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**PREVENTING THE
PROLIFERATION
OF WMDs**

Measuring the Success of UN
Security Council
Resolution 1540

Edited by
**Daniel Salisbury,
Ian J. Stewart and Andrea Viski**



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FOREWORD

The successful completion of the second Comprehensive Review of United Nations Security Council resolution 1540 (2004) in December 2016 stood out in a generally dismal period for the framework of legal instruments and institutions on nonproliferation of Weapons of Mass Destruction (WMD) and their means of delivery. The 2015 Nuclear Non-Proliferation Treaty (NPT) Review Conference collapsed so acrimoniously that it spawned new efforts to create a treaty to ban nuclear weapons altogether and a moral argument for mass defection from the NPT by non-nuclear weapon states. The Democratic People's Republic of Korea continued to defy multiple United Nations Security Council resolutions by testing nuclear weapons (and their means of delivery). The 2016 Biological and Toxin Weapons Convention (BWC) Review Conference shamefully failed to produce a meaningful program of work for the future despite markedly increased concerns about the vulnerability of the international community to bioterrorism. Since the third Review Conference of the Chemical Weapons Convention (CWC) in 2013, the use of chemical weapons in Syria and Iraq only worsened, as most authoritatively described by the Organization for the Prohibition of Chemical Weapons (OPCW)—United Nations Joint Investigative Mechanism, including determinations that a State Party to the CWC, Syria, as well as non-state actors, had used chemical weapons on multiple occasions. And, of course, the Conference on Disarmament continued to gain high marks for futility and waste of diplomatic resources on its unerring course to irrelevance and oblivion. Although the Joint Comprehensive Plan of Action and the Nuclear Security Summit process (the latter casting UNSCR 1540 as one of its

most important pillars) brought hard-earned progress toward nuclear nonproliferation, such *ad hoc* but practical efforts reflect weaknesses in the current framework of nonproliferation instruments and institutions.

In contrast, the 1540 Committee agreed on a substantive Final Document for the second Review. The Final Document illustrates that States from every corner of the globe have adopted or adapted laws, regulations, guidance or policies specifically to conform with their obligations under UNSCR 1540, although it also shows several persistent gaps in implementation in certain fields and regions. It finds that most major regional governmental organizations around the world have endorsed implementation of UNSCR 1540, and that dozens of international and civil society organizations work closely with the 1540 Committee to further the goals of the resolution, but that opportunities to improve coordination remain. It highlights the need to overhaul the process for assisting States in implementing the resolution, as it has functioned poorly when it has functioned at all. The second Review Process itself also marked a more transparent, open, and systematically inclusive effort to obtain the views of all those interested in UNSCR 1540 than took place during the first Comprehensive Review in 2009, including civil society organizations. The United Nations Security Council buttressed these findings and recommendations by adopting unanimously, under Chapter VII, resolution 2325 (2016), which gives clearer guidance on what key parties should do for the five years remaining in the current mandate of the 1540 Committee. And in supporting UNSCR 1540, resolution 2325 will join an interconnected web of UNSCRs, as most UNSC counter-terrorism resolutions and all UNSC nonproliferation resolutions reference UNSCR 1540 as a cornerstone in the global effort to combat the proliferation of WMD and WMD terrorism.

This did not happen because UNSCR 1540 consisted of fewer and more easily achievable goals than the other framework instruments and institutions. Arguably, with its more than two hundred obligations and recommendations, UNSCR 1540 places more demands on States to take domestic action in a wider array of fields than any UN Security Council resolution and most international treaties and conventions before or since. Unlike many international instruments that require States to continue to do what they do already or stop doing what they do not do anyway, UNSCR 1540 obliges States to start doing many, many things they generally have not done, from securing WMD-related materials to controlling the financing of proliferation.

From a personal perspective, I found the last eight to ten months of the second Comprehensive Review process more stressful than anything else I had experienced in public service and certainly more stressful than the negotiations leading to the adoption of UNSCR 1540 in 2004, the first Comprehensive Review process in 2009, or the discussions around UNSCR 1977 in 2011. One only needs to examine the public record of the June 2016 open session of the Comprehensive Review or the August 2016 open debate on WMD proliferation in the United Nations Security Council to see sharp divisions in the Committee and the Council. Nonetheless, success did come.

To begin to understand what helped keep the second Comprehensive Review from falling prey to the forces that upended other nonproliferation instruments recently and, more importantly, prompted States to continue to implement the resolution, one needs a deeper understanding of its history, impact, and the challenges and opportunities to its full implementation. To do so, one could search the extensive documentation produced by the 1540 Committee and available on its website, along with relevant reports or documents by governments, international, regional and civil society organizations. One also could peruse issues of *The 1540 Compass*, or the dozens of articles found in academic or policy journals on or referencing the resolution. For longer works on narrower topics in UNSCR 1540, the 2015 *Towards the 2016 Comprehensive Review Former Experts Assess UNSC Resolution 1540*, edited by Nicolas Kasprzyk, Mothepa Shadung and Noël Stott and the 2008 *Implementing Resolution 1540: The Role of Regional Organizations*, edited and co-authored by the late and dearly missed Lawrence (Larry) Scheinman. For a comprehensive book on UNSCR 1540, however, one has to reach all the way back to 2007's *Global Non-Proliferation and Counter-Terrorism: The Impact of UNSCR 1540*, co-edited by Olivia Bosch and Peter van Ham.

Given the importance of UNSCR 1540 in addressing the threat of WMD proliferation, the international community sorely needs an updated, independent, and in-depth look at the resolution. It pleases me greatly to write a few words as a forward for just such a timely book, even more so given the excellent set of contributors. As one of the authors of the resolution, Will Tobey builds on his personal experience with first-hand accounts and interviews with other key officials, including Stephen Hadley, John Bolton, and Robert Joseph to provide new information and perspectives on the origins, purpose and obligations of the resolution. Rajiv Nayan's chapter reflects the importance of regional issues in implementing the

resolution, building on his years of experience in exploring export controls and other nonproliferation tools with a non-Western perspective. In Andrea Viski and Daniel Salisbury's chapters, the book has two exciting young scholars who explore the record to see what States have done to implement the resolution, and what challenges they face. Finally, for years I and others working on furthering UNSCR 1540 have benefited greatly from Ian J. Stewart's original thinking, dedication and persistent support for the resolution. In his concluding chapter, he offers several new ideas on the way ahead for all of us interested in preventing the proliferation of WMD and WMD terrorism. I think that every scholar and policy maker interested in WMD nonproliferation will benefit from reading this work, and I hope that it will encourage others to explore the promise of this resolution in their work.

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Introduction

Daniel Salisbury, Ian J. Stewart, and Andrea Viski

Abstract This initial chapter introduces the study to be undertaken over the course of the book. This includes presenting UNSCR1540 in terms of its purpose and requirements. The chapter also provides an overview of the remainder of the book.

Keywords United Nations Security Council resolution 1540 • Weapons of Mass Destruction (WMDs) • Non-proliferation • Non-state actors • Counter-terrorism • International security

The early twenty-first century saw a growth in national security concerns surrounding non-state actors. Events such as 9/11 and the discovery of the AQ Khan nuclear black market supply network saw the international

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community respond by developing a series of new tools. This included the adoption of United Nations sanctions resolutions, the establishment of new plurilateral initiatives, and the development of new unilateral measures, some with extraterritorial aspects. This new toolset sought to address a variety of challenges and plug existing holes in the non-proliferation regime and efforts to counter WMD terrorism. It was in this context that the United Nations Security Council (UNSC) adopted resolution 1540 on 28 April 2004. The resolution was intended to prevent the development, acquisition or use of Weapons of Mass Destruction (WMD) by non-state actors—defined by the resolution as an ‘individual or entity, not acting under the lawful authority of any State’.¹

In a statement to mark the 10th Anniversary of the adoption of the resolution, the President of the Security Council called upon states to fully implement the resolution’s requirements by 2021, when the mandate of the 1540 Committee, a subsidiary body of the Security Council set up to oversee the implementation of the resolution, will expire unless renewed by the adoption of a further Security Council resolution.² This statement naturally raises a number of questions: what does ‘full implementation’ entail? Are the trends in implementation of the resolution on track to ensure that this potentially ambitious target is achieved? This edited volume considers these and other points. Before doing so, it is helpful first to revisit the origins and purpose of the resolution and to consider the resolution’s place among the range of tools used to further the cause of international peace and security.

First and foremost, resolution 1540 was adopted as a counter-proliferation tool—one of many tools that have been developed to address the proliferation threat. In this sense, it complements many treaty-based and other elements of the non-proliferation regime, such as the Nuclear Non-proliferation Treaty (NPT), Chemical Weapons Convention (CWC) and Biological Weapons Convention (BWC). Around the time that the resolution was adopted, other tools were also being developed to this end, including the Proliferation Security Initiative (PSI), which allows goods to be interdicted in transit at sea. However, amongst these measures, UNSCR 1540 has a uniqueness that merits special attention. Its passage under Chapter VII of the UN Charter means that it is universally applicable amongst UN member states and, crucially, its obligations are legally binding on all states.

The first decade since UNSCR 1540 was passed saw most states respond to the requirements of 1540 through the adoption of legislation, the creation of appropriate governmental structures and the day-to-day implementation of export controls. As such, it is clear that UNSCR 1540 is a powerful, albeit perhaps underappreciated, tool and that it offers an important contribution to international security. This initial chapter sets out to introduce the resolution, identify where it sits in relation to related initiatives, and provide an overview of the rationale for and structure of this study.

UNSCR 1540: RESPONDING TO THE THREAT

The origins of resolution 1540 provide interesting insights as to the resolution's intended purpose (these origins will be explored by Tobey in greater detail in Chap. 2). Certainly there were greatly increased concerns surrounding international terrorism in the early 2000s—especially following the events of 9/11. The primary—and most immediate—driver for the resolution's adoption, however, was as a response to the AQ Khan black-market proliferation network, which saw individuals and private companies systematically assist the nuclear weapons programme of at least three states: Iran, Libya and North Korea.

As such, resolution 1540 requires states to take measures to address a broad spectrum of threats surrounding WMD and non-state actors—and in doing so has plugged several holes in the existing non-proliferation regime. These threats could involve a number of activities, including: non-state actors aiding state proliferation, non-state actors acquiring WMD, or non-state actors using WMD. It is the involvement of non-state actors in state proliferation that has been most common of these three types of risk—both before and since the resolution's adoption.

Resolution 1540 is evidently not the only measure that contributes to preventing non-state actor involvement in proliferation. The precedents for 1540 include both counter-proliferation and counter-terrorism measures. On the counter-terrorism side, they included UNSCR 1373 (2001), which was also adopted by the UN Security Council under Chapter VII powers in September 2001, and obliges states to take a number of measures to prevent terrorism.³ The Group of Eight (G8) also adopted the 'Kananaskis Principles' or 'Principles to prevent terrorists, or those that harbour them, from gaining access to weapons or materials of mass destruction', in 2002 which were heavily drawn upon when drafting the

resolution. A non-binding General Assembly resolution, introduced by India, was adopted in 2003 entitled ‘Measures to prevent terrorists from acquiring Weapons of Mass Destruction’.⁴ Although focusing on countering WMD-terrorism, the clauses of this resolution did ‘urge’ and ‘encourage’ states to take some of the measures that they would later be obliged to through 1540. Precedents on the non-proliferation side also include UN sanctions on Iraq in the 1990s, which provided US officials with the know-how related to the Security Council process.⁵

Thankfully, there have been few instances of non-state actors attempting to acquire or use WMD at any point in the past, with even fewer of these examples coming in the last decade. Cases that have been seen largely fall into two broad categories: terrorism or the threat posed by conflict and instability.

In terms of terrorism, Al Qaeda expressed interest in acquiring a nuclear weapon in the late 1990s, and also in pursuing other forms of WMD.⁶ There have also been other examples of non-state actors seeking to buy and sell nuclear materials.⁷ A number of examples have also been seen where domestic terrorists and terrorist groups have acquired, developed or used chemical or biological materials. Examples illustrate differing scales here—from Aum Shinrikyo’s sophisticated and well-funded efforts to produce the Sarin used in the 1995 Tokyo subway attacks to several efforts of individuals acting alone to produce Ricin.

There has also been significant concern regarding the threats posed by non-state actors involved in conflict and civil wars. These have included fears that a state with WMD or weapons-usable material could collapse resulting in these materials falling into the hands of terrorists and rebels, or that terrorists could steal weapons or materials to produce WMD in the confusion, and potentially use them. Recent examples include the use of chlorine gas by insurgents in Iraq in 2006 and 2007, and allegations surrounding rebel use of chemical weapons in Syria in the years since 2013 (although it should be noted that most substantiated allegations have focused on the Assad regime).⁸

Concern has also been seen regarding the security of nuclear, chemical and other facilities in times of unrest. During the 10th anniversary year of the resolution’s adoption in 2014, the militant group Islamic State of Iraq and Syria (ISIS) seized a Saddam Hussein-era chemical plant storing degraded chemical agents as well as some natural or depleted uranium from a university lab in Mosul.⁹ While the risks in these particular cases

may have been low, they nonetheless highlight the broader uncertainties that emerge from conflict and instability.

While concerns that non-state actors could acquire and use WMD provided the broader security context behind the passage of the resolution, the immediate trigger behind the resolution's adoption related more to the proliferation threat which is perhaps best highlighted by the revelations surrounding the AQ Khan network in 2003 and 2004. While arguably posing a less immediately catastrophic risk than WMD terrorism, the involvement of non-state actors in proliferation to state programmes is certainly more frequently seen.

Although intelligence agencies had been following AQ Khan's activities for many years, it was only in 2004 that the full story regarding his illicit proliferation network came to light. Khan's network linked a variety of individuals, manufacturers and suppliers to supply centrifuge technology to Iran, Libya, North Korea and others. Khan built his network from contacts obtained during his work on Pakistan's nuclear programme. Pakistan also has and continues to advance its nuclear weapons and missile programmes, drawing heavily upon technology sourced from the international market place.

The proliferation threat posed by these non-state actors—although evolved since the passage of 1540 in 2004—is as serious as ever. In fact, the urgency of the issue has arguably been heightened by the nuclear and missile efforts of Iran and North Korea. At least up until the conclusion of the Joint Comprehensive Plan of Action with Iran in July 2015, there was clear evidence that Iran has continually been looking to the international market place to procure sensitive technologies for its nuclear, missile and military programmes utilising non-state actors to evade controls.¹⁰ Successive rounds of UN and EU technology-based sanctions, and export controls in countries around the world have worked to slow the Iranian programme. These restrictive measures have meant that Iranian procurement agents, front companies, and their suppliers have had to become ever more inventive in their attempts to transfer sensitive technologies. The UN and national authorities have designated many of the known entities of concern and their front companies. However, new companies quickly replaced the designated entities, meaning that trade has often continued unhindered.

Less is known about North Korean procurement methods compared to Iran's, although the country has had to look to the international market

place for key choke point technologies. North Korea conducted six nuclear tests since the adoption of UN sanctions in 2006 and also boasts an active ballistic missile programme. Recent years have seen the emergence of new information regarding a North Korean centrifuge enrichment programme—meaning that the country is likely stockpiling both uranium and plutonium for weapons purposes.

Examination of real world cases of proliferation-related trade involving non-state actors reveals that it is not only ideologically-driven individuals—by nationality or other affiliation—that become involved in proliferation. Manufacturers and suppliers of technology have been involved in facilitating the transfer of technology to these programmes—occasionally in full knowledge of the true end use and end user of a transaction. Other industries including those providing enabling services—financial, transport and insurance—can also be exploited to assist state programmes. Although they are often further removed from the goods themselves, these industries can play an important—although often unwitting—role in illicit supply chains.¹¹

Preventing these non-state proliferators—both determined and witting, and unwitting and naïve—from contributing to these and other programmes has always been difficult. Deception and concealment practices are commonplace. More generally, the job of those seeking to prevent proliferation—although being facilitated by new technologies such as electronic surveillance—is getting harder. With the volume of international trade increasing, the manufacturing base of sensitive technologies growing, and supply chains becoming ever more complex, those seeking to prevent proliferation have a great workload. Proliferators are also dynamic, adapting to outwit those seeking to stop them. It is these threats that the resolution seeks to respond to. The provisions of the resolution are summarised below by the editors of this volume; the full resolution text is available, along with the follow-on resolutions, in the book's appendices.

- OPI. Requires states to refrain from providing any form of support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery;
- OP2. Requires states to adopt and enforce appropriate effective laws which prohibit any non-state actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or

biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them;

- OP3. Requires states to take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery, including by establishing appropriate controls over related materials and to this end shall:
- (a) Develop and maintain appropriate effective measures to account for and secure such items in production, use, storage or transport;
 - (b) Develop and maintain appropriate effective physical protection measures;
 - (c) Develop and maintain appropriate effective border controls and law enforcement efforts to detect, deter, prevent and combat, including through international cooperation when necessary, the illicit trafficking and brokering in such items in accordance with their national legal authorities and legislation and consistent with international law;
 - (d) Maintain effective national export, trans-shipment controls and related controls over proliferation sensitive technologies
- OP4. Also establishes a Committee of the Security Council reporting on implementation of this resolution (the 1540 Committee)

The resolution also ‘calls upon’¹² states to adopt control lists (OP6), invites states to provide other states assistance in implementing the resolution (OP7), and calls upon states develop appropriate ways to work with and inform industry and the public regarding their obligations under such laws (OP8);

Finally, OP6 calls upon States to take cooperative action to prevent illicit trafficking in nuclear, chemical or biological weapons, their means of delivery, and related materials; (i.e. interdiction and intelligence sharing).

The framework provided by UNSCR 1540 is by no means the only new tool developed to prevent proliferation and WMD terrorism. As Tobey explores more fully in his chapter, the resolution was adopted in order to plug holes in the patchwork non-proliferation regime and counter-WMD-

terrorism measures. The value added to these agendas by 1540 is important in a number of respects. First, many of the resolution's measures are universal and obligatory due to its adoption as a Chapter VII resolution. This requires all UN member states to take action. Second, the resolution focuses on non-state actors—a dimension of the proliferation threat that was thus far unaddressed. Third, it plugged gaps in the non-proliferation framework, complementing existing bi- and plurilateral, and *ad hoc* arrangements.

The resolution states that it expressly does not take precedence over other non-proliferation measures (OP5, also citing support for other measures in the preamble). Nonetheless, there are clear overlaps between elements of the means to meeting 1540s objectives and the means and objectives of other non-proliferation and counter-WMD-terrorism agendas. However, these overlaps are complimentary, as the resolution seeks to point out, and have to some extent been exploited.¹³ It is undoubted that 1540 has helped strengthen many aspects of these agendas over the past decade. Looking to the future, it is necessary to reflect upon whether 1540, as it is being implemented, fulfils its purpose by filling the gaps left from the other regimes. This will be explored further by Stewart in his chapter.

THIS STUDY: RATIONALE AND STRUCTURE

When the Security Council adopted UNSCR 1540 there could have been no realistic expectation that states could immediately comply. Most states would, after all, have to adopt legislation, to build inter-agency processes, and to raise awareness of the new measures among the stakeholders within their jurisdiction. More than 10 years since the resolution's adoption, it is an appropriate moment to consider the progress made in implementing the resolution. This is particularly true given the conclusion of the 2016 comprehensive review of the resolution's implementation, which also coincides with the mid-point in the 10 year extension of the 1540 Committee's mandate enabled by UNSCR 1977 (2011). UNSCR 1977 also emphasised the importance of the 'sharing of experience, lessons learned and effective practices' and resolution 2325 (2016), passed subsequent to the second Comprehensive Review, further underscored the importance of this process.¹⁴ With this in mind, a number of the chapter authors were involved in organising a civil society forum in February 2014 in New Delhi, India where a number of effective practices were considered.¹⁵

Considering these factors, this book seeks to take a fresh look at UNSCR 1540, the status of its implementation, and its future. The book seeks to provide an original evaluation of progress in implementation and challenges faced during the resolution's first decade and beyond. In doing so, the book will consider the resolution's utility as a non-proliferation tool with a view to, in the final chapters, identifying what further actions are required for the objectives and goals embodied by UNSCR 1540 to be achieved and sustained.

William Tobey (Chap. 2) begins the substantive chapters of the book by outlining the origins and purpose of the resolution. It is only by considering the beginnings of 1540 that a full judgement can be reached as to its effectiveness and achievements. Tobey was closely involved in the drafting of the resolution through his previous role in the US government. He has based his overview on a number of elite interviews conducted with those involved—as he was—in the resolution's origins. In his account he paints a picture of the resolution as a tool that was developed to respond to concerns in three regards: mass terror attacks, a wave of potential proliferation; and, the role of non-state actors in fomenting both threats.

The next two chapters take different approaches to considering implementation status and trends. Andrea Viski (Chap. 3) provides an overview of trends in implementation of the resolution's requirements. Basing her analysis on reports generated by the 1540 Committee and those submitted by national governments, she seeks to provide an original overview of the implementation of the resolution. Rajiv Nayan (Chap. 4) follows this by taking a regional perspective of 1540 implementation. In his chapter, he provides an overview of the traction of the 1540 agenda in different regions around the world. Regional approaches to 1540 have generated significant interest in recent years, with many trends in implementation dependent on the existing regional security infrastructure, and the valuable work undertaken by regional organisations.

Daniel Salisbury (Chap. 5), in his chapter, considers some of the challenges to 1540 implementation that have been encountered over the past decade. This chapter considers a combination of conceptual and practical challenges. Conceptual challenges—such as the perceived legitimacy of the resolution and its provisions—were especially seen around the time of the resolution's passage. They have since been eclipsed by more practical challenges as states struggle with the difficulties of implementing such a broad and complex agenda. The chapter concludes by presenting some of

the potential solutions that have been highlighted by those seeking to improve implementation.

