Ethiopia.

Part VII
Conclusions and Policy Implications

Chapter 17

Conclusions and Policy Implications

Charles Teller and Assefa Hailemariam

Abstract The book documents numerous ways in which large and rapidly growing Ethiopia is demographically unique from the rest of sub-Saharan Africa: the second most populated country in Africa, the largest rural-urban gap in fertility in Africa, the only city in East and Southern Africa with below replacement fertility, and by far the lowest maternal health service coverage. It also acknowledges Ethiopia's unexpected progress towards meeting most of the human development MDGs, in child health and undernutrition, HIV/AIDS, education and water, and thus one of the few SSA countries on track (in 2010) in most goals. Within the African context, Ethiopia is in the incipient stages of the fertility transition, with the overwhelming majority in rural areas lagging far behind urban areas. The book presents a *revised framework for the study of the multiple causes of the demographic transition*, including demographic responses and adaptation to frequent shocks and hazards. Using various case studies, it documents the multiple demographic structures and responses to these risks and on-going vulnerabilities, with migration and labor mobility, as well as changing youth aspirations and delayed marriage, as important adaptations. We predict an acceleration of the incipient rural fertility decline, and the potential of reaping a demographic dividend. However, the increasing proportion of the population in the working age category can only be transformed into an economic bonus if there are adequate preparations for skilled youth jobs, agricultural intensification, technological adaptation, educational efficiency, healthier lifestyles, higher youth aspirations, better governance, improved infrastructure, and higher quality institutions. Finally we conclude that there has been unsatisfactory implementation of the 1993 National Population Policy, and that the need to redress the imbalance between population growth and resources has not progressed well, with growing population pressure and environmental degradation. The government's draft (Sept. 2010) Growth and Transformation Policy sets forth ambitious population and

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human development targets for the MDG deadline of 2015. Thus, given in this context, we list the implications for strengthening policy implementation, research and data analysis capacity, and harmonization of demographic data within useful M&E systems.

Keywords Population policy and development · Demographic dividend · Fertility transition · Evaluation · Sub-Saharan Africa · Resilience · Adaptation

INTRODUCTION: The Need for a Contextualized Conceptual Framework of Demographic Response for SSA Countries

This book begins with a chapter introducing a more contextual conceptual framework that balances the population-development structural determinants with the demographic responses to vulnerability and frequent hazards. In this way it proposes to be more policy-relevant for high priority national goals, such as poverty reduction, food insecurity mitigation, disaster risk reduction, and the health and education MDGs in demographically challenged sub-Saharan African countries such as Ethiopia. The framework is a result of our nearly 20 years of collaborative research and training on population, natural resources and development, in academia, national government and international partners. Several papers have been presented by the co-editors and authors, using this framework, at international population conferences (Teller, 2005; Teller et al., 2007–2010).

The framework follows respected international socio-demographic traditions, including Amos Hawley's (1950) Human Ecology, Kingsley Davis' (1963) Theory of the Multiphasic Change and Response, and Ester Boserup's (1965) Agricultural Transformation. It includes the appropriate adaptation to the African context, including Adepaju's classic (1994) "Rethinking the Approaches to the Study of Population Dynamics in Africa", as well as advances in the fertility transition by Caldwell, in mortality by Hill, and in migration by Adepaju (1994). It redresses the marginalization of the importance of migration, urbanization and mobility, as shown in the Bilsborrow and Carr (2001) application to agriculture and rural development, and the de Sherbinin (2007), Tacoli (2007), and Adamo (2009) focus on micro demographic dynamics of the household and social ecology. The book co-authors also have been presenting fresh looks at these multiphasic demographic responses in the East African and Ethiopian context, in recent international population conferences (Teller et al., 2005, 2007, 2009, 2010).

We discuss both the similarities and differences between Ethiopia and the rest of sub-Saharan Africa, as well as within Ethiopia. Ethiopia is unique also because of its rich and varied historical and cultural background which continues to thrive today. Thus it follows the increased interest in non-socio-economic aspects, such a cultural, diffusional, generational (eg., transitions to adulthood) and ideational approaches, as seen in Lesthaeghe (2010), Lloyd et al. (2005) and the more recent writings of Joel Cohen (2008). It strives to be both holistic and multi-disciplinary, and focuses more on the demographic responses to development, with adaptation and change in

the face of chronic hazards, shocks and instability. These responses then feed back into the population structure of the country which interacts with other development processes in a continuous iterative process.