In the sixth chapter, Ian J. Stewart draws on the conclusions drawn in previous chapters to consider the future of resolution 1540 and the 1540 agenda. He considers how two dynamic processes—societal change linked to globalisation and technological advancement—are impacting upon 1540's implementation. He then goes on to explore the future of the 1540 agenda in terms of its scope and mandate, international legal framework, and national implementation.

The final concluding chapter sees the editors draw conclusions, building on those drawn in the separate chapters. It does so by keeping in mind that these conclusions may be of practical interest given the 2021 target imposed by the President of the Security Council for full implementation of the resolution's requirements.

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11. For more information on the role of the maritime transport sector in implementing sanctions, see: United Nations Security Council S/2015/28: 'Sanctions Compliance in the Maritime Transport Sector', New York, 15 January 2015. Available at: <http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2015/28> (Accessed 03 August 2015).
12. The phrase 'calls upon' when used in Security Council resolution's adopted under Chapter VII is not binding on UN member states. It thus differs from phrases such as 'decides', which imposes a binding obligation on UN member states.
13. For example, see: UNSC, 'Resolution 1540 (2004)', clause 5.
14. UNSC, 'Resolution 1977', clause 10: UNSC, 'Resolution 2325', clause 23: UNSC.
15. Conference Proceedings: 'Identification of Effective Implementation Practices by Examining UNSCR 1540 (2004) after a Decade of its Existence', 25–26 February 2014. Available at: <<http://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/csss/pubs/Alpha-IDSAR-report.pdf>> (Accessed 28 December 2014).



A History of United Nations Security Council Resolution 1540

William H. Tobey

Abstract This chapter seeks to provide an original account of the origins and purpose of resolution 1540. The account builds on the author's experience, first-hand accounts, and interviews with former government officials, including Stephen Hadley, John Bolton, and Robert Joseph. It seeks to generate insights into the intended purpose of the resolution, its drafting, the diplomacy surrounding its passage, and the effects that this had on the text which was adopted by the Security Council. In doing so, the chapter also seeks to situate the resolution amongst other non-proliferation and counter-WMD-terrorism tools and initiatives.

Keywords United Nations Security Council resolution 1540 • Weapons of Mass Destruction (WMDs) • Counter-proliferation • Non-proliferation • Non-state actors • Counter-terrorism • International security • Legal history • AQ Khan • UN Security Council • Kananaskis principles • John Bolton

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The Security Council adopted UNSCR 1540 in April 2004 in response to the convergence of three threats: mass terror attacks; a wave of potential proliferation; and, the role of non-state actors in fomenting both threats. Grasping the history of the Resolution is fundamental to analysing the Resolution's objectives and implementation, successes and failures.

With this in mind, this chapter seeks to provide an original account of the origins and purpose of resolution 1540. The account builds on the author's experience, first-hand accounts, and interviews with former government officials, including Stephen Hadley, John Bolton, and Robert Joseph. It seeks to generate insights into the intended purpose of the resolution, its drafting, the diplomacy surrounding its passage, and the effects that this had on the text which was adopted by the Security Council. In doing so, the chapter also seeks to situate the resolution amongst other non-proliferation and counter-WMD-terrorism tools and initiatives.

A PROLIFERATION TSUNAMI

A year after al Qaeda's 11 September 2001 attacks killed almost 3,000 Americans, Washington remained beset by fear. The 9/11 Commission would later blame a failure of imagination for US inability to prevent those attacks,¹ but in the autumn of 2002, no such delinquency abided. On the contrary, policy makers imagined far worse attacks, combining nuclear weapons with terrorism. As then-National Security Advisor Condoleezza Rice later recalled,

The world had looked frightening enough on September 10, 2001, but after the attacks on the Twin Towers and the Pentagon, the threat took on greater urgency. We faced the reality that terrorists had many potential sources to buy or develop what we knew they wanted most: a nuclear weapon capable of making the next 9/11 catastrophic on an unthinkable scale.²

Worse still, American policy makers saw cresting on the horizon a tsunami of nuclear proliferation that would impel the nuclear terrorism threat with even greater force.

During the summer and fall of 2002, evidence piled up that North Korea was cheating on the 1994 Agreed Framework, intended to denuclearise the Korean Peninsula. Near the first anniversary of the 11 September attacks,

John McLaughlin, deputy director of the Central Intelligence Agency (CIA), reported to Rice that the Agency believed the North had built a ‘production-scale’ uranium enrichment facility.³ North Korea’s uranium enrichment program was later confirmed by former Los Alamos National Laboratory Director, Sigfried Hecker on a visit to a then-newly constructed facility at Yongbyon in 2010.⁴

In August of 2002, the National Council for Resistance of Iran publicly confirmed longstanding US suspicions about the Iranian nuclear program by identifying undeclared nuclear facilities under construction or planned at Natanz and Arak. The International Atomic Energy Agency (IAEA) would later report these sites as a uranium enrichment plant and a heavy water reactor suitable for plutonium production.⁵ The IAEA Board of Governors and the United Nations Security Council subsequently found Iran in breach of its Safeguards obligations for these and other undeclared nuclear-related activities.

In October 2002, the National Intelligence Council, which oversees the most authoritative analytical work by the U.S. intelligence community, published a now infamous estimate that warned in the first paragraph of its key judgments:

We judge that Iraq has continued its weapons of mass destruction (WMD) programs in defiance of UN resolutions and restrictions. Baghdad has chemical and biological weapons as well as missiles with ranges in excess of UN restrictions; if left unchecked, it probably will have a nuclear weapon during this decade. (See INR alternative view at the end of these Key Judgments.)⁶

While the Estimate’s central conclusions were later proven false and there was dissent over the nuclear issue, in the autumn of 2002, policy makers in Washington were duty-bound to attend to its key judgments.

In sum, late 2002 saw Washington faced with the prospect that the all too real threat of terrorism on a massive scale would be multiplied a thousand-fold by a wave of nuclear proliferation.

A NEW FACE OF PROLIFERATION

In 1962, a young Pakistani metallurgist named Abdul Qadeer (AQ) Khan took a vacation in the Netherlands. There, he met the woman who would become his wife, and settled first in Delft, and later in Leuven, Belgium,

working toward his Ph.D. Khan studied high-strength metal alloys—materials necessary for high-speed centrifuges. Receiving his degree in 1972, he went to work for a consulting firm that assisted Urenco, a European consortium that enriched uranium for nuclear power plant operators.⁷

On 18 May 1974, India detonated what it called a ‘peaceful’ nuclear explosion in an underground test. In Pakistan, the Indian nuclear test exploded what remained of Islamabad’s already fragile sense of security. Almost ten years earlier, before he came to office, Pakistan’s Prime Minister, Zulfikar Ali Bhutto, had warned, ‘If India builds the bomb, we will eat grass, but we will get one of our own’.⁸ India’s larger population, economy, and conventional military forces had always loomed over Pakistan. Indeed, Bhutto had already secretly begun nuclear weapons work in 1972.⁹ But India’s nuclear test added urgency to the task.

Khan, who by then had access to sensitive Urenco designs for uranium enrichment centrifuges, sent a letter to Bhutto offering to help.¹⁰ Bhutto eventually accepted Khan’s offer, and from the fall of 1974 until late 1975, Khan used his position as an engineer and a translator of design documents to steal some of the most sensitive nuclear weapons-related information in the world.¹¹ He also took lists of manufacturers capable of producing the components required by Urenco.

At the end of 1975, Khan and his family accepted Urenco’s offer of a paid Christmas-time holiday and travelled to Pakistan. They did not return.¹² By then, Khan had what he needed to launch Pakistan’s uranium enrichment program, and eventually to answer the Indian nuclear test. Pakistan would ultimately conduct its first nuclear test on 28 May 1998.

According to former Director of Central Intelligence George Tenet, the CIA followed ‘rumors and bits of intelligence that Khan was sharing his deadly expertise beyond Pakistan’s borders’ for many years beginning in the late 1980s and early 1990s.¹³ Eventually, through patient and skillful work, the CIA and British intelligence, ‘discovered the extent of Khan’s hidden network, which stretched from Pakistan, to Europe, to the Middle East, to Asia’.¹⁴

What the U.S. and British intelligence services uncovered stunned policy makers in Washington and London. The epicentre of the proliferation tsunami they were facing was the Khan Research Laboratories in Kahota, Pakistan. According to Tenet:

Khan and his associates were selling the blueprints for centrifuges to enrich uranium, as well as nuclear designs stolen from the Pakistani government.

The network sold uranium hexafluoride, the gas that in the centrifuge process can be transformed into enriched uranium for nuclear bombs. Khan and his associates provided Iran, Libya, and North Korea with designs both for Pakistan's older centrifuges and for newer, more efficient models. The network also made available to these countries components, and in some instances, complete centrifuges. Khan and his associates used a factory in Malaysia to manufacture key equipment. Other parts were obtained by network operatives based in Europe, the Middle East, and Africa.¹⁵

The Khan network challenged the key assumptions of non-proliferation policy on several levels. First, the cornerstone of that policy, the Non-proliferation Treaty, is premised on the assumption that only nation states are capable of controlling or proliferating nuclear weapons and related technology. The Treaty does not cover non-state actors. Second, non-proliferation policies that supplemented the Treaty assumed that the technical and manufacturing expertise necessary to make nuclear weapons resided in a small number of countries. Thus, in 2002, Nuclear Suppliers Group membership numbered only 40 and did not include even China. The notion that modern computer aided design and manufacturing techniques would enable countries such as Malaysia to produce sensitive equipment was completely novel. Third, U.S. policy makers had assumed that they could effectively stem the spread of proliferation-sensitive technologies by continuing *ad hoc* actions to interdict shipments and impede programs, often in cooperation with other countries. The Khan network, however, proved that the sheer number of possible origins of proliferation was so immense that it required a systematic response by as many nations as possible acting in concert.

Another development also shocked policy makers in Washington and galvanised their determination to fashion better tools to fight proliferation. In December 2002, the North Korean-flagged ship *So San* steamed into the Arabian Sea bearing a cargo of 15 SCUD missiles and related fuel and materials. One possibility was that the shipment was headed for Iraq, in violation of United Nations sanctions, but that was far from clear. Washington had been informed of the shipment and tracked the vessel. Eventually, in an effort to cover up their actions, the North Koreans made a key mistake by creating a "stateless vessel," making it susceptible to international intervention. After Spanish Special Forces rappelled aboard and seized the freighter, a frantic call from Yemen's leader, Ali Abdullah Saleh, to U.S. Vice President Dick Cheney, revealed that his country, not Iraq, was the intended destination for the missiles. Reluctantly, the United

States government asked the Spanish to relinquish the shipment to Yemen.¹⁶ The incident revealed a void in established mechanisms for interdicting proliferation shipments. It became clear that “transshipment of WMD-related material for illicit purposes was not criminalized under international law, and there were limited grounds for seizure.”¹⁷ Moreover, proliferators were often able to stay one step ahead of efforts to stop them, because there were no established channels for communication between governments, clear policies in favour of intervention, or, in some countries, legal bases for doing so.

FASHIONING A SYSTEMATIC RESPONSE

The first visible response to the new face of proliferation was to assemble a coalition of nations committed to and capable of interdicting proliferation shipments. U.S. President George W. Bush announced the Proliferation Security Initiative (PSI) in Krakow, Poland in May 2003. The PSI was a nonbinding agreement formed by nations committed to a statement of principles in support of preparedness and willingness to interdict proliferation-sensitive technology and materials. It was established more quickly and was more flexible than a treaty-based agreement. Thus, it responded directly to the rapidly evolving proliferation threat. While it began with just 11 core states, its members now number more than 100.

Part of the price paid for the speed with which PSI was formed was acknowledgment that the initiative created no new legal authorities; rather it rested on existing international and national law. Thus, while PSI dramatically improved operational capabilities by establishing standard operating procedures and communication links between counterproliferation officials, it left unsolved the legal gaps that failed to criminalise proliferation. Some countries cited these gaps as a reason for not taking action in suspected proliferation cases. Rather than asking themselves “what law prohibits me from acting?” countries would respond to interdiction requests from the United States by asking, “what law permits me to take action?”¹⁸

At the same time, some analysts responded to the increasingly public threat of a proliferation tsunami by advancing a new theory—that nuclear proliferation should be treated outside the bounds of permissible international behaviour. Former George H. W. Bush Administration official Henry Sokolski crystallised this view by suggesting:

[O]ne might start by trying to establish an ‘international common usage’ against any state helping others to acquire weapons of mass destruction (nuclear, chemical, or biological weapons) such as that which already exists against piracy and the trading in slaves. Piracy and slaving are currently activities that can be conducted only outside of the protection of international law. Any nation that encounters someone engaged in these activities is free to act against them, to arrest them, seize their cargo, or force their vessels or vehicles to return to their point of origin.¹⁹

Sokolski also argued that if the United Nations Security Council were to adopt a measure endorsing such a policy, it would be all to the good, but that it would not be absolutely necessary. States could establish customary international law by adopting such practices individually or in groups.

Even before the Iraq War began, the Bush White House anticipated the need to create new mechanisms to fight proliferation. Bush’s deputy national security advisor, Stephen Hadley, a deft and thorough lawyer, believed in the efficacy of international law and was attracted by the argument that proliferation should suffer opprobrium equal to that accorded slavery or piracy. Moreover, it was increasingly clear that *ad hoc* counterproliferation action by the United States was a losing strategy. Too much time was being spent chasing too many shipments with too little success. The United States needed to motivate and marshal the efforts of other countries to fight the threat of nuclear proliferation, particularly by non-state actors. Hadley asked a National Security Council (NSC) staffer to draft a United Nations Security Council Resolution that would mandate these actions. In doing so, Hadley was also seeking to apply some of the legal tools developed under UNSCRs to combat terrorism in the fight against proliferation. These provided legally binding requirements on all states and they could be adopted relatively quickly—important advantages over alternatives such as treaties or General Assembly resolutions.²⁰

There was, however, an inherent difficulty with a broad prohibition on proliferation. India, Pakistan, and Israel remained outside of the Non-proliferation Treaty. For various and important reasons, the United States sought good relations with all of them. They could be expected to resist strongly any measures that would constrain their future freedom of action or condemn their past behaviour. Robert Joseph, who headed the NSC’s counter-proliferation office, was sceptical that a broad condemnation of proliferation could succeed. Instead, he argued that the resolution should

focus on the problems that were at the root of the A. Q. Khan episode: states newly capable of being exploited for proliferation purposes, e.g. Turkey, the United Arab Emirates, and Malaysia; feeble or non-existent export controls; and weak motivation for cooperation. Thus, he favoured a measure that would criminalise proliferation to or from non-state actors, require adoption and implementation of effective export controls, and mandate securing proliferation-sensitive materials.²¹

When a member of Joseph's staff and an NSC lawyer presented a draft resolution to their mid-level colleagues in other departments, including State and Defense, they succeeded in uniting the American policy community—against the proposal. The State Department feared that the resolution would be unpopular and difficult to sell. India, Pakistan, and Israel would oppose the measure. The Nonaligned Movement would see it as an effort to curtail its members' access to advanced technologies. Permanent members of the Security Council, Russia and China, were reflexively suspicious of U.S. initiatives. With wars in Afghanistan and Iraq, the U.S. agenda for the Security Council was already full. The Department of Defense (DoD) worried that the action would constrain its own freedom of action or that of its contractors, particularly with respect to provisions on delivery systems. DoD also doubted that a UN Security Council Resolution would have any effect on actual international behaviour. Even the Justice Department expressed concern that the resolution amounted to unprecedented international legislation.

Nonetheless, throughout the late spring and summer of 2003, inter-agency deliberations continued and the language of the resolution was refined to address, to the extent possible, the interests and concerns of the Departments. In part, this was done by incorporating language from the June 2002 Statement by G8 Leaders at the Kananaskis Summit,²² and by making clear that the draft resolution was not intended to affect existing treaty obligations. Bureaucracies are always more comfortable committing to language that their leaders have already agreed to publicly.

The Kananaskis principles are also known as 'Principles to prevent terrorists, or those that harbour them, from gaining access to weapons or materials of mass destruction'. What was to become resolution 1540 draws on text from five of these six principles. Notably, the Kananaskis principles provided the modifier 'appropriate effective' in relation to export controls and other security measures, which would later puzzle analysts attempting to discern the exact requirements of resolution 1540.²³

In mid-September 2003, Rice held a meeting in her West Wing office to review preparations for President Bush's upcoming United Nations

General Assembly speech. Those also present included Hadley, Joseph, communications director Dan Bartlett, and speechwriter John Gibson. Bartlett pressed for something new the President could announce, recalling PSI from earlier in the year. The group turned to Joseph, who suggested the draft Security Council resolution his staff had been working on with the State and Defense Departments. Gibson was told to add it to the speech. As was routine, the draft was approved by both the State and Defense Departments in conversations between Hadley and his counterparts, before it was finalised.

On 23 September 2003, President Bush told the United Nations General Assembly:

Because proliferators will use any route or channel that is open to them, we need the broadest possible cooperation to stop them. Today I ask the U.N. Security Council to adopt a new anti-proliferation resolution. This resolution should call on all members of the U.N. to criminalize the proliferation of weapons—weapons of mass destruction, to enact strict export controls consistent with international standards, and to secure any and all sensitive materials within their own borders. The United States stands ready to help any nation draft these new laws and to assist in their enforcement.²⁴

Notably, French and Russian Presidents Chirac and Putin, and British Foreign Minister Straw also urged action by the United Nations on proliferation in their speeches to the General Assembly.²⁵ President Putin's statement may have been particularly significant. He said:

A serious challenge to [the] modern world is the proliferation of weapons of mass destruction and [the] means of delivering them. And the most dangerous of all is for them to fall into the hands of terrorists.²⁶

He also apparently endorsed a 'new resolution' to take action against this and other threats, although he seemed to be suggesting a General Assembly, not a Security Council measure.²⁷ While the Russian leader's idea was not as specific as the American proposal, it may have eased the way for Moscow's eventual acceptance of what became UNSCR 1540. Indeed, then-deputy foreign minister Sergei Kislyak maintained to Robert Joseph that UNSCR 1540 had been President Putin's idea.²⁸

Once President Bush had spoken, experts at the State and Defense Departments had little choice but to support a resolution, although there would still be some arguments over exactly how it should be worded. The

higher hurdle, though, would be selling it to other members of the Security Council—particularly Russia and China.

PASSING THE RESOLUTION

The UN Security Council is composed of five permanent members and ten elected members. The permanent members have the right to veto any action being voted on by the Council, and resolutions require a total of nine votes to pass.

Not surprisingly, the U.S. approach to passing a Security Council Resolution is to approach first close allies among the permanent five members, Britain and France. Both countries' leaders had spoken in favour of Security Council action to prevent proliferation at the most recent General Assembly meeting, and both countries' interests in the matter coincided with those of the United States. Moreover, both countries had made a political commitment to the Kananaskis principles because of their G8 membership. Britain and France would welcome the resolution, although the British suggested adding a permanent secretariat to oversee implementation. With their agreement, a draft text was circulated among permanent members of the Security Council in October 2003.

Russia came next in the diplomacy. Perhaps because of President Putin's speech or Russia's participation in the G8 process or because of the legacy of successful U.S.-Russian cooperation in securing nuclear materials, Moscow generally looked favourably on the resolution. Moreover, as the resolution was being considered, revelations of A. Q. Khan's culpability were beginning to seep out. Russia's relations with Pakistan had been frosty at least since Russia's latest Afghan War, so action with the potential to embarrass Islamabad also may have had some appeal for Moscow. The Russians raised some concerns about acting under Chapter VII of the UN Charter, which is reserved for matters of international peace and security and can be seen as an authorisation of use of force.

Last among the permanent five members was China. Hu Jintao had neither spoken in favour of Security Council action on proliferation at the General Assembly, nor attended the G8 Summit in Kananaskis. Furthermore, China and Pakistan maintained close relations including cooperation in civil nuclear energy. Finally and probably most important, China had a larger difficulty—its desire to shield an ally, neighbouring North Korea.

Beijing could not agree to any measure that would seem to authorise U.S. force against Pyongyang's proliferation activities. Pyongyang was alarmed by the PSI, seeing it as a direct threat both to its efforts to acquire nuclear weapons and to sell ballistic missiles. The So San incident, which arguably was a cause for the drafting of the resolution, involved a North Korean missile shipment. Pyongyang's official Korean Central News Agency bitterly denounced the first PSI exercise as 'a prelude to nuclear war' and part of a 'blockade strategy' by the United States.²⁹

In late 2003 and early 2004, Undersecretary of State John Bolton became concerned that negotiations over the draft resolution were bogged down by Chinese objections. Of particular concern was the possibility that a resolution would pass that would implicitly undermine the legitimacy of PSI. A 16 December 2003 version of the resolution called on states 'to cooperate to prevent, and if necessary interdict, shipments that would contribute to' proliferation, but brandishing a veto, Beijing objected to the draft.³⁰

Bolton took over the negotiations with China from the US Mission to the UN, and spent long and patient hours with Chinese UN Permanent Representative Wang Guangya.³¹ Sensitive to being isolated diplomatically, the Chinese were aware that the other four permanent Security Council members generally favoured the draft resolution, and so would at least a majority of the elected members. While Beijing sought to defend Chinese and North Korean interests, it also wanted to avoid standing alone on the issue.