The book has been divided into the five thematic areas, namely:

1. The Demographic Transition and Human Development;
2. Health, Nutrition and Mortality;
3. Population Distribution, Migration, and Urbanization;
4. Vulnerability and Adaptation; and
5. Policy and Program Evaluation.

Conclusions from each are summarized as follows:

17.1 The Demographic Transition in Ethiopia Is Unique Within Sub-Saharan Africa

17.1.1 Ethiopia is *Demographically Unique* in a number of ways:

POPULATION SIZE: The second largest country in Africa and growing at a high rate and adding more people yearly than most (except Nigeria and Democratic Republic of Congo).

GEOPOLITICAL: Strategically situated at a geopolitical crossroads between East Africa, North Africa, Horn of Africa and the Middle East, where there is tension between African, Middle Eastern and European civilizations and conflict over access to natural resources and transportation routes.

FERTILITY AND MATERNAL HEALTH: Largest rural-urban fertility gap in Africa, and the lowest fertility in an East and Southern African Capital city with below replacement level fertility in Addis Ababa (1.3) and 6.0 children per woman in rural areas (in 2005); The poorest maternal health service coverage in Africa (5% skilled birth attendance and 28% antenatal care in 2005).

LITERACY AND FOOD SECURITY: The highest percentage of women 15–49 with no formal education (67%) in Africa, where the average is 29% (in 2007); Among the largest number of food insecurity (13–15) million in Africa (in 2009).

POPULATION DISTRIBUTION: Very high percentage of population in rural areas (84%), the third highest in Africa, but with an expanding network of small market towns (2007).

MDG PROGRESS: Adequate human development MDG progress in under-five mortality, underweight, HIV/AIDS, primary education and water goals, thus being one of the few SSA countries on track in most of these goals (in 2009).

17.1.2 *Incipient Stage of Fertility Transition Overall, but Two Ethiopias*: as a country Ethiopia is considered as in the second or incipient stage; but there are actually two distinct transitions: the urban is very advanced (2.4 children), with below replacement fertility in Addis Ababa since 1994 (now 1.3 children); and the rural, with 84% of the population, is in an incipient stage, with a slight decline, but still with TFR above 6 children in 2005.

17.1.3 *Revised Theory of the Multiple Causes of the Fertility Transition*: There is a balance between poverty and vulnerability, along with human and economic development and cultural diffusion, as main drivers of the incipient fertility transition; moreover, some of the uniqueness of rural Ethiopia have been demographic responses and adaptation to food insecurity, drought, instability and other hazards and shocks, including:

- Population pressure, land fragmentation, and landlessness
- Youth unemployment, highest among urban females 20–29
- Increased off-farm, but non-diversified labor migration

These often negative factors above must be balanced by important positive factors, including higher school enrolment, greater youth aspirations, rapid expansion of basic rural health services, and women's empowerment, as well as new 2005 Family Law raising the legal age of marriage to 18 years. Both negative and positive factors are serving to delay marriage and lower desired family size, including determinants such as of abortion and contraceptive use.

Socio-cultural change is also occurring among the younger generations in the small towns and villages in much of Ethiopia. Community norms of family formation are related to later age at marriage and lower fertility expectations among youth. The increasing cost of living and raising a family are reinforcing rising individual aspirations and expectations of a merit-based society. This, along with expansion of primary education, a slight improvement in secondary enrollment, increased communication and urban diffusion, mobile phone use, mass communications and geographic mobility all affect lifetime goals. Thus, the value of children, of early marriage and of kinship ties is weakening.

17.1.4 *Expected Acceleration in the Pace of the Fertility Decline in Ethiopia*. Preconditions include:

MORTALITY: Steep declines in under-five mortality (the child survival hypothesis)

FAMILY FORMATION: Reductions in desired family size and in not wanting additional children

RISING CPR among young married couples

MARRIAGE: Rising age at marriage, youth aspirations for delayed adulthood, and related socio-cultural change

GIRLS' EDUCATION: Increase in girls (primary completion rate and absorption in to secondary schools) staying in school and lengthening transitions from youthful learning into adulthood and marriage

MIGRATION: Increasing temporary migration, off-farm employment and urban networking and diffusion; strengthening the rural-urban linkages as well as improving the rural non-farm and rural agricultural linkages to absorb the rural labor in employment

- 17.1.5 *The Demographic Dividend:* While age dependency has not declined since 1994, with the predicted acceleration in the fertility decline, the predicted youth bulge and lowering age dependency will provide an increasing proportion of the population in the working age category. If the above preconditions are met, the future is promising and the youth would turn out to be grown up dividend rather than given up burdens.

PRECONDITIONS FOR REAPING THE DEMOGRAPHIC DIVIDEND

- Skill-oriented youth jobs
- Agricultural intensification and modernization
- Technological adaptation
- Labor intensive production technology
- Educational quality and efficiency
- Healthier lifestyles
- Higher youth aspirations
- Better governance
- Higher quality of institutions

- 17.1.6 *Elongation of the Youth Transition to Adulthood:* increased higher education and youth aspirations in urban and accessible rural areas suggest that these youth may be on the vanguard of social change, with implications for delayed marriage and childbearing. Classical economic theories of the demographic transition did not take into account the diffusion of ideas, modern communications and technologies that lead to a more merit-based paths to individual capabilities, lifetime goals i.e. (“agency”) and social mobility.

17.2 Health, Nutrition and Mortality (1990–2005)

- *Most Health-related MDGs are on track (except Maternal Mortality) (1990–2015)*-Under nutrition (declined from 46 to 38% and U5MR from 210 to 123) are both on track for the target year 2015 (although statistically facilitated by a very high initial baseline), they are still high compared to most SSA countries; education primary enrollment MDG on track, but not gender parity; however, most

chapter authors warn that most MDG indicators are quantitative and withhold a lot of qualitative aspects required for human development.

- *Woman's under-nutrition*: While 28% have low BMI, low decision-making autonomy raises their odds of being undernourished by 1.54. Cultural, regional and agro-ecological differentials in BMI are not well understood.
- *Child's stunting*: The prevalence in rural areas has declined from an extremely high level of 64% in 1992 to 52% in 2000 and 48% in 2005; nuclear, single-parent households are much more vulnerable to stunting, while composite households are more resilient, holding socio-economic status constant.
- *Maternal mortality*: The slight decline in maternal mortality in 2000–2005 from 873 to 673, and now estimated in 2008 at 590, is not statistically significant and one of the few MDGs not on track.
- *Maternal care utilization*: Antenatal care, use of skilled birth attendant and post-natal care are by far the lowest in Africa, and thus an unacceptable situation; secondary education, urban residence and later age at marriage are related to great use of maternal services.
- *HIV/AIDS and life expectancy*: Impact on life expectancy in Ethiopia has been modest, slowing the rise in the early-mid 2000s, it is estimated to be rising at a more rapid pace (with the greater availability of ART), from 48 in 2000 to 53 in 2010 (ESA, 2009). Migration is a related cause of risky behavior, as the wealthier, more educated and more geographically mobile have higher prevalence rates (ESPS, 2008); prevention of a rise in incidence appears to have been successful, but monitoring of adherence to treatment regimes has been a challenge.

17.3 Distribution: Migration, Urbanization and Occupational Mobility (1984–2007)

- *Migration streams changing*: While the rural-rural stream is still most important (almost half of all migrations), it and the rural-urban stream is lowering in frequency (per the NPP objective), while the urban-urban has increased more rapidly (from 13 to 19% 1984–1994).
- *Population growth rates*: Urban rates are about double the rural (4 to 2%), with small towns with the most rapid annual growth.
- *Temporary Migration*: This is increasing, as a demographic response to population-land pressure, the growing need for off-farm employment, for cash and to fill government-created public works jobs.
- *Rural-urban linkages*: These can reduce vulnerability to frequent hazards and shocks; small towns have established better linkages with the rural and urban areas, such as the example of Turuf Ketcheme, are more resilient to poverty and drought shocks.
- *Urban growth*: Sustainable rural development appears less possible without it.
- *Female labor force mobility*: Temporary migration has helped women enter the labor force at a greater rate than males; it also relieves land pressure.