The Chinese were able to insert prefatory language underlining the need for states to resolve their differences on these matters peacefully, and to remove the word "interdict." Bolton secured prefatory language welcoming multilateral arrangements that contribute to non-proliferation, for example PSI, and more importantly operative language calling on states to take cooperative action to prevent illicit proliferation-related trafficking (OP 8). He also gained agreement from permanent Security Council members that the resolution would be enacted under Chapter VII. This was quiet and patient diplomacy at its best.

With general agreement among the permanent members of the Security Council, attention turned to the elected members and non-members, although the two processes inevitably overlapped, with drafts circulating beyond their initial intended audiences. The sweeping reach of the draft resolution, requiring enactment of domestic legislation, evoked an especially sceptical response from the Nonaligned Movement. Moreover,

Pakistan was an elected member of the Council at the time. Following disclosure of his role in selling nuclear weapons technology to Libya, Islamabad had placed AQ Khan under house arrest on 31 January 2004, and he confessed to some of his misdeeds several days later. While raising their sensitivity to developments in New York, the Khan disclosures likely also increased the Pakistanis' desire to cooperate diplomatically to demonstrate good faith on the issue. Yet, the country would also be sure to defend both its interests and its national pride.

The mechanisms by which to best implement the resolution lingered as an issue. Some states, Britain in particular, favoured establishing a Secretariat to monitor implementation. U.S. officials were sceptical of creating a standing organisation, worrying that it would become bogged down in least common denominator standards and definitions. Their frame of reference was PSI, which was an activity, not an organisation, and entailed action not bureaucracy. Eventually, a compromise was reached that established a committee to receive the national reports requested (called upon) by the resolution and to coordinate offers of and requests for assistance in building state capacity. Initially authorised for a period of two years, the Security Council extended the so-called 1540 Committee's term several times, most recently until 2021.³²

Knowing that there might be greater than usual resistance to the draft resolution, the permanent members of the Council reached out not only to elected members, but also beyond. On April 22, the Council held an open session and more than 30 member states offered statements.³³ Significantly, at that session Pakistan opposed adopting the resolution under Chapter VII of the UN Charter, but a week later, Islamabad's representative voted in favour of the Resolution enacted under that provision. He explained that the serious efforts by the sponsors of the draft to accommodate Pakistan's concerns, and the revisions that followed, allowed his country to support the measure.³⁴

On 28 April 2004, in a meeting lasting less than an hour, the Security Council unanimously adopted resolution 1540, which embodied all three mandates called for by President George Bush seven months earlier: criminalising proliferation to or from non-state actors; enacting and implementing export controls; and securing proliferation-sensitive materials. It also endorsed efforts to stem illicit trafficking, such as PSI. All this was mandated under Chapter VII of the UN Charter.

Implementing the Resolution

Passing a legal requirement to take action (as difficult as it was) is one thing; implementing it effectively is quite another. The Khan affair revealed two problems: many countries were neither motivated to pursue, nor capable of taking, effective action against proliferation. The legal requirements of the Security Council Resolution addressed the motivation problem, or at least provided a sound basis for diplomacy to do so. However, there still remained significant gaps in the capabilities of many countries. Malaysia, for example, had no idea that A Q Khan was using its territory to manufacture parts for centrifuges capable of uranium enrichment, and no expertise to prevent it. The following chapters will explore both the implementation of the resolution and these challenges in more depth.

While the Resolution requires countries to report on their activities to implement its provisions, and the United Nations established a committee to assist nations in doing so, these measures are insufficient to improve capabilities. The sharing of best practices across the whole spectrum of activities to prevent nuclear terrorism—security, detection, border and export controls, intelligence and law enforcement, incident response and recovery—is necessary to maximise international efforts. This requires bilateral and multilateral cooperation among technical experts.

Following the pattern established by the PSI, a voluntary agreement among nations committed to a common set of principles, the Bush Administration advanced the Global Initiative to Combat Nuclear Terrorism. Appealing to the success of longstanding U.S.-Russian efforts on nuclear security, the Administration enlisted Russia as its partner and co-host of the initial meeting, which was held in Rabat, Morocco in October 2006. Membership has grown to 85 countries, and they are committed to a full scope of actions necessary to prevent and deal with nuclear terrorism. They also undertook a series of workshops, information exchanges, and exercises that improved their ability to detect, prevent, and respond to efforts by terrorists to gain control of and use fissile material or nuclear weapons.³⁵ Thus, the Global Initiative to Combat Nuclear Terrorism can provide some of the practical means to implement some of the most important legal requirements of the resolution 1540.

UNSCR 1540 IN CONTEXT

The framework provided by UNSCR 1540 was not the only new tool developed to combat proliferation and WMD terrorism. These tools form a complex, sometimes overlapping, and growing web of measures to stem the proliferation of WMD. In fact the resolution rests at the nexus of several international security agendas and initiatives. They fall into three broad areas: tools to prevent proliferation (non-proliferation); tools to safeguard WMD security; and tools to prevent terrorism (counter-terrorism). The value added to these agendas by resolution 1540 stems primarily from its universal and mandatory nature under Chapter VII of the UN Charter. The resolution's focus on non-state actors is also important.

The 'non-proliferation regime' is a set of rules, norms, and institutions, which has impeded, but not halted, 'proliferation of nuclear weapons capability'.³⁶ The regime is also often thought to include chemical and biological weapons and their means of delivery (usually missiles). The legal foundation of the non-proliferation regime is based on several formal treaties—the NPT, the CWC and BWC—which prohibit the transfer of WMD-related technologies between states. Resolution 1540 notes that 'none of the obligations set forth in this resolution shall be interpreted so as to conflict' with states' commitments under these treaties.³⁷

States use export control laws to ensure that they comply with their legal obligations under these treaties. These generally require companies that wish to export 'controlled' or listed technologies to seek government approval—such as export license—before shipping the goods. These controls are coordinated at the international level between the main supplier states through the multilateral regimes. There are four primary export control regimes (the NSG, Australia Group, MTCR and Wassenaar). These maintain common guidelines on transfers and lists of controlled technologies. Regime members are obliged to use these lists and adhere to the guidelines, and many non-members also incorporate the lists into their national controls. Resolution 1540 requires states to 'establish, develop, review and maintain appropriate effective national export and transshipment controls'.³⁸ The resolution also recognises the utility of 'effective national control lists', although stops short of linking this to the regimes, calling upon states to pursue 'the development of such lists' at the earliest opportunity.³⁹ In addition to recognising the utility of lists, the resolution also 'decides' that states shall establish end use controls.⁴⁰

A further non-proliferation instrument, increasingly used since the end of the Cold War, are UN sanctions. These, like resolution 1540, have been adopted under Chapter VII of the UN Charter and are therefore legally binding on states. Since the early 2000s, these have been limited to “targeted” measures, to restrict the commercial and movement rights of certain groups, states, and entities connected to Iran’s and North Korea’s nuclear and missile programmes.

Resolution 1540 complements UN sanctions. In particular, it requires states to put in place many of the tools necessary to implement sanctions. For example, it requires states to implement export controls, border controls and financial controls, all of which contribute to measures mandated by sanctions resolutions. However, sanctions are targeted against specific states, whereas resolution 1540 is universal.

Nuclear security is defined by the IAEA as ‘the prevention and detection of, and response to, theft, sabotage, unauthorised access illegal transfer or other malicious acts involving nuclear material, other radioactive substances, or their associated facilities’. Nuclear security measures have expanded significantly in recent years, catalysed by the Nuclear Security Summits. States have committed to various initiatives such as the Convention on the Physical Protection of Nuclear Material (CPNMM), which create physical protection requirements.⁴¹ These form part of what has been described as a ‘messy “nuclear security” landscape’ consisting of a ‘patchwork of formal and informal instruments’.⁴² Resolution 1540 advances the nuclear security agenda by being the first universal and legally binding measure enjoining states to ‘develop and maintain appropriate effective physical protection measures’, and makes reference to the CPNMM in the preamble.⁴³ The joint statement at the 2014 Nuclear Security Summit reaffirmed participants’ commitment to Resolution 1540 implementation.⁴⁴ The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, which provided the antecedent language for UNSCR 1540, funded and executed many important projects to secure dangerous materials.

The third agenda closely related to Resolution 1540 is that of counter-terrorism. According to Stephen Hadley, the White House saw a nexus between terrorism and proliferation as an immense threat. Keeping nuclear weapons out of the hands of terrorists was their highest priority. Thus, it was natural to try to apply some of the legal tools developed after the September 11th terrorist attacks to the burgeoning proliferation threat. The problems were related, reasoned policy makers, and so should be their

solutions.⁴⁵ Sometimes, this link has been made explicit. For example, diplomats in New York sought to foster collaboration between the 1540 Committee and the Security Council Committee established pursuant to resolution 1267 (1999) which was set up to monitor sanctions against Al Qaeda and the Taliban, as well as the Security Council Committee established pursuant to resolution 1373 (2001).⁴⁶

CHAPTER CONCLUSION: A HISTORY OF UNITED NATIONS SECURITY COUNCIL RESOLUTION 1540

At the outset, many nations questioned the legitimacy of UNSCR 1540. It was initially seen by some countries as a plot to inhibit legitimate technology transfer, or to evade the need for an inclusive treaty process, or to establish international legislation in ways overreaching proper Security Council authorities. Nonetheless, over time it has gained legitimacy and advanced the cause of preventing proliferation, primarily because it filled an obvious gap. It has become one of the building blocks of the international bulwark against nuclear proliferation and terrorism.⁴⁷

Importantly, according to Richard Cupitt, the foremost expert on implementation of the resolution at the State Department, it has had a meaningful impact on the behaviour of nation states:

Ten years on, we have many examples of the considerable impact UNSCR 1540 has had. Dozens of states, as well as the European Union, have changed their laws, regulations, policies, and programs to mesh with the more than two hundred individual obligations the resolution establishes. Many international, regional, and subregional organizations have incorporated elements of the resolution into their mandates and work programs. A number of civil-society organizations have projects to help further implementation of the resolution.... UNSCR 1540 has become a foundation for the practical business of non-proliferation.⁴⁸

To be sure, the work mandated by resolution 1540—as the following chapters on implementation trends will show—is not complete. Inadequate security persists at facilities housing fissile materials. Border controls are porous or non-existent in some regions of the world. States still struggle to interdict trafficking in proliferation-related technology and materials. The legal requirement, however, to correct these deficiencies is clear.

Resolution 1540 was an unprecedented action to address an extraordinary threat. In requiring nations to implement specific national legislation to prevent proliferation, it exceeds the common reach of the Security Council. While it can neither properly motivate nor equip nations to fight proliferation, it provides the legal basis for diplomacy and cooperation to do so. It is, therefore, one of the most important legal instruments for combatting nuclear terrorism and proliferation since the adoption of the Non-proliferation Treaty itself.

NOTES

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UNSCR 1540: Implementation Trends

Andrea Viski

Abstract This chapter discusses resolution 1540 implementation trends through the lens of several pressing issues related to the role and content of the resolution itself, in order to identify the state of worldwide implementation as well as to suggest ways to achieve greater overall compliance. A review of the data contained in the 1540 matrices is also included.

Keywords United Nations Security Council resolution 1540 • Weapons of Mass Destruction (WMDs) • Implementation • 1540 matrix • International law • Export controls • 1540 Committee • 1540 national reports • 1540 comprehensive review

As the previous chapters have noted, United Nations Security Council Resolution 1540 was passed by the Security Council under Chapter VII of the United Nations Charter, and therefore binds all states to its implementation. While the resolution requires states to ‘have and enforce appropriate and effective measures against the proliferation of nuclear, chemical, and biological weapons (WMD), and their delivery systems’, it is nevertheless the responsibility of national governments to implement the measures delineated in the resolution. This chapter will discuss resolution

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1540 implementation trends through the lens of several pressing issues related to the role and content of the resolution itself, in order to identify the state of worldwide implementation as well as to suggest ways to achieve greater overall compliance.

Resolution 1540 is only as strong as the commitment and success of countries in its implementation. Identifying implementation trends is important in order to identify paths for the achievement of greater overall implementation in ways that make sense given existing parameters. The president of the Security Council in his remarks to mark the 10th anniversary of the adoption of the resolution called upon states to ‘fully implement’ the resolution’s requirements by 2021—17 years after the resolution was first adopted.¹ In the author’s view, the full implementation of resolution 1540, that is, the holistic implementation in both legislation and enforcement of all resolution provisions by all states, while an honourable goal, should not be an objective because it cannot be measured, agreed upon, proven, or realistically achieved. Full implementation can still be an ideal—insofar as perfection exists—as a concept to work towards in a more abstract sense, while focusing concretely on ways to increase implementation given realities on the ground.

Before discussing national implementation trends, the chapter will first demonstrate the significance of a resolution of this nature as a binding instrument from an international legal perspective. The chapter will then discuss the sources available in order to track implementation as well as what can be done with tools such as the 1540 matrix in order to reach broader conclusions regarding national implementation. The specific example of trade control and related measures of Operating Paragraph (OP) 3 of the resolution will be used to underscore the trends discussion and exemplify the utility of understanding them, while the conclusions of the 1540 Committee reports, in particular the 2016 Comprehensive Review, will be used to discuss implementation on a more general scale. Finally, the chapter will identify specific issues related to national implementation that must be tackled in order to strive for universal implementation, while suggesting concrete measure to that effect.

RESOLUTION 1540 IN INTERNATIONAL LAW

Universally binding international legal instruments are a relatively new development, and it is helpful to take a step back and observe the significance of resolution 1540—in particular its universally binding nature—

from a broader international legal perspective. The past decades, especially in the post-Cold War context, have shown that difficulties stemming from within states can take on international dimensions. As discussed in the other chapters, due to the emergence of a globalised world economy as well as rapidly evolving technology, countries are more interlinked than ever, and it is no longer sufficient for the largest industrial nations alone to implement non-proliferation measures if proliferation is to be prevented. The threat of the development of transnational trafficking networks, with the potential involvement of non-state organisations, is present in any state. In fact, such networks are often targeted to states without any non-proliferation measures in place. In sum, due to globalisation, any country can serve as a trans-shipment point, supplier of fake documentation, proliferation financing, or a variety of other roles along the supply chain that facilitate the proliferation of WMD. On the flip side, every country can also contribute to stemming the threat of proliferation, thereby establishing a basis for the binding nature of Resolution 1540.

The resolution is an example of how international law has adapted to the internationalisation of national shortcomings in the area of WMD acquisition, threat or use by non-state actors. In particular, and as Tobey set out, the resolution was passed as a response to “an extensive gray market of nuclear and nuclear-related goods and technologies”. This was particularly the case following the discovery of the AQ Khan network, the terrorist attacks of 11 September 2001, and the threat made by non-state organisations to try to acquire and use a WMD.

As a consequence, the resolution obliges all states to implement a large number of measures within their states that can affect domestic politics, a step not previously part of international legal tradition. The Westphalian origin of international law was to solve interstate issues without interfering in national policy—that is, to tackle issues between states, not stemming from within them. As put by the legal scholars Anne-Marie Slaughter and William Burke-White, ‘by ensuring that governments actually function in pursuit of collective aims, international law is starting to play a far more active role in shaping... national political choices.’²

Moreover, while the resolution targets WMD acquisition by non-state actors, in reality the measures it calls upon states to implement have consequences that go beyond this issue. Per Operational Paragraph 3 of the resolution, measures such as the establishment of accountability and control, physical protection, border controls, law enforcement, export controls,

and many others, have consequences on non-proliferation to states as well as non-state actors. The measures even go beyond the scope of non-proliferation, as export controls, for example, have economic and political effects, as their implementation means potentially restricting trade of dual-use items. The consequence for national implementation of resolution 1540 of this new international legal trend is that all states are bound to its implementation, a task that is of almost unprecedented scope and significance given the diversity existing in national political commitment and resources to compliance.

IMPLEMENTING THE TEXT: UNDERLYING ISSUES

Understanding implementation trends necessitates a closer look at the resolution text from an analytical perspective of how “implementable” it is, in order to understand why countries have or have not been successful in compliance. There are several underlying issues that can help provide background for an overall discussion of implementation trends.

First, the scope of the resolution text is broad. It encompasses not just chemical, biological, or nuclear proliferation, but all three. It also includes delivery systems therefore regulating in one document what has already in some cases been delineated in international law regarding one specific area of one specific kind of threat. Indeed, the resolution calls on states to ‘promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral treaties to which they are parties, whose aim is to prevent the proliferation of nuclear, biological or chemical weapons.’⁷³ In practice this refers to literally dozens of multilateral instruments, from the Biological and Chemical Weapons Conventions, to the Nuclear Non-proliferation Treaty, to the Code of Conduct on the Safety and Security of Radioactive Sources, and beyond.

Therefore, the usage of the umbrella term ‘nuclear, chemical, or biological weapons and their means of delivery’ achieves the goal of bringing greater attention to the threat of the use of such weapons by non-state actors to the international community, but the practical consequence of using the term likewise multiplies the difficulty in implementing national laws that protect against all the types of threats referred to. The risk presented by the divergence of nuclear material, equipment and technology is different from that of chemical or biological materials, equipment and technology, and in national systems, many countries have different laws that pertain to each type of threat.

Based on the author's experience in capacity-building on 1540 compliance, the task in some countries of merely amalgamating existing national laws that refer to the many areas of the resolution is an enormous task in itself. Once that initial stocktaking is completed, identifying the gaps in national adherence to the resolution and deciding the necessary measures involved in filling them is an extended and perpetual process that takes time and political commitment in order to be done properly. Commitment to enforcement, once all necessary legislation is in place, takes an even greater effort in enshrining non-proliferation in day-to-day activities—something that cannot be accomplished overnight. Therefore, implementation trends must be considered against realities on the ground, where factors such as commitment and security culture cannot be quantified.

As mentioned, the resolution is broad also in terms of what it expects from states. In general, it could be argued that the broader the requirement, the more difficult it is to implement in practical terms, and the more room exists for interpretation. The resolution does not specifically address in its text the consequences of non-compliance, such as possible enforcement actions or sanctions, giving states leeway in terms of the extent to which they pursue implementation. In fact, one concern was whether states would actually submit their national reports, and indeed a decade later, as of 2014, a handful of states still have not done so.⁴

In 2013, Resolution 2118—concerning use of chemical weapons in Syria—may have presented an important step in this area by calling on states to “inform immediately the Council of any violation of resolution 1540 (2004), including acquisition by non-State actors of chemical weapons, their means of delivery and related materials, in order to take necessary measures.”⁵ This Resolution could therefore introduce a new requirement for states that could have consequences for cases of non-compliance with resolution 1540. However, in cases of non-compliance, the Security Council would be hard-pressed to impose sanctions or other punishment due to the lack of specific authorising language in the resolution and to a greater extent the opposition such actions would face. In addition, the interpretation of ‘violation’ can be broad: does it mean not implementing every single provision of the text perfectly, or does it mean aiding the acquisition of nuclear, chemical, biological, or delivery systems to a non-state actor?

Another aspect of the text with direct influence on implementation is wording, in particular the use of the terms ‘appropriate’ and ‘effective’. These terms come up in Operational Paragraph 2 (OP2), where the

resolution calls on states to ‘adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them’.⁶ In OP3, the terms are used again, in almost every subparagraph, at times with just the word ‘effective’, at other times with both ‘appropriate’ and ‘effective’. In OP6, ‘effective’ is used in relation to the establishment of control lists. Presumably, measuring compliance would hinge on a thorough understanding of what the appropriate and effective implementation of each operating paragraph would entail. The 1540 Committee of the Security Council, established in OP4 of the text and whose existence has been extended in subsequent resolutions, although not mandated by the text itself to interpretation, has made efforts to organise and define specific necessary measures for compliance. An analytical discussion of these measures will be presented in the next section.

One additional factor weighing on implementation trends is the proposition regarding the difficulty for resource-strapped countries to implement the resolution. This proposition rests on underlying issues of legitimacy and feasibility. Regarding legitimacy, some resource-strapped countries have expressed that the insistence on implementing non-proliferation initiatives could be an excuse to decelerate economic development and hinder competitiveness. Some states have expressed that in the drafting of the resolution, the Security Council usurped the powers of the General Assembly and other organisations. This implies that some countries felt excluded from the resolution’s negotiations, fuelling the viewpoint of a North-South divide and voiced, around the time of the passage of the resolution, by some members of the Non-aligned Movement. Weak legitimacy can have a direct effect on implementation, as countries that feel excluded from the drafting process may have less political commitment to comply.

The feasibility of implementing the Resolution has been referred to often in 1540 literature, insofar as using the general argument that countries are too poor, too weak, too inexperienced, or lack the human resources for implementation. Due to the extent to which this point has already been expounded, it will not be discussed at length in this section. These challenges are further discussed by Salisbury in his chapter. It is rather plain and logical that implementation hinges in part on having

necessary political commitment and resources, and that any analysis of implementation trends should keep this in mind. However, this point should (a) not be used as an excuse for non-compliance, especially a decade following the passage of the resolution, and (b) put in a constructive light of how implementation can be increased notwithstanding resource and other issues.

Over ten years after the adoption of resolution 1540, a stocktaking of worldwide implementation may shed light on how the issues discussed in this section have been handled, or what effect they may have had on compliance. Yet understanding how the resolution has been implemented is not at all a straightforward task; indeed, compliance with the resolution is not a black or white concept and must be understood in light of the multitude of realities on the ground.

SOURCES AND OUTREACH

The 1540 Committee's mandate, under OP7 of the resolution, is to report to the Security Council 'for its examination on the implementation of this resolution'.⁷ The Committee's mandate was extended by resolutions 1977 and 1810. Resolution 1977 further decided that the '1540 Committee will conduct a comprehensive review on the status of implementation of resolution 1540 (2004), both after five years and prior to the renewal of its mandate, including, if necessary, recommendations on adjustments to the mandate, and will submit to the Security Council a report on the conclusions of those reviews, and decides that, accordingly, the first review should be held before December 2016'.⁸ In addition, that resolution tasked the Committee with the 'compilation and general examination of information on the status of States' implementation of Resolution 1540 (2004) as well as States' efforts at outreach, dialogue, assistance and cooperation'.⁹ Resolution 1810 requested a comprehensive review to be submitted by 2009.¹⁰ To date, two comprehensive reviews have taken place, one in 2009 and one in 2016.

In order to fulfil its mandate, the 1540 Committee relied, in large part, on national reports made by countries to the Security Council regarding their implementation of the resolution, in order to be compliant with the resolution text that mandates them to do so within two years. One of the most valuable sources of information regarding implementation consists of these national reports. According to OP4, states must 'present a first report no later than six months from the adoption of this resolution to the

Committee on steps they have taken or intend to take to implement this resolution'. While not all states met the required deadline, by 2017 almost all have submitted a report.

National reports have varied widely in length, specificity, and quality. Working from the reports, national legislation can be identified, patterns discerned, gaps revealed, and even the shortest and most poorly written reports can be indicative of a level of compliance and be a useful source of information. Reports consequently provide a rather good lens into implementation trends, although they must be taken with a grain of salt. They are written by states, in whose interest it is to demonstrate compliance. However, while some reports are detailed and list all specific aspects of legislation and enforcement that coincide with the operating paragraphs of the resolution, many other reports are short, broad, and leave out a lot of information. Therefore the national reports can sometimes paint a false or incomplete picture, and by no means does the submission of such a report equal compliance. The reports cannot be relied upon as a sole primary source for discerning implementation trends but rather as a clue that must be fit into a larger picture. They provide a starting point from which to begin tracking patterns and pursuing comparative study.

Besides these national reports, implementation information is also available from national competent authorities, or organisations that compile national implementation research beyond the reporting requirements of the resolution.¹¹ Journalistic sources and first-hand information gathered through outreach and assistance activities can also add pieces to the puzzle.

Based on the national reports, as well as other sources mentioned above, the 1540 Committee developed its own implementation 'matrices' as of 2005 that can be used to organise this vast influx of information. These matrices list measures for compliance, and do so from both a legislative and enforcement viewpoint. The 1540 Committee, in drafting the matrices, use the 1540 national reports as well as supplemental information supplied by governments and inter-governmental organisations. The Committee states that the matrices are a 'reference tool for facilitating technical assistance and to enable the Committee to continue to enhance its dialogue with States on their implementation of Security Council Resolution 1540'.¹²

The matrices offer an interpretation of what the Security Council's requirements for 1540-related measure mean in practice. They are therefore a useful tool for understanding and organising the varying measures

necessary for the implementation of the resolution, and for establishing a basic rubric for the domestic implementation of nuclear export controls in particular. They shed light on the vague wording of the resolution, especially in areas where words such as ‘appropriate’ and ‘effective’ are used. However, the matrices demonstrate the complexity of discerning implementation trends. There are dozens of measures to be taken by states in order to comply with the broad resolution text. Indeed, in the Comprehensive Review of 2009, the 1540 Committee noted ‘the 1540 matrix has proved to be a very useful tool to reflect information about actions taken by States in fulfilment of their obligations derived from resolution 1540’. Nevertheless, some States have highlighted the complexity of working with the matrix. Some revision of the matrix template in 2013 has thus taken place.

It remains unclear whether these changes were helpful. The new template splits many of the responses into three elements related to nuclear, chemical and biological (i.e. does the country have a catchall control that is capable of stopping goods related to nuclear, chemical and biological weapons). This makes comparing data from old and new matrices problematic and raises questions about how best to analyse the data. The 1540 Committee, group of experts, and outside experts continue to wrestle with these questions. Despite this extra level of detail, an initial review of the new data suggests that the overall implementation picture, from both a regional and a thematic perspective, is broadly similar. For these reasons, data corresponding to the older matrix format was used for the analysis in this chapter.

Nevertheless, the 1540 matrices are the only existing official barometer of national implementation of the resolution. They serve as a rather useful instrument for gathering a list of what measures are considered to be essential for appropriate and effective implementation, and do give insight into implementation trends on a general level.

IMPLEMENTATION TRENDS: CASE STUDY OF TRADE CONTROL-RELATED OP3 MEASURES

Using the national reporting system required by the resolution, as well as the individual 1540 matrices, it is possible to follow the progress of individual states in detail. The matrices are used by the 1540 Committee to track general compliance with the entire resolution, as they have discussed in the 2009 and 2016 Comprehensive Reviews, or if one is interested in a

specific single requirement or group of measures, the matrices offer a simple way of extracting implementation information. In this section general implementation will be discussed insofar as that information exists officially as the findings of the 1540 Committee. Firstly, however, trade control-related measures of OP3 will be used as an example case in order to show (a) to what extent and how the matrices can be used to discern implementation trends, (b) implementation trends related to OP3, (c) how such information can be analysed, and (d) how existing information can inform approaches to increase compliance. The specific field of trade control has been chosen for this chapter because it provides a compact view that can be a starting methodology for further and expanded work into all parts of the resolution.

The structure of the trade control section of the 1540 matrices is as follows. Fulfilment of each measure or requirement identified in the matrices is noted by country.¹³ A small example has been provided in Table 3.1: it shows a small part of a larger matrix which is an amalgamation of all the 1540 matrices. The rows list the 179 country names and columns list the 26 measures relating to OP3 and trade controls. In the graphs below, the 26 measures have further been broken down by type, for example those measures relating to border controls or control lists, to make graphing clearer.

Since compliance with resolution 1540 rests on two factors, both legislative and enforcement compliance, two separate sets of data provide information for each measure. Separating the data in this way is necessary because simply having legislation in place does not mean that mechanisms exist for enforcement or that they are indeed enforced properly. The matrices use data related to whether certain measures are addressed in legal documents but also rely on case law and evidence of enforcement provided by national reports to the 1540 Committee.

The first data set therefore tracks progress regarding the implementation in national legislation of OP3 trade control measures. This means

Table 3.1 Structure of the 1540 matrix

<i>Country name</i>	<i>Border control</i>	<i>Technical support</i>	<i>Control brokering</i>	<i>Enforcement</i>
Country A	X		X	X
Country B	X		X	X
Country C	X	X		X

identifying whether each of the measures as specified by the 1540 matrices have been integrated in national jurisprudence. A second data set does the same exercise, by country, except that it designates whether each has adopted enforcement mechanisms related to the measures. Enforcement is more difficult to measure than legislation because in theory, once a law is written, some form of legislative compliance has occurred. It is more difficult to prove effective enforcement because this would rest on verifying every single country's executive and judicial system, a task so large that once a reliable set of data were to be finally compiled, it would likely be out-dated. The 1540 Committee therefore assesses enforcement based on available information provided by countries in their national reporting as required by the resolution and official supplemental information and uses this to ascertain whether enforcement of measures has taken place.

The system used by the 1540 Committee to identify compliance with specific export control measures employs three values to mark compliance: 'X', question mark, and blank. An X signifies that the country has complied with the noted measure. This is deduced either from the state's assertion that it has implemented the relevant measures or the 1540 Committee's own findings based on specific references in the country's domestic law or executive measures. However, the Committee notes that an 'X' does not necessarily equal full compliance, but rather evidence of steps completed to comply, or as the Committee states, 'evidence that the State has taken a measure or measures relevant to a particular field'.¹⁴ A question mark signifies that while there is evidence of compliance in a country's 1540 report or other sources relating to national implementation, doubt lingers as to whether the measure has in fact been implemented due to inconsistencies, lack of pertinence of the information referenced, or because a copy of the legislation has not yet been located or is not available for consultation. A blank means that a country has not provided any information to the 1540 Committee regarding the implementation of the said measure, and that no information exists in the country's 1540 report or elsewhere to suggest that the measure has been implemented.

The question mark and blank are treated as equal values in the statistical calculations performed to retrieve general implementation trends in this chapter for the sake of simplicity and clarity. This is also done because a question mark usually indicates that a country has begun taking steps towards implementation, but that the actual implementation has not occurred, at least not in the comprehensive and effective way it should in order to fully comply with the resolution. While making this generalisation

might hinder the goal of specifically representing the progress of states individually, it greatly helps conceptualise the data, identify patterns, and draw conclusions in a comprehensive manner.

The implementation data retrieved determines which OP3 trade control measures have the most compliance and which are the most rarely implemented. This allows for an analysis of why this is so, which obstacles stymie the implementation of measures with weak rates of compliance, and how these obstacles might be overcome in order to strengthen compliance with each measure across the board. Second, the data is analysed by country, allowing insights into which countries are the most compliant with the resolution and which are lagging behind. Because it would be impossible to graph global compliance in a synthesised way that would fit onto one page, countries have been grouped into regions, and separate figures are presented for each. These groupings are the author's own as the 2016 Comprehensive Review Final Document organizes matrices data by measure rather than groupings by countries. Grouping countries this way further demonstrates which regions are more compliant or less compliant with the resolution. Taken as a whole, this analysis will help construct an idea of how to approach implementation in a way that makes sense on the ground, using priorities identified in the data as a compass for what work remains to be done.

As previously mentioned, the matrix results are based on a variety of available sources regarding national implementation, and not just national reports to the 1540 Committee. For this reason, the matrices present a wellspring of data that can be used to identify and compare patterns, trends, and relevant issues. Nevertheless, using the 1540 matrices has several shortcomings that deserve to be addressed in order to understand how far the data can go in presenting a realistic picture of Resolution 1540 implementation.

First, as mentioned previously, an "X" does not necessarily mean full compliance with a measure, but rather it is an indication that concrete measures have been taken towards compliance. For example, if a country has an "X" under border control, it may not mean that every single measure related to border control as presented in the best practices model has been implemented. In addition, while the matrices demonstrate implementation of legislation and enforcement, the efficacy of measures and consistency of their employment are not clear.¹⁵ Therefore, the data should be treated as an indication of progress, rather than a testament to full compliance.

Second, the information compiled from the matrices is not necessarily precise in every case. This is due not only to human error, which inevitably occurs during the compilation of so much information, but also, and more importantly, to time lapses. While the matrices indicate a country's implementation of specific measures, they do not indicate when that country enhances existing measures to meet their obligations under Resolution 1540 on a real-time basis.¹⁶ The Committee itself admits that measuring the date of implementation of the listed measures would provide helpful information regarding potential difficulties countries face in complying with the resolution. While this is a valid weakness of using the matrix for the current study, it is clear that just surveying the status of implementation without the time component already provides a significant lens into which measures are more or less difficult for countries to implement.

Another weakness of the methodology is that the matrices do not address non-state authorities. While this perhaps does not seem a pertinent issue in a discussion of national implementation, many nations are in fact heavily influenced or bound by their membership in supranational organisations. Correlating to this issue is that several territories or special administrative regions exist that form independent laws and enforcement procedures, but the 1540 Committee does not have the power to gather information from such entities, even if such information would be relevant to the objectives of resolution 1540.¹⁷ Finally, matrices may not be completed for jurisdictions that are not members of the United Nations as the resolution is binding only on UN member states. States that are not UN member states could potentially be used by non-state actors to undercut the resolution objectives.¹⁸

Notwithstanding the shortcomings of the methodology used in this study, the matrices provide an effective guide, or perspective, into patterns and trends associated with the national implementation of individual measures related to trade control-related measures of OP3. The issues described above must be kept in mind while reading the observations in this chapter without forgetting that the objective is to reach conclusions based on the data that will aid in the more effective domestic implementation of the resolution.

Implementation: Data by Measure

Two compiled data sets—one of legislation and one on enforcement as previously mentioned—were used to evaluate which measures have been

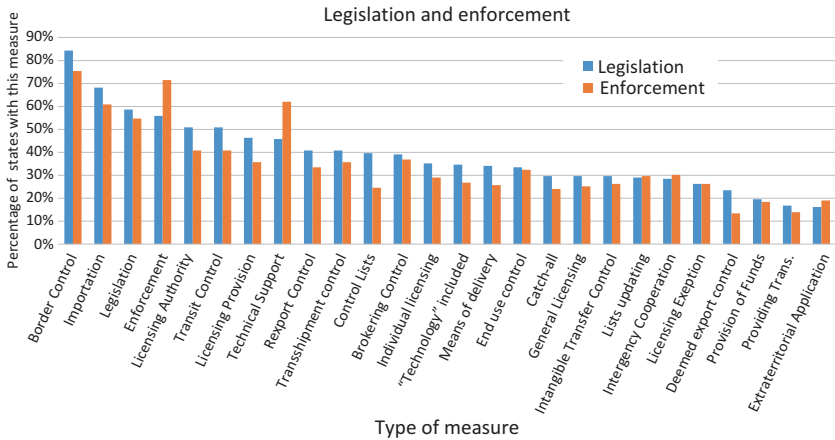


Chart 3.1 Percentage of countries assessed to have legal and enforcement provisions by measure

implemented most commonly by states, and which the least. OP3 trade control-related measures are named on the X-axis and the percentage of countries in compliance with the measures is placed on the Y-axis. The results have been translated into percentages for simplicity and are presented in Chart 3.1.

To make analysis of this data easier, the 26 measures have been divided into five categories based on the groupings of the best practices model: border controls, licensing procedures, control lists, control over imports, export and means, and, finally, a wild card category composed of extraterritorial applicability, enforcement authorities in place, and export control legislation in place. The wild card category has been created out of the necessity of managing the data without making false groupings, and therefore care will be taken to properly identify the three measures in this group each time they are used for analysis.

Before moving to a more specific discussion, it is possible to draw several preliminary conclusions based on Table 3.1 and Chart 3.1:

- In general, lower percentages exist for the implementation of enforcement measures than for the implementation of adequate legislation;

- The three most widely implemented measures, in both the legislation and enforcement graphs, are the three measures in the border control category: border controls, technical support of border controls, and controls over brokering, trading in, negotiating, or otherwise assisting in the sale of goods and technology;
- The most weakly implemented measures fall into the category dealing with control over imports, export, and means, and the wild card measure of extraterritorial applicability is also scarcely implemented by states.¹⁹

It is important to determine what factors influence the degree of implementation of each measure, and also to pay attention to each category, even if they do not fit into either extremity of the graphs. Based on the assistance requests and offers made publicly available by the 1540 Committee, it is possible to view that many providers of implementation assistance are focused on offering assistance in the areas of border controls. This is indeed demonstrated by implementation data, as each border control measure has an implementation percentage of at least 50 percent for both the legislation and enforcement categories. While border controls are essential for trade controls overall, other measures are equally crucial and deserve the same amount of attention and resources, especially from assistance programmes.

For example, the data shows that while most countries have created a licensing authority and written licensing provisions, there is a much weaker implementation percentage for specific measures necessary for effective licensing such as provisions for different types of licenses and inter-agency review. This can stem from several factors. First, countries simply may not be aware of all the measures necessary for effective implementation, especially when it comes to creating different licensing procedures for different types of exports. Second, there may not be enough resources available for the implementation of each measure. In particular, the graphs demonstrate lower percentages for the enforcement of individual and general licensing procedures than for their legislation. This means that even if countries have written laws accounting for the different types of licenses, they do not yet have the necessary resources to establish the proper procedures by which these licenses can be used. The figures may also mean that measures such as inter-agency review were simply not mentioned in many national reports or other sources.

This is one example where broad implementation data can be used to pinpoint areas where states' compliance can be increased in the future. What is shown as an example here for OP3 trade control-related measures could be replicated in any area of the resolution's requirements. Notwithstanding that the information in the matrices is not a completely accurate picture of reality, they do present general patterns and trends that can be used to steer further implementation assistance.

What the graphs in this section do show—and that is probably true for the rest of the measures delineated in the resolution—is that while many countries have tried to create appropriate measures for compliance, the specificities and technical knowledge necessary for full compliance is lacking. This means that some countries first try to comply with the resolution on a superficial level but do not necessarily provide the agencies with the appropriate knowledge or power to effectively apply the measures. Most countries seem to comply most with measures that require the acquisition of equipment and infrastructure rather than the human and technical aspect of controls. It is not as easy to measure the degree of awareness among officials regarding catch-all clauses with, say, whether a radiation detector has been installed at a national frontier; however, resources should be allocated for both types of measures in order to help raise rates of implementation worldwide.

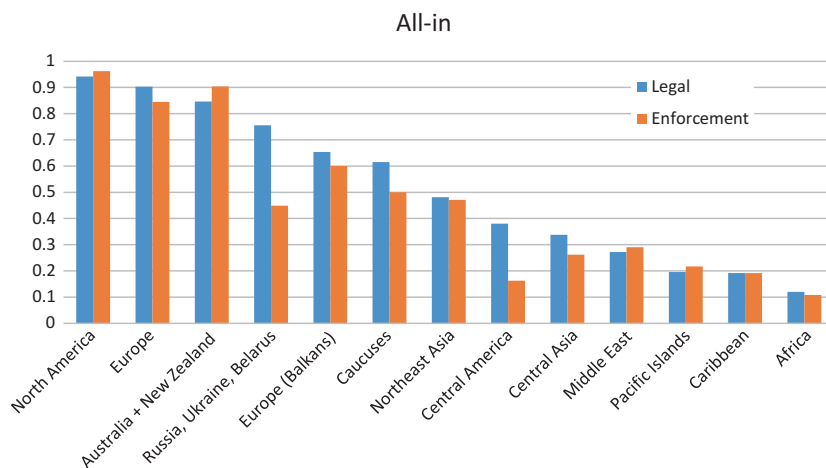
Aside from demonstrating overall implementation trends by measure, matrices can show compliance rates worldwide by country since every nation's data has been used. The aforementioned duo of separately compiled data sets for legislation and enforcement demonstrate the danger of having too much information. Therefore, examining the same data as used above—this time by regional grouping—gives a more nuanced and detailed perspective. Because some regions include outlying countries that have compliance rates much higher or lower than the average, a measure of standard deviation for enforcement and compliance is also presented (Table 3.2 and Chart 3.2).²⁰

Several initial observations can be made based on the above data:

- The regions with the highest rates of compliance with the resolution are generally also those with the highest economic indicators, and those with the lowest rate of compliance generally have the lowest economic indicators

Table 3.2 Percentage of countries assessed to have legal and enforcement provisions by measure by region

<i>Region name</i>	<i>Members</i>	<i>avaLeg.</i>	<i>avaEnf.</i>	<i>STDIeg</i>	<i>STDIeg%</i>	<i>STDenf</i>	<i>STDenf%</i>
North America	2	0.942	0.962	0.082	9	0.054	6
Europe	33	0.903	0.845	0.118	13	0.116	14
Australia + New Zealand	1	0.846	0.904	0.109	13	0.136	15
Russia, Ukraine, Belarus	3	0.756	0.449	0.059	8	0.247	55
Europe (Balkans)	5	0.654	0.6	0.186	29	0.206	34
Caucuses	3	0.615	0.5	0.067	11	0.139	28
Northeast Asia	4	0.481	0.471	0.451	94	0.46	98
Central America	10	0.38	0.163	0.181	48	0.142	87
Central Asia	5	0.338	0.262	0.282	83	0.107	41
Middle East	13	0.272	0.29	0.274	100	0.284	98
Pacific Islands	11	0.196	0.217	0.104	53	0.088	41
Caribbean	12	0.192	0.192	0.148	77	0.141	73
Africa	52	0.12	0.108	0.171	142	0.144	133

**Chart 3.2** Data on legal and enforcement provisions by region

- Around two thirds of the regions, on average, have less than 50 percent average compliance rates for both legislation and enforcement, and about half the regions have average compliance rates of less than 40 percent;
- Average rates of enforcement generally lag slightly behind legislation, except for some strange cases where enforcement is actually higher;
- Many areas where compliance is low are also areas of WMD proliferation concern.

This examination has shown that implementation data and general observations can be used in order to conceive concrete strategies to increase implementation. Based on the data, it is possible to pinpoint regions with weak implementation and crosscheck it with data on specific measures, so that emphasis can be put on these measures in the regions and countries where necessary. Ideally, providers of 1540 assistance could use this data as a starting point for where to focus their efforts, and countries in need of assistance could analyse their own strengths and weaknesses vis-à-vis the resolution in order to channel resources into weak spots. Yet the data also underscores that the more detailed, accurate and up-to-date 1540 national reports are, the more helpful the matrices can be as a tool for reaching non-proliferation objectives.

The foregone analysis took a slice of the resolution, namely trade control-related OP3 measures, and analysed them closely in order to show what can be done with implementation data. Yet the 1540 Committee, per its mandate, also conducts a plethora of official activities related to national implementation. Within these are included the Comprehensive Review, regular reports of the Committee on implementation, the gathering of official information in a legislative database, outreach, awareness and information-gathering activities, and the national action plan tool. These official sources show implementation trends, and after ten years since the passage of the resolution, they can be used in order to also track the rate of increase in compliance across the board.