17.4 Vulnerability and Adaptation: Case Studies in Population-Resource Pressure and Food Insecurity (1997–2007)

- *Inter-related demographic-economic responses*: to chronic household food insecurity in drought-prone areas: off-farm employment, diversification, coping strategies; most important livelihood assets are land, livestock and adult labor
- *Demographically vulnerable households*: Newly formed or old age; female headed and those with many children under 10 years of age.
- *Growth of Addis Ababa*: it has displaced many farmers into daily labor, with women and youth the main victims of this livelihood crisis.
- *Demographic and life cycle*: characteristics of unsustainable livelihood households in rain-sufficient areas: young and old age and female-headed households; low literacy with few livestock.

17.5 Development Policy and Program Evaluation (1993–2010)

- 17.5.1 There are varying *demographic projections* until 2035 under two fertility scenarios and linked with GDP: only under the fast fertility decline scenario (TFR reaching 3.1 children per women, and a population at 128 million) with double-digit GDP can Ethiopia be likely to join the middle income country category by 2035.
- 17.5.2 There has been *unsatisfactory implementation of the 1993 National Population Policy*. While the CPR target might be on track for the 2015 target of 44%, there have been weak institutional arrangements and lack of coordination among implementing partners, lack of an M&E system, and the absence of a strong legal framework.
- 17.5.3 Inability to *redressing the imbalance between population growth and resources*. This main NPP objective has not advanced, and population pressure and environmental degradation have grown; there has been little collaboration from some key sectors.
- 17.5.4 Ideological barriers to *implementation of the NPP*. The contentious discourse between neo-Malthusian and Marxist theories of population and development may have thwarted coordinated and efficient implementation.
- 17.5.5 There is a *gap between demand and use of data*. The increased demand for data (especially for PASDEP/MDGs, by MoFED, Ministries of Education and Health) has not been met with increased capacity to analyze the data, and these influence use of the data for decision-making, there are a number of data inter-operability issues, such as user friendliness, commitment, dissemination.
- 17.5.6 There is a *lack of harmonization and often confusion* over key demographic data and indicators. Conflicting estimates of data between government

sources (eg, CSA vs. line ministries) on population size, growth, fertility, contraceptive prevalence, HIV/AIDS, unemployment and migration and off-farm labor have led to contentious debates; the media is particularly challenged in accessing and reporting on the most accurate sources of information. Examples of unharmonized data include CPR, female urban employment, arable land population density; temporary, seasonal and international migration and refugees; absolute poverty; food insecure, maternal mortality, etc.

- 17.5.7 There have been major *delays in data production*: including not implementing the 2004 Census until 2007, and in releasing the results; and in postponing the 2010 DHS until 2011. These major national demographic data collection efforts, exacerbated by the lack of a vital registration system, and an unreliable (but improving) Health Management Information System have greatly hindered the analysis and use of evidence for development planning and evaluation. The new plan for a Health Information System and Statistical Council will help to improve data production and dissemination.

17.6 Policy Implications

After much discussion among the authors, policy advisors and advanced graduate students, we have come up with a series of policy implications:

1. Revise and expand traditional theories of the demographic transition to *include poverty and adaption*, as well as new generational life course aspirations and community norms of delayed family formation.
2. Redress the National Population Policy's main objective (*reduce population resource imbalance*) through transparent debate, and reconsider the importance of spatial redistribution; change the current objective to reduce *rural-urban migration pattern* and foster planned and incentivized permanent, temporary, circular and international migration that maximizes human potential and spatial development corridors; make explicit the inter-sectoral implementation strategies which would raise the urban population from 16% to the provisional (Sept. 2010) GTP target of 26% in the 2010–2015 period.
3. Support resilience and adaptation strategies to *climate change and disaster risk reduction* through positive demographic responses in migration, household structure, secondary education and labor force.
4. Use *home-grown population* theories, models, local case studies and indigenous research findings to guide policy; *publications must be much more widely disseminated with greater uptake*; these require a new policy-relevant research agenda for the 2010–2015 population policy.