The Committee has produced several documents that go into some detail regarding the data gathered in the matrices, although on a broad level. These documents are the 1540 Committee Reports and in particular

Annex XVII of the 2008 Committee Report, Annex XVI of the 2011 Committee Report, and the annexes of the 2016 Committee Report. In the 2011 report, the Committee noted that overall implementation data—that is, the number of matrix fields filled in with an X overall—had increased significantly since the previous report in 2008. The Committee noted, in particular, that ‘the number of States that had measures in 30 fields or fewer decreased from 63 to 21 and 42 of these States have measures now applicable to more than 30 data fields. The average number of measures per State in these data fields rose to 128 in 2011 from 93 in 2008’.²¹

As part of the second Comprehensive Review of resolution 1540 in 2016, the 1540 Committee issued a second report regarding progress of resolution implementation. The 2016 Committee Report noted, based on the matrices, an overall increase in implementation of seven percent in comparison with those recorded for 2011, and that all regions experienced an overall improvement in implementation.²²

As noted in the previous sections, resolution 1977 (2011) extended the mandate of the Committee by ten years and also, in OP9, decided that ‘the Committee should continue to intensify its efforts to promote the full implementation by all States of resolution 1540 (2004) through its program of work, which includes the compilation and general examination of information on the status of the implementation by States of resolution 1540 (2004) and on efforts by States at outreach, dialogue, assistance and cooperation’.²³

Following the observation in resolution 1977 (2011) of the importance of outreach and dialogue between the 1540 Committee and states, the Committee increased the number of its country visits. The increased engagement has led to many states updating their national reports, developing national action plans, or deepening their level and quality of compliance with resolution measures. With regards to the matrices, the Committee agreed on a new format for the matrices in 2013, which is currently under development and being filled in by the Group of Experts.²⁴ The matrices will be supplemented in the future by an effective practice guide for states on the implementation of many aspects of Resolution 1540’s requirements. This guide will provide further clarification on the broad language in the resolution’s text and ideally draw on existing international law and best practices in order to help states reach greater levels of compliance.

CONCLUSIONS: IMPLEMENTATION TRENDS

Resolution 1540 is inherently complex for states to implement. The scope is broad, there is a lack of clarity and guidance on what states should do to meet the requirements of the resolution, and there is no clear measure through which to gauge how well states are implementing their obligations. Further consideration of these factors is required if full implementation is to be achieved before 2021, as called for by the president of the Security Council in his address to mark the 10th anniversary of the resolution.

Nonetheless, an examination of the published matrices highlights that many states have taken substantial steps towards implementation of the resolution's requirements and are dedicated to meeting their international obligations. Certainly, implementation varies substantially by region and by topic. However, the overall direction appears to be positive. This is in part due to the substantial investment of countries and organisations offering assistance to states that require capacity-building in implementing the resolution's requirements. Further work and resources are needed to understand exactly how the resolution is being implemented if the gaps in implementation are to be systematically addressed. The 2016 comprehensive review of 1540 implementation underscored the importance of this process, but a vital step is to continually update the matrices. Such a process would require not just an inventory of measures taken by states, but a serious discussion of which measures should be included and why. In some areas, such as complying with existing international instruments, measures can be defined in a clear-cut manner. In other areas, such as export controls where binding legal obligations apart from 1540 are lacking, defining what measures must be universally implemented requires deeper thought, discussion and planning. Such a process is nevertheless essential, as it will allow resources to be appropriately prioritised towards achieving full implementation by 2021.

NOTES

1. See: 'Statement by the President of the Security Council', United Nations Security Council, 07 May 2014. Available at: <http://www.un.org/en/ga/search/view_doc.asp?symbol=S/PRST/2014/7> (Accessed 09 December 2014).
2. Slaughter, A-M. and Burke-White, W., 'The Future of International Law is Domestic', *Harvard International Law Journal*, 47:2 (Summer 2006).

- Available at: <<https://www.law.upenn.edu/cf/faculty/wburkewh/workpapers/47HarvIntLJ327%282006%29.pdf>> (Accessed 15 December 2014).
3. United Nations Security Council, 'Resolution 1540 (2004)'.
 4. As of 24 December 2013, 171 Member States had submitted a national report. UNSCR 1540 Committee, 'Review of the Implementation of Resolution 1540 (2004) for 2013', 26 December 2013. Available at: <http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2013/769> (Accessed 15 December 2014).
 5. United Nations Security Council, 'Resolution 2118 (2013)', 27 September 2013. Available at: <http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_res_2118.pdf> (Accessed 15 December 2014).
 6. United Nations Security Council, 'Resolution 1540 (2004)', OP2.
 7. United Nations Security Council, 'Resolution 1540 (2004)', OP7.
 8. UNSC, 'Resolution 1977 (2011)', OP3.
 9. UNSC, 'Resolution 1977 (2011)', OP3.
 10. UNSC, 'Resolution 1810 (1008)'.
 11. For example, see: Nuclear Threat Initiative, '1540 Resource Collection'. Available at: <<http://www.nti.org/analysis/reports/1540-reporting-overview/>> (Accessed 15 December 2014).
 12. UNSCR 1540 Committee, 'The 1540 Matrix'. Available at: <<http://www.un.org/en/sc/1540/national-implementation/matrix.shtml>> (Accessed 15 December 2014).
 13. This data set was collected based on matrices and national reports as of 2012. 'The 1540 Matrix', 1540 Committee, New York. Available at <<http://www.un.org/en/sc/1540/national-implementation/matrix.shtml>> (Accessed 15 December 2014).
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 15. Crail, P., 'Implementing Resolution 1540: Assessing Progress in National Nuclear Export Controls', Summary of Presentation at Nautilus Institute Workshop on Cooperation to Control Non-state Proliferation, Washington, DC, 04–05 April 2011. Available at: <<http://nautilus.org/wp-content/uploads/2011/12/1540-and-National-Nuclear-Controls-Summary-Peter-Crail.pdf>> (Accessed 15 December 2014).
 16. 'Background papers prepared by 1540 Committee experts according to the document on modalities for the consideration of a Comprehensive Review (S/2009/170), 2009. Comprehensive review on the status of the implementation of resolution 1540.'

17. Examples of such entities include the Palestinian territories, Puerto Rico, Greenland, Bermuda, Western Sahara, components of the United Kingdom.
18. Taiwan, the Holy See, and Kosovo are non-member states of the United Nations. Other entities exist with limited recognition as states, such as the Republic of South Ossetia, the Republic of Abkhazia, and several others.
19. It should be noted that the need and legitimacy of extraterritorial controls is not universally recognised. Resolution 1540 does, to some extent, challenge the legitimacy of such extraterritorial measures as, being a Security Council resolution, it recognises the inherent sovereignty of each state to decide what measures will be applicable within its borders.
20. Standard deviation is a widely used measure of variability or diversity used in statistics and probability theory. It shows how much variation or ‘dispersion’ there is from the average (mean, or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data points are spread out over a large range of values.
21. UNSCR 1540 Committee, ‘National Implementation—General Information’, extracted from 2011 reports. Available at: <<http://www.un.org/en/sc/1540/national-implementation/>> (Accessed 15 December 2014).
22. UNSCR 1540 Committee, ‘Report of the Security Council Committee Established Pursuant to Resolution 1540’, 2016. Available at: http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2016/1038 (Accessed 15 January 2017).
23. Joon, O. (chair), ‘Letter dated 24/12/2013 from the Chair of the Security Council Committee established pursuant to resolution 1540 (2004) addressed to the President of the Security Council’, 26 December 2013. Available at: <http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2013/769> (Accessed 15 December 2014).
24. The 1540 Matrix, 1540 Committee website, United Nations, New York. Available at <<http://www.un.org/en/sc/1540/national-implementation/matrix.shtml>> (Accessed 21 October 2015).



Regional Implementation of UNSCR 1540

Rajiv Nayan

Abstract This chapter explores the implementation of the resolution through a regional lens. Doing so provides useful insights for a number of reasons. First, it allows for trends to be identified within regions, between different states' implementation, and allows for consideration as to whether states have been working together to overcome implementation challenges. Second, regional security and broader dynamics may have impacted negatively on implementation and thus should be explored. Third, looking at 1540 implementation through a regional lens allows for comparison between progress in implementation, as well as challenges and successes. Potentially this can help provide broader insights into what has and has not worked.

Keywords United Nations Security Council resolution 1540 • Weapons of Mass Destruction (WMDs) • Regionalism • Capacity-building • European Union • ASEAN • Non-Aligned Movement • African Union • CARICOM

Resolution 1540 signifies a unique step towards globalising, internationalising and universalising measures to prevent the proliferation of Weapons of Mass Destruction (WMD) and their delivery systems. As other authors

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have highlighted, the international community had several instruments for dealing with WMD proliferation before 1540 was adopted. However, the uniqueness of resolution 1540 lies in the fact that it was adopted primarily to deal with the threat posed by non-state actors—a threat that had not been systematically addressed before the resolution’s adoption. It is also unique in that it obliges all UN member states to act on these issues. Thus, the resolution sets an international framework through which to tackle the risks of non-state actor involvement in proliferation, but it is at the regional and national level that this framework, if it is to be effective, must see full implementation.

This chapter explores the implementation of the resolution through a regional lens. Doing so provides useful insights for several reasons. First, it allows for trends to be identified within regions, between different states’ implementation, and allows for consideration as to whether states have been working together to overcome implementation challenges. Second, regional security and broader dynamics may have impacted negatively on implementation and thus should be explored. Third, looking at 1540 implementation through a regional lens allows for comparison between progress in implementation, as well as challenges and successes. Potentially this can help provide broader insights into what has and has not worked.

Finally, taking a regional approach also allows for discussion regarding the role of regional organisations in 1540 implementation. Regional organisations are in some senses driving globalisation at a regional level, breaking down barriers between national markets and increasingly looking to harmonise their customs and other processes. UNSCR 1977 (2011), which extended the mandate of the Committee to 2021, and UNSCR 2325 (2016) emphasised the importance of regional organisations and approaches in 1540 implementation.¹

Many states that did not have well developed systems and processes required by the resolution are in regions that have viewed these issues as less urgent. Some have also been more traditionally sceptical of the non-proliferation agenda given a lack of progress on nuclear disarmament. The Non-Aligned Movement (NAM) countries initially objected to the idea of the UN Security Council becoming an international law-making body.² However, as Salisbury notes in his chapter, following this initial concern expressed around the time of the resolution’s passage, many of these concerns have not reappeared in the same guise. Quite importantly, many of those countries that were originally hesitant about the resolution have started to take important, and tangible, steps to support implementation of the resolution.³

Partly for this reason, this chapter takes a regional grouping approach loosely using the UN's 'regional groupings', which divides the world into five groupings according to geographical and socio-economic factors for the purpose of facilitating group voting in UN bodies as shown by the map below. The groupings are: Western European and Other Group (WEOG), the Eastern European Group (which includes Russia), the Asia-pacific Group, the Africa Group, and the Latin American and Caribbean Group.^{4,5}

While avoiding an overly rigid approach, a few issues will be considered for each grouping. These include political commitment and subscription to norms—or how states have subscribed to the non-proliferation and developing nuclear security norms and related legal instruments; national implementation—or how states have used these frameworks—put in place through their subscription to international standards and enshrined in national legislation, in practice; national reporting—how states have lived up to their reporting obligations under the resolution; and outreach—or how states have sought to inform industry and others of their obligations. Clearly, given the number of 1540 requirements, and the number of countries in the world some generalisations must be made.

WESTERN EUROPEAN AND OTHERS GROUP (WEOG)

It is perhaps appropriate to begin this survey of 1540 implementation by UN grouping with the geographically discontinuous grouping of Western Europe and Other Group, which includes the North American countries and Israel. The countries in this group are predominately advanced industrial countries. The countries of the group have rich experience in export controls and—as noted by Tobey in his chapter—led efforts to pass the UNSCR 1540 resolution. This region also includes the European Union—a supranational economic and political union of 28 countries that have worked to harmonise much of their legislation and enforcement practices (although it should be noted that the EU includes some countries formally belonging to the Soviet Union and therefore the Eastern European Group).

The grouping more broadly, evidently, has a relatively high degree of normative commitment towards non-proliferation and its members are among the leading implementers of the resolution's implementation. All the members of this group are signatories of the major international non-proliferation treaties such as the NPT, CWC and BWC. Similarly, with a

couple of exceptions, the countries in this region are either founding members of the three major multilateral WMD export control regimes or became members by the early 1990s.⁶ The grouping's commitment to non-proliferation is such that when former Soviet countries joined the EU, those countries were expected to match the non-proliferation policies of the group. Nonetheless, some of the states in this regional grouping possess or are suspected of possessing WMD and many hold WMD-relevant materials.

As many of the countries grouped are state parties to the major non-proliferation treaties such as the CWC and BWC, and members of supplier regime groups such as the NSG and MTCR, in many cases they had national export control systems in place ahead of the adoption of 1540. This meant that most of them already had many of the domestic frameworks required to implement the resolution's provisions, meaning that the challenge of implementation was perhaps less difficult.

The US provides an example of a state that had export controls in place long before resolution 1540 was adopted. The system evolved during the twentieth century to control arms and sensitive goods with military implications. Before the end of World War-II, the US system sought to control the sale of all kinds of arms to enemy countries or blocs. During the Cold War, when the modern system of US export controls really evolved, the US and its allies, originally Britain and France, took the lead in export controls by establishing the Coordinating Committee for Multilateral Export Controls (CoCom), a multilateral organisation aimed at curbing exports of strategic materials and technology to the Communist bloc.⁷ COCOM was eventually dissolved in 1994 but its legacy lives on in the form of the Wassenaar Arrangement, which was formed in 1997 as a more inclusive body (and which includes Russia as a member).⁸

It should be noted, however, that even in countries like the US, there have been considerable challenges in adopting appropriate legislation through which to enact export controls: Following the expiration of the Export Administration Act (EEA)—a 1979 Act that provided legal authority to the US President to regulate export controls—in 2001,⁹ the US export licensing system as envisioned by the Regulations was extended to the International Emergency Economic Powers Act (IEEPA).¹⁰ Since then, the US export control authority has again been operating under IEEPA provisions pursuant to Executive Order 13222, issued 17 August 2001.¹¹ As demonstrated by the export control reviews that have recently

taken place in the US and the EU, the balance between security and prosperity—and the efficiency of the system—must be continually reviewed.

Following the passage of resolution 1540, many countries adopted new laws to strengthen their legal systems for export controls. Perhaps most notable in this grouping are the states of the European Union. Europe as a group—through its political union and cooperation with the United States—has been enforcing controls on exports since at least the 1960s, but it wasn't until the mid-1990s that dual-use export controls became a core part of the EU's common commercial and foreign policies.¹² As several countries of the group have provided leadership in the area of export controls, they benefit from advanced institutional infrastructure and programmes for implementing the agenda of resolution 1540 and are thus embracing the use of novel tools to further implementation. Countries in this region have been leading the way with tools to assist government and industry with export control implementation. For example, many of these countries have developed advanced internet based systems for the electronic submission of export controls documents.

Since 2004, the Union has expanded in size from 15 Member States to 28 in 2017, taking members from the EUU grouping. EU membership has played an important role in spreading export and border controls as states continue to join the Union. In this regard, EU enlargement by ten states, merely a month after the adoption of resolution 1540, had important implications. Similarly, later enlargements by two states in 2007¹³ and Croatia's admission in 2014,¹⁴ have seen 1540 adherence spread geographically as standards are harmonised. This harmonisation occurs primarily through the EU's regulation on dual-use export controls—Regulation 428/2009.

It should be noted that practical implementation of export controls is a national competence.¹⁵ Expansion of the EU has thus not resulted in a common standard of implementation being achieved, with newer members in particular often thought to be lagging behind.¹⁶ The EU also lacks an 'in reach' program, that is, a capacity building programme focused inwards as opposed to the significant EU outreach programmes through which to provide capacity building to EU member states on the implementation of export controls.

Along with EU expansion, East European countries have gradually become members of the multilateral export control regimes since the end of the Cold War. Consequently, some international best practices had been adopted amongst the countries in this grouping before the passage of resolution. This said, the requirements of the resolution go further than any

measure that existed beforehand, and even countries with mature systems of control needed to revisit their export control laws to meet the requirements of the Resolution.¹⁷

This grouping also encompasses a key corpus of those states pushing the nuclear security agenda. While physical protection standards are generally high, several security breaches at nuclear facilities have highlighted potential for improvement.¹⁸ Significant progress on this issue was made with the entry into force of the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) in 2016. Meanwhile, the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT), which defines and criminalises nuclear terrorism, has so far been ratified by 106 countries.¹⁹ The United States passed key legislation and ratified ICSANT in 2015.²⁰

This group, containing the leading proponents of non-proliferation efforts, is naturally strong on outreach efforts, both in terms of national domestic outreach to industry and to partners internationally. Almost all the members of the Group are active in assisting the other groups and the regions of the world to some extent. The EU and the US are by far the most active in this regard. Some other countries such as Norway have historically been known for providing bilateral or direct financial assistance, including funding directly to the 1540 Committee.

The EU has recently maintained two outreach programmes relevant to 1540 activities: the International Export Control Cooperation and Outreach Dialogue and EU CBRN Risk Mitigation Centres of Excellence (CoE) Initiative.²¹ Since 2005, the EU Partner-to-Partner (EU P2P) export control programme has been providing technical assistance to dozens of partner countries from six different regions for strengthening their legal and regulatory mechanisms for export control of dual-use items.²² As of early 2014, geographical areas of interest for the EU's programme expanded to include Jordan, Kazakhstan, and ASEAN.²³

The US is a substantial assistance provider for implementation of resolution 1540 and related measures through bilateral assistance partnerships as well as cooperation arrangements with international, regional, and sub-regional organisations.²⁴ The US government supports efforts of the UNSCR 1540 Committee to implement the resolution in more than 40 fora and institutions. The US government supports the capacity building activities of the Caribbean Community and the Organisation for Security and Cooperation in Europe (OSCE) for implementation of the resolution. The US Export Control and Related Border Security (EXBS)

programme is an initiative that provides assistance to countries to improve their export control systems, including licensing procedures and practices, enforcement and information sharing.²⁵ The US has also sought to build detection capacity in the maritime supply chain. The Megaports Initiative is an assistance programme that has seen the US provide detection equipment and training to customs, port authorities and port operators to enhance detection capabilities for nuclear and radioactive materials.²⁶ The US also conducts screening of cargo through the Container Security Initiative (CSI) that involves risk profiling and pre-screening of US-bound containers.²⁷

Some countries in the group have also lead efforts to share effective practices in conducting industry outreach to other regions. Germany, for example, maintains its ‘Wiesbaden process’, a joint programme of Germany and the UNODA organised to promote implementation of UNSCR 1540.²⁸ The UK also introduced ‘effective practices for corporate social responsibility’ to the Nuclear Suppliers Group in 2011.²⁹

Overall, the countries in this grouping are among the leading implementers of 1540, taking expansive steps not only to implement the resolution, but also to assist other countries in doing the same. The key challenge facing the members of this group, therefore, is of balancing security and prosperity through strategic trade controls and ensuring adherence to the group’s high standards by members and non-members alike.

EASTERN EUROPEAN GROUP

This regional grouping predominantly belonged to the once existing Soviet Union. Its principle heir—Russia is, a nuclear weapons state that continues to dominate the region militarily and maintains an ongoing interest in the governance of the post-Soviet space. Russian nuclear weapons were—during the Cold War—based on territories including Belarus, Kazakhstan and Ukraine. Some of the countries in the region also possessed significant nuclear facilities and strategic industries such as nuclear, military and missile.

The break-up of the Soviet Union saw significant concerns regarding illicit trafficking of nuclear and radiological materials.³⁰ It was also a region that saw significant concerns regarding the surplus expertise held in large scientific establishments—nuclear, chemical, biological and missile—and that such expertise could benefit the efforts of states and non-state actors.

Because of this, the region was the focus of significant threat reduction efforts in the early 1990s and into the 2000s.³¹

These risks have been mitigated also by the incorporation of states from the grouping into the EU. Substantial capacity building work was undertaken with all states prior to membership. While threat reduction work in the region has had some effect, it should be noted that recent tensions with Russia over Ukraine and connected civil conflict provide an example of how the trend towards improvement is not guaranteed. It is possible, for example, that efforts to prevent nuclear smuggling through the region have been hampered by the breakdown in border controls and disputes over governance. Certainly, ongoing threat reduction programs have been hampered.

Perhaps because of the Soviet legacy, by the time that resolution 1540 had been adopted, several countries in the region were, by and large, supporters of the concepts and norms forming part of the 1540 agenda. This perhaps explains why national reporting to the 1540 Committee from the grouping has been relatively good. However, in the author's view, this grouping does generally lag the previous grouping in terms of implementation. The issues separating this group from the situation in the advanced industrial countries (say of the Western European and Other Grouping above) principally relate to resources and the scope and structure of WMD control.

All states in the grouping have signed the NPT, the CWC and the BWC. Several of the states in the region are also members of at least some of the international export control regimes. These countries generally have the necessary legislation to implement these treaties and commitments. Most are also ahead of some of the other regional groupings in adopting current global best practices such as intangible transfers, transit control/trans-shipment control and re-export control. Implementation of such measures in this region is probably helped also by the fact that under the Soviet system, states' industrial output was often centrally directed. This forged close working relationships between strategic industries and government departments that in many cases continue to this day. This in turn may benefit limited industry outreach efforts.

Nonetheless, the extensive CBRN risk that is largely a legacy of the Soviet Union, the existence of organised criminal networks, and the inability to police borders in some states combine to the effect that the risk of non-state actor involvement in proliferation in this region is significant.

ASIA PACIFIC GROUP

Asia Pacific is a vast region that is not a homogenous entity in terms of politics, culture or security architecture. It has several sub-regions that manifest different security behaviour and patterns of interaction.³² Significantly in East Asia, Japan and South Korea are industrially advanced, and China and North Korea are the nuclear weapons and ballistic missiles possessors. In other parts of Asia, too, such as India and Pakistan, there are nuclear weapons countries as well as countries that possess advanced technology that could have uses in WMD applications. Interestingly, Asia is also at the centre of the civil nuclear renaissance, with China and several other countries planning significant civil nuclear build programmes.³³

These factors make it more important to examine the approach of the region towards UNSCR 1540. This said, the sheer size of the grouping means that there is also no single regional or sub-regional organisation that has led on supporting the implementation of UNSCR 1540. Instead, several such organisations operating at different levels—for example, ASEAN and CSCAP in South East Asia and others in different sub-regions—have contributed. Some of the political and strategic schisms in the region have prevented effective cooperation on WMD non-proliferation. For example, regional tensions in East Asia surrounding territorial disputes in the South China Sea, and other issues, have been problematic in this regard. In this sub-region, Taiwan also faces a challenging set of circumstances in relation to strategic trade controls because of its substantial role in shipment and transshipment of goods and political status, which precludes its formal involvement in non-proliferation regimes. In these cases, further outside assistance has been drawn upon.

All the Asian countries—with some notable exceptions such as North Korea—have officially subscribed to the developing norm against non-proliferation. However, broader strategic issues have had their impacts on states' approaches. The NAM countries and China appeared more apprehensive in the beginning about the possibility of UNSCR 1540 affecting economic development programmes and trade transactions. Over a decade since the passage of 1540, this apprehension appears less pronounced, but not completely absent.³⁴ Both governments and civil society continue to bring up related issues.³⁵

East Asia is a region that harbours several security threats which have recently received a lot of attention. Strategic competition between China, the US and its neighbours has led to significant tension, especially surrounding

the South China Sea. These major divisions have impacted on broader regional dynamics which have in turn affected how the region has responded to UNSCR 1540. The region includes a few industrially advanced countries including Japan and South Korea; two nuclear weapons states—China and North Korea; and significant trans-shipment hubs in Hong Kong, Singapore and Taiwan. Asia is also the centre of the current phase of nuclear renaissance. These factors make it more important to examine the approach of the region towards UNSCR 1540. While there is no overriding security architecture in the region, there is rapidly deepening economic integration taking place through ASEAN. This has allowed countries to consider 1540-related issues as they seek to harmonise customs and other trading processes.

Several countries in Southern Asia have put in place new legislation to implement the resolution. These countries have included those as diverse as an established democracy like India (putting in place a Weapons of Mass Destruction Act in 2005) and Afghanistan, a country struggling with its internal stability. Countries are also adopting provisions in their laws to criminalise WMD.

In Southeast Asia, too, many countries are showing a degree of willingness to adhere to the requirements of the resolution, but some countries are struggling to put in place adequate legislation.³⁶ Many countries such as Malaysia and Singapore have used existing tools of the advanced industrial countries. For example, Malaysia has adopted comprehensive legislation that includes the EU strategic goods list.³⁷ There is also some degree of regional cooperation on export control matters, although it should be noted that such cooperation has largely been facilitated by outside parties, such as the governments of the United States and Japan.³⁸

National implementation in the East Asian region has certainly been mixed. Some countries such as Japan are very well advanced, whereas others have only started attempting to pursue the 1540 agenda in the past decade. Taiwan, despite its unique status vis-à-vis China, has developed regulatory mechanisms to control sensitive technology.³⁹ Taiwan has an enforcement machinery to implement the objectives of the resolution, yet studies underline some challenges in the Taiwanese export controls system.⁴⁰ China, which frequently faces allegations of supplying sensitive nuclear and missile technology to sanctioned programmes, has been showcasing its export controls system to the world by introducing new regulatory changes although it should be noted that some analysts are not satisfied with the Chinese enforcement because of the lack of transparency.⁴¹ From

a different part of Asia, Pakistan—which also has appeared in the news for its involvement in the clandestine proliferation network—announced a series of legislative and regulatory announcements to implement the resolution.

Only two countries in this big Asian grouping—Japan and South Korea—are members of all four regimes, though some countries of the group are members of either the NSG or the Australia Group. China and Kazakhstan are members of the NSG. India is not a member of any of the regimes except for the MTCR but has largely harmonised its export controls system with guidelines and technology annexes of the NSG. India became a member of the MTCR in 2016.

At the time of writing, the smaller countries in Central Asia have fewer resources and lack the general awareness of the former nuclear weapons possessors. The East Asian countries, which are industrially advanced and more experienced in export controls of sensitive WMD items, have taken the leadership in outreach activities. For example, Japan has conducted several workshops on UNSCR 1540-related issues in the region.⁴² It has organised Asian export controls seminars in Tokyo every year since 1993 with the intention of raising awareness of non-proliferation and export control across Asia and building capacities of Asian countries. It also organises the Asian Non-Proliferation Seminar and Asian Senior-level Talks on Non-Proliferation separately as well as outreach seminars in countries such as Singapore, Taiwan, Thailand and Vietnam.

Japan and South Korea have also developed domestic institutions such as the Centre for Information on Security Trade Control (CISTEC) and Korea Strategic Trade Institute (KOSTI) for outreach activities.⁴³ These institutions are at the forefront of industry outreach efforts in the region, and provided an example of best practice. However, there are some differences between the two organisations at least officially. CISTEC is a non-governmental and non-profit organisation and KOSTI is a quasi-governmental organisation established under the Foreign Trade Act. In practice, both organisations work closely with the government and industry, though CISTEC is more active and growing very fast. Malaysia has also adopted mechanisms such as incentive to industry for Internal Compliance Programme and mandatory self-declaration at exit points.⁴⁴

Asia Pacific countries cooperate among themselves in different forums like the ASEAN Regional Forum (ARF). The ARF organised workshops and meetings. The Council for Security Cooperation in the Asia-Pacific (CSCAP) was set up to serve as ‘an informal mechanism for scholars,

officials and others in their private capacities to discuss political and security issues and challenges facing the region'.⁴⁵ Many of the forums which have been designed for countering terrorism or transnational crime are being used for raising awareness of WMD terrorism.

Finally, the Middle East sub-region (including Egypt) is has been marred by security issues for decades. The Arab-Israeli conflict has divided the region, along with tension between Iran and the Arab States. These tensions—amongst other factors—mean that there is no regional security infrastructure. The sub-region is also no stranger to proliferation, with Israel (technically a member of the WEOG region) possessing nuclear weapons, Syria having had a historic chemical weapons programme, Syria and Iraq having had historic nuclear programmes, and notably in this context, Iran pursuing its nuclear ambitions. The region is also host to notable trans-shipment countries such as the UAE, which has seen significant illicit shipments to Iran in the past. While there is no regional infrastructure that is focused specifically on security issues, a couple of regional organisations such as the Gulf Cooperation Council (GCC) and the Arab League could play an important role.

The conflict in Syria and the rise of the Islamic State also raises obvious WMD challenges. Although there is often ambiguity regarding responsibility and details, there have been alleged use of chemical weapons by the Assad regime, Syrian rebels and the so-called Islamic State. With Syria still fractured and a power vacuum at the time of writing, there is little prospect for following up these allegations.

Beyond the countries in crises situations, this grouping's record on non-proliferation commitments is mixed. Many countries have signed the major non-proliferation treaties with a few notable exceptions.⁴⁶ Since the 1970s, the concept of a Middle Eastern WMD free zone has been considered, and the 2010 NPT Review Conference saw efforts to achieve this renewed.⁴⁷ Because of these issues, it must be concluded that the Middle East sub-region contains substantial unmanaged WMD risks.

Although it is difficult to generalise about the Asia-Pacific Group, while advances are being made to counter WMD risks in some regions, some challenges—including some intractable ones—remain.

AFRICA GROUP

Africa is a continent that faces many challenges besides preventing proliferation and WMD terrorism. The continent is home to many of the least developed countries in the world, with poverty, disease and conflict as

issues high on many countries' agendas. 2014 saw the beginning of a substantial outbreak of Ebola in West Africa, for example, which led to the significant direct loss of life and diverted resources from other humanitarian and security enforcement challenges. However, there are some countries that are more economically developed and more resource-rich than others in the region. The region also has had some experiences with proliferation and terrorism in the past. South Africa developed nuclear weapons and subsequently denounced them in the early 1990s, and was implicated in providing technology to AQ Khan's network. Libya was a beneficiary of technology from the Khan network, and had a chemical weapons programme, acknowledged by Libya upon its joining of the CWC.⁴⁸ The region has significant uranium reserves and even 'ungoverned spaces'.⁴⁹ While the continent does not have significant civil nuclear infrastructure—possessing only one power plant in South Africa and several research reactors across the continent—a number of countries do currently have plans to expand their civil nuclear efforts.

Political commitment to prevent proliferation and WMD terrorism in Africa has been growing but has been limited by the plethora of other issues facing countries on the continent. While reporting to the 1540 Committee and overall implementation of the resolution began weakly, a significant change occurred between the first and second report. Implementation of 1540 measures increased by ten percent, interactions between African countries and the 1540 Committee increased, as did requests for assistance in implementation.⁵⁰ However, several African countries still have not submitted the reports to the Committee.⁵¹ Analysts complain that the reports submitted by Africa have 'little detail about specific nuclear, chemical, and biological capabilities and safeguards'.⁵² Problems relating to human and financial resources to reporting fatigue are attributed as the reasons for the low reporting.⁵³ Efforts have been made to improve reporting amongst countries in this region along with outreach for facilitating implementation of the resolution.⁵⁴

Broadly speaking, the states in the African region have made commitments to prevent the proliferation of WMD. Many countries had already signed treaties such as the NPT, CWC and BWC before 1540 was adopted. Several states have not signed the BWC.⁵⁵ There are, however, few signs of a regional approach emerging on the subject of non-proliferation.

Helpfully, unlike some of the other groupings of countries explored here, the African Union, a regional organisation of 54 members—the majority of African states—is well placed at least in terms of coverage to

provide support to all African states on implementation of UNSCR 1540. In a sign of the increasing acceptance of UNSCR 1540 in the region, on the 10th anniversary of the UNSCR 1540 the African Union issued a statement in which it called the resolution ‘an important component of the global security architecture’.⁵⁶ However, political will and ability to expend resources face stiff competition from a variety of other issues. Indeed, the African Union has increasingly been playing this role in recent years. The African Union has officially stated that WMD terrorism is a serious threat for Africa as well as the wider world. In an official document dating 21–22 November 2012, the AU notes that ‘the threats that resolution 1540 aims to address are real’.⁵⁷

The countries of Africa are resource poor, and adopting new legislation can be a burdensome challenge. As such, several countries use their existing laws for controlling export of sensitive WMD items. However, some countries of this group have passed new laws to implement UNSCR 1540. It should be noted that the national regulatory systems of most of the countries lack best practices for implementation of export controls in their domestic regulatory systems.

Of course, some leading countries such as South Africa have relatively far advanced domestic legal and regulatory systems in place. South Africa’s system is far ahead of other African countries, perhaps due to South Africa’s relative wealth, past experience with nuclear weapons, role in the Khan network and nuclear power programme. South Africa is the only African country that is a member of a multilateral export control regime—the Nuclear Suppliers Group. Only a handful of African countries—South Africa included—have global best practices such as end user controls, transit/trans-shipment controls and controls lists. Consideration should thus be given to the role that South Africa can play in promoting cooperation on non-proliferation issues in the region. According to national implementation reports, other African countries generally only have one or two best practices in their national control systems.

As for domestic implementation infrastructure, the situation on this front is also varied. Some countries have internal agencies and institutions to implement UNSCR 1540. As the idea of border control has been recognised by all African countries, many of these countries use different agencies and organisations for the task. Most of the African countries have adapted the existing institutions and agencies to implement UNSCR 1540. In terms of industry—few countries in the region

have the capacity to manufacture WMD-related items. Amongst these, the concept of Internal Compliance Programmes is new, but not absent.

Many African countries require assistance on issues from preparing national implementation reports to implementation of other activities required under the resolution to procuring technologies to monitor border crossings. Several regional, international and non-governmental organisations are active in capacity building in African countries. The African Union has emerged as the key regional institution in implementing the UNSCR 1540; however, it has often worked in collaboration with other regional organisations of the continent to implement the resolution.⁵⁸ For this purpose, some prominent regional organisations active in supporting the African Union are the East African Community, the Intergovernmental Authority on Development, the North African Regional Capability, the Common Market for Eastern and Southern Africa, the Southern African Development Community, and the Forum of Nuclear Regulatory Bodies in Africa.⁵⁹

Overall, while there has been positive progress in implementing the resolution in Africa, there is much work that remains to be done. Most African states lack the capacity required to effectively implement 1540, and for this reason outreach and resources offered by other countries and organisations are key.

LATIN AMERICA AND THE CARIBBEAN GROUP

Latin America and the Caribbean is a diverse region ranging from large states with economies of global importance to small island states home to less than 100,000 people. The region is host to two principal countries with nuclear technology—notably Argentina and Brazil—who sought to develop nuclear weapons before rescinding their programmes in the 1980s and 1990s.⁶⁰ WMD proliferation risks in this region should also be considered in the context of several other security challenges, including the illegal trade in narcotics, small arms, terrorism and serious organised and violent crime.

Like other groupings of developing countries, the Latin American and the Caribbean group was initially sceptical of multilateral export controls regimes. The countries, especially those boasting smaller populations and economies, felt that WMD proliferation was an alien concept and

non-existent priority.⁶¹ However, this group of countries eventually realised the relevance of controlling WMD technology.

The region has many relevant regional organisations that have been working on 1540-related issues. CARICOM and the Organisation of American States have both been considered useful forums through which to advance the resolution's agenda, and significant work has been undertaken in cooperation with national governments and NGOs. CARICOM dedicated an individual to be a full-time 'regional non-proliferation coordinator' and to work to 'address non-proliferation capacity shortfalls', as well as help national governments with reporting and development of national action plans.⁶² Cross-cutting benefits of national implementation have been emphasised, including the adoption of 1540-linked legislation that could 'position these states for investment in sectors that previously would not have been possible'.⁶³

A review of national reports to the 1540 Committee suggests that, after 2008, the momentum towards 1540 implementation picked up among the countries that were previously considered indifferent towards its implementation. In the region, several countries submitted their national reports and many more increased their activities for implementation and submitted further reports.⁶⁴ In this regard, the views of the countries in the region appear to be evolving with resolution 1540 gradually being considered a positive and necessary step towards furthering international security.⁶⁵

There are signs of growing commitment amongst countries in the region to the non-proliferation agenda. All the countries in the region have signed the NPT, CWC and BWC. The region is a Nuclear Weapons Free Zone following the entry into force of the Treaty of Tlatelolco.⁶⁶ Concern following the Argentinian and Brazilian nuclear programmes saw the Agreement between the Republic of Argentina, the Federative Republic of Brazil, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials, and the International Atomic Energy Agency for the Application of Safeguards.⁶⁷ That same year, the Mendoza declaration was also signed by Argentina, Brazil and Chile, and saw the three countries pledge not to adopt, use, develop, produce, acquire, stock, or transfer chemical or biological weapons—although it never entered into force.

Like other groupings of developing countries, the Latin American and the Caribbean region has struggled with the non-proliferation agenda—including the implementation of the resolution. As one commentator has

noted regarding the Caribbean, involvement of the international community has been pivotal.⁶⁸ This is linked to scepticism regarding the global trading system based on multilateral export controls regimes, and the lack of movement on disarmament. The countries, especially smaller island states, lacked the government resources of the larger states to engage in non-proliferation at a diplomatic level.

The international community has acknowledged that Latin America and particularly the Caribbean countries have faced serious challenges in submitting their national reports. One of the early reports observed that:

[T]he Caribbean faced the most challenges to reporting—only 46 percent of States submitted their first reports on implementing the terms of the resolution. For some States, mainly in two sub-regions, the first steps in implementing and providing additional information are proving difficult—additional information being provided by only 16 per cent of the submitting Caribbean States and 42 percent of the submitting Central American States.⁶⁹

However, over the years, reporting has improved tremendously. Now, Haiti is the only country in the Latin American and the Caribbean Group that has not submitted its national report.⁷⁰

Several countries in the region already had mechanisms in place to prevent the proliferation of sensitive goods, and those that did not are gradually developing them. In this group, as discussed, some smaller countries are slow in responding to the idea of developing their national systems to fight WMD terrorism, but there are some countries such as Brazil and Argentina that have developed very advanced domestic legal and regulatory systems. In fact, Argentina is a member of all of the multilateral export controls regimes; Brazil is a member of the MTCR and the NSG; and Mexico, the latest Latin American entrant, has become a member of Australia Group and the Wassenaar Arrangement. Argentina and Brazil have most of the global best practices in their regulatory systems—although this is not the case for other countries in the region.

As the countries in the region were and to an extent are still new to WMD control and understanding all the requirements to implement UNSCR 1540, there was a tangible need to assist the region from the very beginning. Even a country like Mexico that has joined two of the multilateral export controls regimes had asked for assistance in many forms,

including ‘funding for the acquisition and implementation of high-tech systems and equipment for detecting agents related to weapons of mass destruction at the points of entry into national territory’.⁷¹

Several national, regional, international, and even non-governmental organisations are active in their provision of assistance for the implementation of UNSCR 1540 in the region. The importance of the international community’s efforts in the region has been noted. As one commentator posited, ‘absent the involvement of the international community, activities aimed at implementation would be negligible or non-existent’.⁷² The work of the international community has transformed the Caribbean from an ‘inactive bystander to an active stakeholder’.⁷³

Through its CARICOM 1540 programme and the Inter-American Committee against Terrorism (CICTE) of the Organization of American States (OAS), the Caribbean Community (CARICOM) has emerged as the key regional body for outreach for UNSCR 1540.⁷⁴ At the regional level, too, activities such as the Central American Integration System (SICA) and Caribbean Customs Law Enforcement Council (CCLEC) have helped countries in implementing UNSCR 1540.⁷⁵

Overall, while the Latin America and the Caribbean region has much work remaining to fully implement resolution 1540, the existence of strong regional organisations with an interest in this topic has resulted in measurable progress.

CONCLUSION: REGIONAL IMPLEMENTATION OF UNSCR 1540

Consideration of resolution 1540 implementation from a regional perspective provides useful insights for several reasons. It has allowed the resolution’s implementation to be explored at the regional level, and for the consideration of regional security and broader dynamics and their impact on implementation; and it has proffered the role of regional organisations in supporting 1540 implementation. This account has highlighted both the diversity in implementation levels and the capacity to implement building on political will and resources in countries around the world.

In all regions, tangible progress has taken place and export controls and nuclear security are gradually becoming an integrated part of states’ approaches to non-proliferation. All six geographical regions have demonstrated different patterns in implementation. Advanced industrial countries,

which have been the principal drivers of the resolution 1540 agenda, are obviously much further down the road of implementation. Even the most advanced countries, however, can have difficulties in establishing and maintaining relevant systems and provisions. The regions which are dominated by countries that in the past have exhibited more sceptical tendencies towards the 1540 agenda have embraced their 1540 obligations in recent years. More broadly, resolution 1540 has had an important role in promulgating the emerging norm against WMD proliferation.

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UNSCR 1540 Implementation: Challenges Past and Present

Daniel Salisbury

Abstract This chapter seeks to set out the principal challenges in the implementation of resolution 1540. Using evidence from the resolutions, meeting records, Committee Chair’s briefings, and secondary sources, it argues that the challenges to implementation of the resolution have reflected both broader conceptual issues, and, more recently, practical implementation issues. The chapter begins by considering ‘broader challenges’ to the resolution’s implementation, notably those relating to political will. The second section considers challenges that are more practical in nature. The chapter will conclude with a final section looking at some opportunities that may help to overcome these challenges.

Keywords United Nations Security Council resolution 1540 • Weapons of Mass Destruction (WMDs) • Legitimacy • Compliance • 1540 Matrix • 1540 national reports • 1540 Committee

The success of UNSCR 1540 in preventing non-state actors from developing, acquiring or using WMD is dependent on states’ meaningful

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implementation of its many measures. As seen in the Viski's chapter, implementation efforts have seen successes in some respects, and leave more to be desired in others. The implementation of this agenda has certainly encountered several challenges over the years since resolution 1540's passage. Early challenges included the perceived legitimacy of the resolution and the obligatory nature of its requirements, as well as the need to overcome an initial lack of awareness and the resolution's vagueness. More significantly, challenges since the resolution's passage—and those that are more pervasive today—have been more practical in nature. This is especially in terms of inspiring and working to coordinate the global implementation of the resolution's numerous requirements.

Various challenges will continue to impact upon implementation into the future; therefore, consideration of challenges and lessons learned is important if resolution 1540 is to continue to be a valuable tool. In light of this, the following chapter seeks to set out the principal challenges to resolution 1540 implementation. Using evidence from the resolutions, meeting records, Committee Chair's briefings, and secondary sources, it argues that the challenges to implementation have reflected both broader conceptual issues, and, more recently, practical implementation issues. The chapter begins by considering 'broader challenges' to the resolution's implementation, notably those relating to political will. The second section considers challenges that are more practical in nature. The chapter will conclude with a final section looking at some opportunities that may help to overcome these challenges.

BROADER CHALLENGES

The resolution's passage by the UN Security Council under Chapter VII rendering its application universal and compliance legally binding was certainly controversial, leaving substantial questions regarding the resolution's legitimacy. At least equally challenging has been the lack of clarity in the meaning and consequences of noncompliance, and varying threat perceptions between states. This section will consider some of the broader—and often more conceptual—challenges to 1540's implementation. Those that impact upon states' political willingness to expend resources and to implement the measures will particularly be considered. Many of these difficulties stem from tensions inherent in the resolution's nature and were first aired around the time of the resolution's creation.