5. *Harmonize conflicting demographic data* for policy use: strengthen the *institutional capacity* to analyze, interpret, evaluate and disseminate policy-relevant data to facilitate its strategic use; assess the feasibility of reaching by 2015 the ambitious major targets in population and health included in the draft Growth and Transformation Project (GPT), especially the MMR decline (from 590 to 267), and family planning service “acceptance” rate (from 32% to 65%) (MoFED, 2010).
6. *Raise the awareness* of the importance for reliable, timely and relevant data (including a Vital Registration System), rigorous research and evaluation by policymakers, the public and the media; experts and planners need to look much more critically at the measurement issues in key demographic indicators (e.g., internal migration).
7. Prepare systematically for the projected *demographic dividend* opportunity—this expected youth bulge and low age dependency by the year 2035 requires early preparation on the 8 preconditions to reaping this potential demographic dividend and preventing it from becoming a burden (World Bank, 2007; Ringheim et al., 2009).
8. Reduce *population pressure* on the land and food insecurity with policies to promote greater rural-urban linkages, agricultural commercialization, off-farm employment and temporary migration, livelihood diversification and urban development.
9. Improve the quality of the now very extensive *Health Extension Package*. This ramped-up system of community health workers, village volunteers, model families and village committees can be used for vital statistics and targeting of high risk households, in lieu of a Vital Registration System; however, community health worker” skills need to be upgraded and more closely supervised, along with a rational human resource promotion plan, which would help prevent high turnover.
10. Reduce *demographic inequities with vulnerable populations* that have been based on rural-urban, pastoral-agricultural, social class, gender, ethnicity and region. Population redistribution policies can help reduce the huge rural-urban and unskilled-skilled labor gaps.
11. Enhance the effectiveness of the recent rapid uptake of contraceptive injectables with *longer-term methods* for younger couples.
12. Improve *women’s secondary education and decision-making autonomy*: Enable women and girls to have the autonomy to make informed choices regarding their sexual lives, age at marriage and timing of pregnancy, which may assist the effort in accelerating the rate of decline of MMR. These are underlying causes of socio-economic and health problems in Ethiopia.

17.7 Concluding Thoughts on Bridging the Research to Policy Gap

In conclusion, we are calling for more collaboration and communication between those in the academic, research and data generation professions and policymakers, practitioners and the media, as well as the technical harmonization of conflicting demographic data sources in sub-Saharan Africa. Our analysis should be more locally motivated and contextually driven, and guided by more relevant home-grown theories and models. A good example presently is the large gap in academic research and rigorous evaluation (Teller et al., 2010) on the explicit link between population and adaptation to climate variability in the Sahel and the Horn of Africa. Our hope is that the enormous potential of this culturally diverse, huge and geo-politically strategic region can reap the potential of the demographic dividend for our children and grandchildren to come. We hope that this book is one small step in this direction.