Legitimacy

As Tobey noted in his chapter, the UN Security Council passed resolution 1540 in April 2004 under Chapter VII of the UN Charter. The Security Council is described in the Charter as the entity with the ‘primary responsibility for the maintenance of international peace and security’ and notes that the powers the Council has at its disposal are set out in Chapters VI, VII, VIII, and XII.¹ Amongst these Chapters, VII is the ‘only one relevant to a binding decision requiring all states to adopt certain measures’.² According to Chapter VII, the Security Council ‘shall determine the existence of any threat to the peace, breach of the peace, or act of aggression and shall make recommendations, or decide what measures shall be taken’ in order to ‘maintain or restore international peace and security’.³

Chapter VII resolutions typically relate to specific ‘threats to the peace’. These are often confined in scope to one or two countries, generally used to impose sanctions or mandate a peacekeeping operation. There have been a handful of instances in which the Security Council’s powers have been used to respond to ‘threats to the peace’ that are general in nature. UNSCR 1373 (2001), is a key example which pre-dates 1540, and is a resolution that responded to the events of 9/11 with a number of steps for states to take in combating terrorism.⁴ UNSCRs 1373 and 1540 were among the first instances where UN Member States used language that described the Security Council as an international legislator.⁵ For example, just prior to the adoption of 1540, the Indian representative noted concern at the ‘increasing tendency of the Council in recent years to assume new and wider powers of legislation on behalf of the international community, with its resolutions binding on all States’.⁶

The passage of 1540 in this manner has resulted in the resolution’s legitimacy being questioned. The Security Council, although two-thirds elected by the General Assembly, cannot be considered a democratic or representative body.⁷ By adopting the resolution, fewer than eight percent of UN Member States—the 15 members on the Security Council at the time—decided on measures that would require implementation by all Member States.⁸ A number of measures contained in 1540—export controls for example—were issues on which states would be required to legislate domestically. Despite the ‘unusual’ extensive efforts of the resolution’s drafters to consult and engage with other states, concerns regarding the resolution’s legitimacy were expressed during an open session of the Security Council.⁹ This session took place on 22 April 2004, just six days

before the resolution was passed, and was called for by 35 states that were not Security Council members.

A number of states expressed concern over the use of Chapter VII and that the Council had overstepped its mandate. Some states viewed this deviation from ‘time-tested modes of creating multilateral obligations’ as acceptable given the urgency of the threat.¹⁰ Yet others were less supportive, arguing that the Council had overstepped its mandate. For example, the Indian representative noted that ‘export controls are not an issue on which the Security Council should prescribe norms’.¹¹ Another example is provided by Pakistan, whose representative stated that ‘there is no justification for the adoption of this resolution under Chapter VII’.¹² Concern was also expressed in this regard by the Non-Aligned Movement (NAM) in a 2004 Ministerial Conference final document. The document cautions against ‘a practice where the Security Council utilises its authority to define the legislative requirements for Member States in implementing Security Council decisions’.¹³

A further concern expressed by some states related to the use of a Security Council resolution—as opposed to other means such as a treaty or a General Assembly resolution—to address the issue. The principle of proportionality is expressed in the UN Charter with regards to the Council’s activities.¹⁴ This implies that ‘Council legislation must be *necessary* in order to maintain international peace and security, meaning that the usual ways to create obligations of an abstract and general character (the conclusion of treaties and the development of customary international law) must be inadequate’.¹⁵

Several alternative options that could have increased the legitimacy were suggested by states. Some states suggested that only several of 1540’s clauses should come under Chapter VII. A few also suggested that acting under Chapter VII was not necessary, citing Article 25 of the Charter which falls under Chapter V and states that members will ‘accept and carry out’ Security Council decisions.¹⁶ Several states also posited that the resolution should take the form of an interim measure until a more permanent and legitimate treaty could be negotiated in an alternative forum. In some cases, states also linked their concern to debates about the relationship between non-proliferation and disarmament, with several states lamenting the only brief reference to disarmament in the resolution’s preamble.

These concerns regarding the legitimacy of the resolution—although vocally expressed around the time of its passage—were not long lasting. Many of the states that expressed concerns regarding legitimacy later

bought into the objectives and means of 1540. The statement of Pakistan during the open session, for example, contrasts with the country's vote in support of the resolution a week later.¹⁷ South Africa's changing perceptions also present an interesting example. The country expressed concern during the 2004 open debate, noting that the draft resolution 'imposes obligations' on states which could have 'far-reaching legal and practical implications'.¹⁸ The country's initial implementation report also noted that South Africa would 'also not accept externally prescribed norms or standards, whatever their source'.¹⁹ As a non-permanent Security Council member in 2011, however, South Africa voted for 1540's extension through UNSCR 1977 (2011) and also provided a chair to the 1540 committee.²⁰

Evidence suggests that initial concerns regarding legitimacy neither endured nor directly impacted upon efforts to implement the resolution. All the states that were present at the April 2004 open session but unable to contribute a vote to the resolution's subsequent unanimous passage had submitted an initial report by 2007. Most of these (26 out of 31) submitted a report by the end of 2004.²¹ It should be noted, however, that this may relate more to the minimal resources that these states have to expend on reporting rather than represent a symbol of political buy-in. It is also important to note that this agenda was not entirely unprecedented at the UN level, even if the means of addressing it was novel. In 2003, the UN General Assembly adopted Resolution 57/83 on 'Measures to prevent terrorists from acquiring weapons of mass destruction'.²² This called upon and urged states to support, take and strengthen measures to prevent terrorists from acquiring WMD.

Gauging and Responding to Noncompliance?

A further broad challenge relating to the nature of the resolution is seen in difficulties and reluctance surrounding the notion of 'non-compliance' with the resolution, and a lack of tangible consequences for states that do not adhere to their obligations. While the Security Council—in theory—has legal means to punish states for noncompliance with the resolution under Chapter VII, this would be impossible in practice in relation to UNSCR 1540. This has meant that while it is state's legal obligation to act, there are few consequences for inaction.

When the resolution was passed there were few specifics against which to judge compliance. The resolution itself is deliberately broad in scope,

and vague in language. It decides what must be done rather than specifying how it must be done. In requiring all states—of different size, status and politics—to take action, it could not be specific in its requirements. Generally speaking, the Security Council is not a venue that is conducive to producing specific legislative requirements, predominantly because resolutions are not as detailed as treaties and remain ‘secured only by political compromise’.²³ The undefined adjectives ‘appropriate’ and ‘effective’ were used throughout 1540 to describe laws and other measures that states would have to put in place.²⁴

Following the passage of the resolution, states were required to submit implementation reports ‘no later than six months from the adoption of this resolution’.²⁵ These were to detail the steps that they had taken or planned to take to implement the resolution, and constituted the most telling indicator of a state’s compliance at the time. In practice, states were slow to report, with a number still at the time of writing yet to submit an initial report. Furthermore, the early reports were of mixed quality and format, meaning that they were not particularly helpful in assisting the Committee to understand implementation.

In early 2005, the ‘1540 Matrix’ was introduced as the ‘primary method’ used by the 1540 Committee to organise implementation information.²⁶ This compiles information provided by each state with regards to their activities through national reports and other official data provided to the UN, International Atomic Energy Agency (IAEA) and Organisation for the Prohibition of Chemical Weapons (OPCW).²⁷ The format of the matrices, however, has its limits, as Viski has noted in her chapter. For example, the box-based system only allows for three options: it can detail if a state has taken measures, there are questions over measures taken, or there is no information.²⁸ This format does not pass judgement as to whether measures taken are sufficient or fit for purpose. The Committee is clear to state that ‘the matrices do not reflect or prejudice a state’s compliance with its non-proliferation or any other obligations’.²⁹ States also expressed difficulties at working with the matrix due to its complexity.³⁰

Following the introduction of the matrices, the Committee still faced difficulties in obtaining information from states, resulting in the solicitation of states for further details.³¹ This was codified in the resolution extending 1540’s mandate in 2008 that also encouraged states to submit ‘additional information’ relating to their implementation of the resolution.³² A further difficulty in defining compliance is that the resolution also contains no timeframe or deadline for implementation.³³ This and the

above discussion mean that while action against noncompliance might be theoretically possible, it is highly unlikely.

Concerns about the resolution, its requirements, and risks of ulterior motives also surfaced in the open debate. The political hangover of the 2003 Iraq war, which saw an international coalition invade Iraq to disarm Saddam Hussein's regime, is evident. The April 2004 open debate, for example, saw concerns aired that the resolution could provide grounds for military action, which were responded to by the resolution's sponsors. The Cuban delegate, for example, expressed concern that the resolution's adoption under Chapter VII could be used as a 'preauthorisation or justification for the unilateral use of force'.³⁴

Because of these difficulties, the approach taken by the 1540 Committee to compliance has been to facilitate cooperation rather than to coerce members. As Richard Cupitt, who formerly served as the Special Coordinator for UNSCR 1540 at Department of State and is a former member of the 1540 group of experts, has noted, the Committee has exerted 'very little' pressure on states to comply with 1540's obligations, using the 'lightest touch' to encourage compliance.³⁵ He goes on to note, in fact, that the Committee 'goes to great lengths in practice to avoid assessing compliance by individual states'.³⁶ The contrast between the Chapter VII means by which the resolution was passed and the methods used by the Committee and others to inspire compliance with the resolutions provisions have been highlighted. For example, Heupel has noted the difference between the 'hierarchical modes of governance for rule setting' and 'soft modes of governance' for rule implementation.³⁷

There have been some examples where pressure has been applied to advance the 1540 agenda, although this pressure has been applied not by the 1540 Committee, but from other states. Notable examples include the adoption of new comprehensive export control legislation by key nodes in the Khan network: the UAE in 2007 and Malaysia in 2010. It was supposedly the threat that the US may designate the UAE a 'destination of diversion concern' and thus impose requirements on US exporters under legislation being considered in 2007 that caused the UAE to bring in its export control legislation.³⁸ Similarly, while other longer-term changes can be cited as having led Malaysia to adopt its Strategic Trade Act in 2010, an immediate cause was the threat of not being invited to the first Nuclear Security Summit in 2010.³⁹

Assessing the Threat

A further broad challenge relates to the perceived nature of the threat that the resolution seeks to address. It is clear that the proliferation of WMD is considered to be a serious security threat by most states. As Cupitt has noted, during the open debate on 22 April 2004, ‘the speakers almost universally pointed to the nexus of proliferation of WMD and illicit activities by non-state actors as a serious threat to international peace and security’, and relayed a sense of urgency about this threat.⁴⁰ It is, however, perhaps unsurprising that states make such positive statements in public forums such as the Security Council.

How seriously states take the threat—and hence the urgency with which they take measures to address it—is highly dependent on how they perceive the international security environment. The US, UK, and other states that were heavily involved in the drafting of UNSCR 1540 ranked proliferation and WMD terrorism as security threats of great importance. This is not the case for all states—many would look at proliferation as a distant threat, and WMD terrorism as a remote possibility. In short, many states around the world have other issues that they perceive to be more urgent. This is particularly the case in the developing world where development issues such as public health, food security and conflict would certainly come higher amongst government priorities. While competing priorities may not impact upon the political will, it means that 1540-related activities often face tough competition for resources.

Some states may consider 1540 to have a lesser relevance to their situation because they do not have WMD, nuclear, biotech, or chemical industrial sectors. Even if these sectors are not active, states can also undertake other activities that are of relevance to 1540. They may, for example, be looking to increase levels of transit or transshipment traffic through their ports, or seeking to encourage growth in the financial services sector. A growth in these activities in a state—without sufficient regulation and oversight—can benefit proliferators who actively seek loopholes to exploit. States that have seen acts of terror committed on their soil may better identify with the urgency of these issues. All these kinds of considerations can play a role in determining the priority placed by states on undertaking 1540-related activities.

In sum, there are significant broader challenges that have had to be overcome in efforts to implement the requirements of the resolution. These challenges are inherent in its nature as a Chapter VII resolution

responding to a non-specific threat with respect to which different countries have varying threat perceptions. Challenges relating to the resolution's legitimacy—which were most prominent around the time of the resolution's passage—particularly surrounding Chapter VII have in large part faded. 1540 has strengthened the universality of the non-proliferation norm in this respect, rather than weakening it. The challenges that there are seemingly few consequences for inaction, and that the 1540 agenda is competing on a daily basis with many other pressing national concerns still remain. Competition for resources forms a significant practical challenge considered in the following section.

PRACTICAL CHALLENGES

Beyond the broader challenges discussed above, there have been practical challenges regarding how to best organise, coordinate and resource 1540 efforts. Following 1540's adoption in 2004, states were left with a loosely defined and complex agenda of potentially costly measures to implement. In seeking to implement the resolution's requirements, states are able to draw on their own resources and those available from other sources. This includes the assistance of several broader stakeholders: other states, international organisations, regional organisations, and civil society. Similarly, the types of resources relevant to implementation are also wide ranging given the resolution's broad scope: from purely financial resources to specialist knowledge, expertise and experience. The vast number of actors, types of resources available, and the needs of 193 UN Member States in fulfilling many criteria have meant that coordination is hugely important and presents a significant challenge. This section considers some of practical challenges in implementing 1540's agenda.

Challenges and the Changing Role of the 1540 Committee

To help bridge the gulf between the resolution's language and practical implementation, a Security Council Committee was established. Over time the 1540 Committee has evolved, reacting to challenges in coordinating implementation. This has seen the Committee's stated role become better defined, with its tasking changing multiple times with the UNSCRs extension of its mandate.⁴¹ The Committee and its evolving roles, therefore, represents a potentially useful lens through which to consider challenges.

The Committee was originally set up with a non-descript mandate to ‘calling as appropriate on other expertise, report to the Security Council for its examination, on the implementation of the resolution’.⁴² Around the time of the resolution’s passage, several states expressed concern or confusion regarding the Committee’s role as stated in the initial draft resolution. After the resolution was passed, the immediate work of the Committee mostly involved raising awareness of the 1540 agenda. Crucially, this involved communicating to other states the nature of the resolution and what its requirements entailed.

Resolution 1673 (2006), which extended 1540’s mandate, saw the Committee’s role become better defined to include ‘outreach, dialogue, assistance and cooperation’.⁴³ These tasks joined the Committee’s top priority of assessing the progress of states.⁴⁴ It is arguable as to whether the Committee’s focus on reporting alone had a negative effect on implementation through outreach efforts before 2006.⁴⁵ Resolution 1810 (2008) that extended the Committee’s mandate went some way to codifying the Committee’s role as an assistance broker—a role that will be further explored in the section on ‘resource allocation’ below. The resolution tasked the Committee with encouraging ‘ongoing dialogue’ on assistance-related issues, particularly in ‘engaging actively in matching offers and requests for assistance’.⁴⁶ The 2008 extension essentially codified what had been seen as a role of the Committee since 2005.⁴⁷

These efforts to increasingly specify the Committee’s role continued with Resolution 1977 (2011). This resolution, which extended the mandate of the Committee by ten years to 2021, also detailed further concrete roles for the Committee and included five clauses on assistance provision and matching.⁴⁸ Further duties included working to ‘identify effective practices, templates and guidance’, and in doing so, drawing on ‘relevant expertise, including civil society and the private sector’.⁴⁹

The codification of the Committee’s role in UN documents is certainly positive for the strength of the resolution. Despite increasing the number of specified tasks and using the Committee to respond to challenges as they become apparent, there has been no proportionate increase in the Committee’s resources.⁵⁰ Experts were used to assist the Committee in collating and analysing implementation information as early as 2005.⁵¹ Resolution 1673 (2006) stated that the Committee would continue to receive the support of experts.⁵² It was not until 2011 that a ‘group of experts’ was officially convened through resolution 1977 to support the Committee in implementation.⁵³ The size of this group of experts—similar

to the 1540 Committee—has also been a contentious issue. Initially in UNSCR 1977 (2011), it was stated that this group would consist of ‘up to eight experts’; this number was increased to nine in 2012.⁵⁴

Resource Allocation

A further series of practical challenges lies in ensuring that resources are best allocated to the fulfilment of 1540 objectives. As stated, many of the requirements of the resolution require expertise or funding. With so many different requirements across all UN Member States—and with many national governments lacking resources—effective resource allocation is crucial to the success of the 1540 agenda.

The Committee has been tasked with facilitating the allocation of resources—although this was not specified in the original resolution. The Committee has been described as a ‘clearing house’—or an entity collecting requests and distributing offers—for assistance in implementing the resolution.⁵⁵ Practically, the Committee has used a variety of different means to connect states with assistance. Initially, requests and offers of assistance were extracted from national reports and made available on the Committee website.⁵⁶ Events were also organised to better allocate resources, with a donors’ conference being held in 2006, and a meeting of ‘assistance providers’ in 2007, amongst others.⁵⁷

In fulfilling its role in this respect, the Committee encountered several challenges. Early efforts to identify needs were heavily linked to reporting, which at the time was lacking. Many states also did not identify a Point of Contact for assistance provision, resulting in requests from the Committee Chair to do so.⁵⁸ Requests for and offers of assistance were also often not specific enough. As the Committee Chair noted in 2007, ‘specific information on both the requests and offers of assistance would enable the Committee to better fulfil its clearing house role’.⁵⁹ This resulted in the development of a template for requesting and offering assistance by the Committee, which was sent to all states that year.⁶⁰

The use of templates and making public of both requests for, and offers of, assistance (initially only offers were publicised) has improved the Committee’s role in this regard.⁶¹ More significant difficulties, however, remain. That states have to request assistance remains a key challenge. Many are reluctant to do this, likely for a variety of reasons, including the view that it is either an admission of non-compliance with the resolution

or broader weakness, or that requesting assistance could lead to outside influence in their internal affairs.

To this end, some more specific tools have been developed which states can use without officially making requests. A good example here relates to legislation that is a key part of the resolution's requirements. Many states, especially smaller ones, may not have the expertise or capacity to build a legislative framework to deal with these issues. To overcome this challenge, a database of legislation was developed by the Committee and made active in 2006.⁶² This database was populated by the national legislation of UN members in relevant areas, and complemented other activities such as legislation drafting workshops.

Engaging Other Stakeholders

Other practical challenges have involved ongoing efforts to engage the resolution's diverse stakeholders. These include international organisations besides the UN, regional organisations, and other actors to which the resolution is relevant, including civil society and the private sector. Many of these actors have access to information and resources that could complement states' efforts to implement the resolution. Similarly, organisations working in similar areas would benefit from an awareness of each other's activities to avoid duplication and build on potential synergies.⁶³

One set of challenges across the board in this area relates to finding the time to establish these relationships. UNSCR 1540 often only forms a small part of the role of individuals—whether in international or regional organisations—tasked with dealing with related issues. Making 1540 a priority amongst those in these organisations, therefore, involves raising awareness, establishing a point of contact, and working together to leverage resources. There are clearly great benefits to be drawn in engaging these other stakeholders.

Beyond the UN, which hosts the 1540 Committee and other relevant bodies such as related UN terrorism Committees—the 1267 and 1373 Committees—there are a number of other international bodies which have a stake in the resolution's implementation.⁶⁴ A few of the obvious organisations relevant to 1540 implementation include the International Atomic Energy Agency (IAEA), the Organisation for the Prohibition of Chemical Weapons (OPCW) and the World Customs Organisation (WCO)—although these are in fact only part of the alphabet soup of international organisations that have a 1540-relevant role. Ensuring appropriate engagement with these stakeholders is time-consuming for all involved.

Regional and sub-regional organisations—some of which have been discussed in Nayan’s chapter—are another important set of 1540 stakeholders. In some geographical areas—especially those with strong regional security architectures—they have played a pivotal role in the resolution’s implementation. Engaging with these organisations, while rewarding, is a time-consuming job for the 1540 Committee, adding a layer of complexity to implementation efforts. Follow-on resolutions have seen efforts to address some of the challenges of engaging international and regional organisations in implementation. Resolution 1977 (2011)—for example—calls upon these organisations to identify a ‘point of contact or coordinator’ for 1540 and to share information with the Committee.⁶⁵

The private sector constitutes a further set of stakeholders. This includes companies that manufacture, supply or hold proliferation-sensitive technologies and nuclear, chemical or biological materials. They are often on the front-line when it comes to preventing illicit trade or WMD terrorism, with the potential to play an active role in preventing illicit trade every day. Reaching out to these companies, however—especially the most relevant such as firms supplying dual-use technologies—is a formidable challenge. These firms are often small companies with few resources to spend on compliance, and facing difficulties in obtaining buy-in from upper-level management.⁶⁶ Outreach in this regard, represents a whole new set of difficulties.

OVERCOMING THESE CHALLENGES?

Assessment of the challenges to 1540 implementation would be both incomplete, and somewhat pessimistic, without briefly considering some solutions to the difficulties presented. This section will begin by considering some of the ways that 1540 challenges have been conceptualised, and will then present some possible solutions to the above challenges.

Lack of action on 1540-related issues has been compared to the ‘tragedy of the commons’. Bergenäs argues ‘because carrying out resolution 1540’s requirements demands significant time and resources, a state’s decision to not implement the resolution can be seen as one of rational inaction driven by self-interest to maximise private gains’.⁶⁷ He argues that this situation can lead to ‘collective irrationality and the destruction of the public good: common security’.⁶⁸ A similar explanation could view the prevention of WMD proliferation or terrorism as a collective action problem where many of those who are not acting are ‘free riding’ on the benefits of other’s action.