References

- Adamo, S. (2009). Climate Change-Population Interactions: A Spatial and Regional Perspective, Paper presented at the IUSSP, Morocco, September.
- Adepoju, A. (1994). Rethinking the Approaches to the Study of Population Dynamics in Africa. Union of African Population Studies (UAPS), Paper No. 1, Dakar.
- Adepoju, A. and Hammar, T. (1996). *International Migration in and from Africa: Dimensions, challenges and prospects*. Dakar and Stockholm: Population, Human Resources and Development in Africa, and Center for Research in International Migration and Ethnic Relations.
- Bilsborrow, R. and Carr, D. (2001). Population, Agricultural Land Use and Environment in Developing Countries. In Lee, D.R. and Barnett, C.B.(eds.), *Tradeoffs or Synergies? Agricultural Intensification, Economic Development and the Environment*. New York, NY, Cabi Publishing, pp. 35–55.
- Boserup, E. (1965). *The Conditions of Agricultural Growth*. New York, NY, Aldice.
- Cohen, J. (2008). *Beyond Population: Everyone Counts in Development*. Center for Global Development, Demography and Development Lecture Series, Washington, DC, September.
- Davis, K. 1963. The Theory of Change and Response in Modern Demographic History, *Population Index*, 29.4, October.
- de Sherbenin, A. et al. (2007). Rural Household Demographics, Livelihoods and the Environment, *Global Environmental Change*, doi: 10.101, www.elsevier.com/locate/gloenvcha
- Ethiopian Society for Population Studies (ESPS). (2008). Factors Fuelling the Prevalence of HIV and Contributing for Regional Variation: Findings for the EDHS 2005.
- Hawley, A.H. (1950). *Human Ecology: A Theory of Community Structure*.
- Lesthaeghe, J.R. (2010). The Unfolding Story of the Second Demographic Transition. *Royal Belgian Academy of Sciences*. Paper to be presented at the conference on “Fertility in the History of the 20th Century – Trends, Theories, Public Discourses, and Policies.” Akademia Leopoldina & Berlin-Brandenburgische Akademie Januari 21–23.
- Lloyd, C.B., Behrman, J.R., Stromquist, N.P. and Cohen, B. (2005) The Changing Transitions to Adulthood in Developing Countries: Selected Studies. *Panel on Transitions to Adulthood in Developing Countries; Committee on Population Division of Behavioral and Social Sciences and Education*. National Washington, DC, Research council of the national academies press.

- Ministry of Finance and Economic Development (MoFED). (2008). National Population Plan of Action, 2009/2010–2015/2016, Addis Ababa, December.
- Ministry of Finance and Economic Development (MoFED). (2007). Monitoring the MDGs in Ethiopia. Addis <http://www.et.undp.org/index.php>
- Ministry of Finance and Economic Development (MoFED). (2010). Growth and Transformation Plan (GTP) 2010/11–2014/15 Addis Ababa, Ethiopia, Draft, September.
- Ministry of Health (MoH). (2010). Health Sector Development Program IV 2010/11–2014/15. Addis Ababa, Ethiopia, First Draft, June.
- Ringheim, K., Teller, C. and Sines, E. (2009). *Ethiopia at a Crossroads: Demography, Gender and Development*. Policy Brief, Population Reference Bureau, Washington, DC, December. www.prb.org/policy brief
- Tacoli, C. (2007). *Migration and Adaptation to Climate Change, Sustainable Development Opinion*. London, International Institute for Environment and Development.
- Teller, C. (2005). The Demography of Hunger: Case Studies in Population/Land Pressure in Vulnerability to Food/Nutrition Insecurity in Ethiopia. Paper Presented at the IUSSP Conference, Tours, France, July.
- Teller, C. (2007). The Delayed Rural Fertility Transition in East African Countries: Population/Land Pressure and Food/Nutrition Insecurity, 1999–2006. Presented at the Population/Health/Environment Conference, Population Reference Bureau and CIPHE, Addis Ababa, November.
- Teller, C. (2010). Demographic and Socio-Ecological Dimension of Vulnerability, Capacity and Response in Africa. Conference on Disaster Risk Management in Africa, University of Arizona and Bahr Dar University, January.
- Teller, C. and Assefa Hailemariam. (2009). Impact Evaluations of Population, Health and Food/Nutrition Security Policies in Ethiopia: Institutionalizing their Demand, Production and Use. Paper Presented at Conference on Perspectives on Impact Evaluation: Approaches to Assessing Development Effectiveness, World Bank and 3 IE, Cairo, April.
- Teller, C., Assefa Hailemariam and Tesfayi Gebreselassie. (2010). “Revising the Demographic Transition Model for the Volatile Horn of Africa” Demographic Vulnerability and Response to Hazards in Ethiopia. Paper Presented at the PAA Meetings, Dallas, TX, April.
- Teller, C., Assefa Hailemariam, Tesfayi Gebreselassie and Ali Hassan. (2009). Do Population Dynamics Affect Food/Nutrition Security and Mortality? A Delicate Balance of Vulnerability and Resilience in Ethiopia. Paper Presented at the IUSSP, Morocco, October.
- World Bank. (2007). Ethiopia: Capturing the Demographic Bonus. Gender, Development and Demographic Actions, Washington, Luc Christiansen and J. May, June.

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