These high-level conceptualisations are insightful in considering the problem—for 1540 to be effective, it needs to be implemented around the world by all states. It is, however, worth breaking down the 1540 agenda into segments that are easier to digest, and problems into a set of practical difficulties that it may be easier to find solutions to. While 1540's principles will hopefully one day be universally implemented, until then it is important to priorities where the risks are highest. In preventing illicit exports of nuclear technologies, for example, it is clearly most important to ensure that those states manufacturing these technologies have export controls in place, and that industry is appropriately engaged on these issues. Similarly, physical protection measures must obviously begin with countries that possess significant nuclear material holdings and infrastructure, and face the most significant threats from non-state actors. In some sense this is a finite challenge. Other challenges, such as ensuring that transshipment of sensitive technologies is regulated, are applicable to all states; inaction in this area could render other efforts meaningless. As a US legislator has noted, 'anything we do in the area of export controls can be rendered meaningless by transshipment'.⁶⁹

The currency of these and similar explanations also depends on the extent to which prevention of WMD proliferation or terrorism is really a 'collective good'. All states have a reason to be concerned about WMD terrorism or proliferation. However, only a few states would seriously consider it to be a foreign or domestic policy priority. In this regard, the 1540 agenda is one heavily driven by a minority of states—the US and its allies.

Prioritisation

In inspiring states to act, several potential solutions to these types of collective action dilemmas—and the other implementation challenges discussed above—have been suggested and sometimes seen in action. One has been to focus on certain areas of the resolution's scope. Risk-based approaches have been posited in this regard, considering which countries and areas of the resolution's scope pose the highest risk to the fulfilment of its objectives.⁷⁰

Practically, prioritisation has best been seen in the area of nuclear materials security. Nuclear materials fall under the resolution's scope under 'related materials' and states are obliged to put in place 'physical protection measures' and other provisions to guarantee their security.⁷¹ The aims and objectives of 1540 in this regard have been significantly furthered by

the priority placed by the Obama administration's focus on these issues, notably through the Nuclear Security Summit process.⁷² The actions taken and presented by states at these events in Washington DC in 2010 and 2016, Seoul in 2012, and The Hague in 2014 have significantly advanced 1540 implementation. This focus on nuclear security—arguably—may have come at the expense of progress in other areas.

Traction in the Developing World

Suggestions have been seen regarding how the 1540 agenda can gain traction in the developing world, in the 1540 context often termed 'the global south'.⁷³ Arguably, countries in the developing world have fewer resources to expend on 1540, feel further removed from the threat of WMD proliferation or terrorism, and face numerous development and other challenges. One solution emphasised in this respect has been to highlight the positive side-effects and bi-products from which states can benefit by implementing resolution 1540. These positive side effects can contribute to the country's development, often working to increase certainty in the security of supply chains and encourage foreign investment. They can also contribute to the mitigation of other security issues such as narcotics smuggling, human trafficking or the illegal trade in small arms and light weapons. Significant work here has been conducted by the Stimson Centre to highlight the 'dual benefits' of the 1540 agenda.⁷⁴ Successful approaches in the developing world have also often taken a regional focus.⁷⁵

Bottom-Up Approaches

Another approach that has been increasingly posited as a potential solution to 1540 implementation relates to initiatives 'from the bottom-up'. This is certainly in the spirit of the resolution, even though its provisions are primarily aimed at implementation at the state-level. Increasing awareness amongst these actors—allowing them to buy into 1540s objectives—can act as a force multiplier, and a sustainable solution to help to reduce implementation costs. The role played by two groups will be explored in this regard: the private sector and civil society.

That the private sector can play a role in preventing illicit trade in WMD-related materials is a concept that has been considered for some time.⁷⁶ It is only more recently, however, that efforts to practically implement these approaches have been seen. UNSCR 1540 itself calls upon

states to ‘develop appropriate ways to work with and inform industry and the public regarding their obligations’ under the provisions put in place by the resolution.⁷⁷ The more recent Resolution 1977 also encourages the 1540 Committee to draw on private sector experience.⁷⁸ In 2012, the Wiesbaden conference was convened of international, regional and sub-regional industry associations to encourage awareness raising and the sharing of effective practices.⁷⁹ Despite this valuable work led by the Committee, however, a number of other more beneficial initiatives have been led from below—by civil society for example. Most of these have not been conducted under the banner of Resolution 1540, which is not necessarily a bad thing, but rather allows for these approaches to be more relevant and applicable to industry whilst fulfilling the resolution’s objectives.

Civil society could also prove to be a useful force multiplier in advancing 1540 implementation efforts. NGOs possess significant knowledge and understanding on 1540-related issues; they are able to view difficulties in implementation on the ground, and are often not subject to the same political difficulties that are faced by states and international and regional organisations in undertaking their work. The 1540 Committee has increasingly recognised this role, with civil society having played a role in the 2016 Comprehensive Review. The benefits of drawing on civil society expertise were also codified in Resolution 1977 (2011). Civil society forums have been held, including one hosted by the editors in Delhi in March 2014. These have allowed different organisations to come together and learn from each other, identify effective practices and discuss implementation challenges. Aspects of civil society can be particularly useful in engaging with industry, acting as a neutral third party to share information between industry and government.⁸⁰

In terms of engaging these stakeholders, the notion of developing and enhancing compliance, beyond-compliance, or security ‘culture’ has been viewed as useful. This has made an appearance in approaches to a number of 1540-related issues, including in relation to nuclear security and export controls.⁸¹ Culture can be ‘crucial in motivating adherence to norms where the force of law is weak or lacking’.⁸² Taking such an approach, however, does not come without difficulty, as ‘culture’ is a relatively abstract term that is difficult for many to grasp. In some countries where the basic physical protection measures, legal framework, and the enforcement work of government are lacking, seeking to develop and enhance such cultures may be seen as prematurely ambitious.

CONCLUSIONS: UNSCR 1540 IMPLEMENTATION CHALLENGES PAST AND PRESENT

Resolution 1540 and its agenda have encountered challenges—both in significant number and scope—since its adoption by the UN Security Council in April 2004. First, these consisted of broader, more conceptual challenges. These were especially apparent around the time of the resolution’s passage, although those relating to gauging compliance and varying threat perceptions, for example, have endured. Second, these challenges have also consisted of more practical implementation challenges—which have been more enduring in nature.

Early concerns were expressed regarding the use of a Chapter VII Security Council resolution—both universally applicable and legally binding—to address WMD proliferation to non-state actors. These initial concerns surrounding the resolution’s legitimacy, however, faded relatively quickly. More problematic have been the longer-term challenges in that the 1540 agenda seeks to deal with a threat which is not necessarily viewed as urgent by all states, especially states in the developing world. Many of these countries have other concerns that they perceive to be more urgent.

In terms of the on-going practical challenges, significant efforts have been made in follow-on resolutions and by the 1540 Committee to overcome them. The chapter has addressed many of the steps that have been taken regarding the need to match assistance providers with requests for assistance. It has also discussed the difficulties involving the engagement of other stakeholders. A number of potential opportunities to overcome these challenges has also been discussed, including prioritisation, the use of ‘dual-benefit’ models to gain traction in the developing world, and ‘bottom-up’ approaches.

One of the greatest challenges—and one that is long term in nature—is ensuring sustainability in these non-proliferation and nuclear security efforts. This is certainly something to which ‘dual-benefits’, ‘bottom-up approaches’, and wider stakeholder engagement may help to contribute.

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Preventing WMD Proliferation: The Future of UNSCR 1540

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Abstract This chapter explores how the resolution can best contribute to the non-proliferation regime in the years ahead. However, before exploring considerations related to the future of the resolution, it is helpful to explore societal dynamics that could impact upon the resolution's effectiveness and lessen the barriers to non-state actor involvement in proliferation in the future. After exploring these issues, this chapter then explores the implications of this analysis for the future of the resolution in terms of its scope and mandate, international legal framework, and national implementation. Finally, thoughts on the future of the resolution are presented.

Keywords United Nations Security Council resolution 1540 • Weapons of Mass Destruction (WMDs) • Intangible Technology Control (ITT) • Additive manufacturing • Synthetic biology • 1540 Committee • UN General Assembly • Capacity-building

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In the period of more than a decade since resolution 1540 was adopted, a good deal of progress has been made towards full implementation of the resolution's operational paragraphs. However, the last years also saw the low-level use of biological agents and the use of chemical weapons in Syria, which provides a reminder of the dangers that 1540 seeks to address.

The time since the resolution was adopted saw civil wars in several countries holding or once in possession of WMD, daily bomb attacks in some areas of the world, the knowledge of manufacturing WMD becoming available in near-downloadable form via the internet, and in which much of the world has suffered economic depression which could drive businesses to take risks to sustain profit; surprisingly, involvement of non-state actors in proliferation has been relatively restrained.

In the resolution's second decade and beyond, it is important to consider whether full implementation of the resolution can be achieved and sustained utilising the tools provided by the resolution and the related non-proliferation architecture. The purpose of this chapter is to explore how the resolution can best contribute to the non-proliferation regime in the years ahead. However, before exploring considerations related to the future of the resolution, it is helpful to explore societal dynamics that could impact the resolution's effectiveness and lessen the barriers to non-state actor involvement in future proliferation. After exploring these issues, this chapter then explores the implications of this analysis for the future of the resolution in terms of its scope and mandate, international legal framework, and national implementation. Finally, thoughts on the future of the resolution are presented.

SOCIETAL DYNAMICS

An obvious complication when considering the resolution's effectiveness is that the security environment is not static. The last decade saw substantial societal change driven by information and communications technology, for example, and this is only likely to continue. Looking to the future, both the advancement of globalisation and of technology will impact on whether the aims of the resolution can be met. While predicting exactly how these dynamic processes will affect the implementation of resolution 1540 in the future is impossible, it is nonetheless worth considering aspects of both phenomena before turning to consider the future of the 1540.

GLOBALISATION

It is generally recognised that society is being transformed by technological advancement even though providing a comprehensive description of the phenomena of globalisation is difficult. In working to define globalism, Keohane and Nye suggested that globalism is a state of the world involving ‘networks of interdependence at multi-continental distances,’ where these linkages ‘occur through flows and influences of capital and goods, information and ideas, and people and forces’.¹ While this list may not be comprehensive, each of these factors can affect non-state actor involvement in proliferation. In exploring these factors, it is recognised that in the context of non-state actor involvement in proliferation, it is access to technology and know-how that is key:

- *Capital and goods*: The movement of physical goods between countries is expanding at a near exponential rate.² While proliferators are dependent on only a small subset of all goods that are traded, this overall increase in trade makes the job of policing transfers and detecting covert shipments more difficult. Customs officials come into direct contact with only a small proportion of all shipments, relying instead on ‘risk profiling’ techniques to deter illicit trade. Customs officials are also relying more on company certification processes, such as CTPAT and AEO. One notable exception to the general trend towards less scrutiny of goods is screening for the shipment of radiological materials. Since the 9/11 attacks, and loosely under the auspices of resolution 1540, the US government has spent USD 850 million on portal monitoring equipment in countries as of December 2011.³ This exception aside, the general trend of less trade regulation is likely to continue into the future.
- *Information and ideas*: The internet, videoconferencing and related technologies have resulted in a dramatic upswing in the scope and scale of information flows. Technical information on almost every subject is now available to anyone with access to the internet. If such information is useful in proliferation, then the battle to restrain proliferation has certainly been further complicated. However, there may be grounds for some optimism. As explored below, while the advancement of technology certainly facilitates access to explicit information, it is not clear that tacit information—that is, know-how—is as easily transmittable.⁴

- *People and forces*: The movement of people is potentially linked to the movement of ideas in the form of know-how. As AQ Khan demonstrated when he returned to Pakistan in the 1970s, individuals can carry proliferation-sensitive know-how. The collapse of the Soviet Union also saw the development of scientist engagement programmes to discourage those with knowledge that could aid proliferation providing it to the highest bidder. Given the expansion of air travel, it could be expected that an individual could travel unhindered.⁵ This said, it is in the interests of states to exercise control over their borders for a number of reasons. States may also pay particular attention to those that have access to sensitive information in the past.

Overall, these aspects of globalisation appear to be slowly lowering the barriers to proliferation by making information and technology more available. While the pace of globalisation may vary, it seems clear that its direction is set.

TECHNOLOGICAL ADVANCE

A separate but potentially related issue to globalisation is the emergence of new technologies. Until now, the difficulty in manufacturing nuclear weapons and the means of delivering WMD has provided a difficult barrier for a proliferator to overcome; such difficulties all but prevented non-state actors from acquiring either nuclear weapons or ballistic missiles without reversion to buying or stealing a device from a state. In the chemical and biological weapons domain, it has been more complex: crude agents are often relatively easy to manufacture but difficult to weaponise.

Certain technological advancements have potentially lowered the technical barriers to proliferation. For example, in the nuclear and missile domain—where the production of weapons-usable fissile material is perhaps the greatest barrier to proliferation—the invention of Computer Numerical Control (CNC) machine tools allowed for the mass production of parts for the thousands of enrichment centrifuges that would be required in a practical programme.

Such advances, while potentially reducing the proliferation barrier faced by states, have not proven to be a game changer for the acquisition of WMD by non-state actors—at least not yet. There are many reasons for this: WMD programmes typically require significant resource and

multidisciplinary teams—for example, resources that non-state actors may find difficult to bring together for nefarious purposes.⁶

One key technology that has the potential to be a game changer across all forms of WMD in ways that may not yet be fully understood is additives manufacturing (often called 3-d printing).⁷

In the nuclear domain, additives manufacturing techniques could not overcome the need to produce fissile materials, which is perhaps the key barrier to proliferation. However, such techniques could potentially be used to more efficiently manufacture fissile material hemispheres, meaning that less fissile material would be required than would be needed in traditional methods (which involve casting). In the missile domain, NASA is already using additives manufacturing technology to manufacture highly-special alloy parts.⁸

In the biological domain, the close equivalent of additives manufacturing is synthetic biology. Here, relatively straightforward processes are used to produce DNA from electronic DNA sequences, with such techniques already being exploited for commercial purposes in biotechnology laboratories. Synthetic biology has begun to receive a great deal of attention from the non-proliferation community after researchers attempted to publish research on how the H5N1 strain of bird flu could be modified for more frequent human to human transmission.⁹ This raises concerns as to what non-state actors, whether experts or otherwise, could do with explicit information that is in the public domain.

When combined with the effects of globalisation, the risks of technological advance may therefore appear significant. Information and know-how is increasingly available, as is the equipment necessary to exploit it. However, it is vital to bear in mind that technological advance is desirable and must continue. Without advances in the biological sciences, human kind could be all but wiped out by plague and millions could die from hunger. The challenge is therefore to find ways of managing the risks associated with technological advancement while not inhibiting scientific progress. This will be further addressed below.

THE FUTURE OF THE 1540 FRAMEWORK

What does the forgone analysis of social and technological transformation tell us about the future of 1540 as a mechanism? It is useful to consider this question in three 1540 contexts: scope and mandate, international legal mechanisms, coordination and administration, and capacity building.

Scope and Mandate

As Tobey highlighted, resolution 1540 was specifically adopted under Chapter VII of the UN Charter so that it would be universally binding. However, the use of Chapter VII expressly required that the resolution recognise the primacy of the state in enacting its operational paragraphs. The resolution, passed in response to AQ Khan and in the post-9/11 context, focuses its operational paragraphs on the role of non-state actors in proliferation. These two factors potentially combine to constrain the utility of 1540 in responding to proliferation threats in two ways: the first relates to how 1540 can contribute to the prevention of state proliferation; the second relates to how 1540 can respond to transnational issues.

State proliferation: It is clear that effective implementation of 1540's measures can also help to mitigate broader security risks. For example, while 1540 is aimed at non-state actors, implementation of its measures can also substantially curtail the ability of states to proliferate as states regularly use non-state actors to procure goods through covert means. Moreover, many of 1540's measures can also contribute directly or indirectly to the curtailment of overt or covert proliferation by states, even if not involving non-state actors. This said, it is not clear that the current resolutions related to 1540 provide an appropriate base to realise this broader role. For example, to be an effective tool in preventing state proliferation, it would be necessary to specify what technologies should not be exported without arrangements in place to manage the proliferation risk. At present, however, 1540 does not reference a list of technologies.

Transnational Issues: Implementation of 1540's requirements is too often done in a stove-piped and state-centric way. This is in contrast with the nature of business which often operates across national boundaries, meaning that any one national authority cannot control the whole organisation.¹⁰ This problem is complemented by the fact that supply chains for proliferation-sensitive technologies are increasingly likely to be transnational. There are efforts to coordinate policies among countries on such transnational issues, with the export control regimes and the Nuclear Security Summit process being examples. States can (and to some extent do) opt to share intelligence information to counter such risks. However, there is no one body that can holistically consider the prosperity verses security issues associated with globalisation, for example.

As the only universally binding framework to respond to proliferation challenges, it can be argued that the resolution provides the only existing

tool that is capable of this role with regards to transnational issues. That said, these issues are potentially beyond the scope of the mandate provided by the resolution and the competence of the 1540 Committee, which works to further implementation of the resolution.

Another issue concerning the resolution's scope and mandate relates to what the resolution requires states to do. Following negotiations, the text of resolution 1540 leaves states to decide how to implement the resolution's requirements for themselves—that is, it is goal-setting rather than prescriptive to a high level of detail.¹¹ Article 2 of the resolution reinforces this principle by expressly stating that... 'States, in accordance with their national practices shall adopt and enforce appropriate laws'. However, the merits of this approach have been questioned by some.¹² While effective laws must always be suited to the national circumstances (system of government, etc.) of the territories in which they are applicable, a lack of common approach across countries can undermine the objective of the provisions.

A final issue related to 1540's scope relates to the definition of WMD. Could or should WMD include radiological weapons and materials? Terrence Taylor, who was at the time coordinator of the 1540 Group of Experts, has suggested that radiological materials could be covered by 1540 under the resolution's provisions for 'related materials'.¹³ However, this is an interpretation of the resolution rather than an expressed inclusion. While it is right for states to adopt appropriate laws based on national procedures to prevent terrorist use of radiological materials and that radiological materials are included in instruments loosely related to 1540 (such as the Global Initiative to Combat Nuclear Terrorism), attempting to address the risks of radiological terrorism under the auspices of 1540 could be a step too far for the resolution.

On matters such as this, the 1540 Committee must reach a decision and produce guidance, escalating to the Security Council where necessary to ensure that the objectives of Resolution 1540 can be met.

International Legal Framework

The international community has many legal mechanisms at its disposal to enact agreements and measures. In the non-proliferation realm, treaties (the Nuclear Non-proliferation Treaty, the Chemical Weapons Convention, and the Biological and Toxic Weapons Convention) are used commonly. Also in the non-proliferation realm are groups of likeminded states, such

as the export control regimes that are more akin to gentleman's agreements than formal commitments. As Salisbury notes, the adoption of Resolution 1540 is a relative oddity both because it was adopted under Chapter VII and because it is universally binding.

There is no pressing need to change the legal instrument through which 1540's requirements are set out. Indeed, at a 1540 civil society forum hosted by several of the authors of this volume in India in February 2014, there was a general feeling that 1540, as a Security Council resolution, was 'here to stay'.¹⁴ In 2012, former US coordinator for 1540 Tom Wuchte also described 1540 in the context of Resolution 1977, which extends the 1540 Committee's mandate by a decade, as a 'durable mechanism in the international effort to stem the proliferation of weapons of mass destruction'.¹⁵ Nonetheless, there is merit in considering whether use of some other universally-binding legal instrument could better fulfil 1540's mission in the longer term, particularly given the societal dynamics and limits to 1540's scope and mandate that were outlined earlier in this chapter. However, as argued below, it is perhaps the expiry of the Committee's current mandate in 2021 that provides an appropriate opportunity for this broader re-examination given that states will have had 17 years to implement the binding requirements of 1540.

There are certain specific developments that suggest that consideration of alternative international legal instruments could be beneficial. One new development since the adoption of 1540 in 2004 is the adoption through the General Assembly of the Arms Trade Treaty in 2013.¹⁶ The ATT is the first universally binding treaty on the subject of conventional weapons proliferation. Its passage was not without contest and its scope is somewhat limited, but adoption by the UN's General Assembly affords the treaty a high degree of legitimacy within the international system.¹⁷ As the ATT only recently entered into force in 2014, it is not yet possible to evaluate its full implications in relation to other mechanisms used to prevent the proliferation of conventional arms, such as the Wassenaar Arrangement. However, it is generally understood that the ATT provides an essential backstop to conventional arms proliferation upon which other initiatives and regimes can build. If the Arms Trade Treaty proves to be a success in its implementation, consideration should be given as to whether 1540's measures could similarly be enacted through the General Assembly. The General Assembly, at the urging of President George W. Bush did adopt a resolution in 2002 which contained similar language to that which was adopted in 2004, although the General Assembly was specifically

aimed at preventing terrorists from acquiring WMD as opposed to preventing non-state actor involvement in proliferation.^{18,19}

Another issue concerns enforceability: When 1540 was being negotiated, it was seen as an aspirational resolution that could provide—for those states with an interest in doing so—the legal mandate to take action to curb non-state actor involvement in proliferation.²⁰ As such, the resolution had no provisions for international enforcement. Even if the resolution did have enforcement provisions, the overall level of adherence at the time of adoption was such that many, if not most, states would have been non-compliant. Enforcement provisions may have provided a stick with which to motivate the more rapid adoption by states of national laws to meet specific needs of 1540. However, 1540 requires more than the adoption of laws: national implementation cannot be successful if it is pursued as a box-ticking exercise.

More than a decade on and coverage of 1540 implementation, as the previous chapters have highlighted, is much improved. States have certainly now had both enough time and access to enough assistance to have put in place the core legislative requirements of 1540 and to report to the 1540 Committee. Further time may be required to overcome the implementation challenges identified in the chapters by Salisbury and Viski, particularly in the developing world. By 2021, when the Committee's current mandate expires, states will have had 17 years to implement the resolution's requirements. While there may be certain states that have been unable to fully pursue implementation of 1540's measures in that nearly two decade period, for the majority of states, there will be few excuses for having not done so.

By 2021, then, it may be appropriate to begin considering whether international enforcement measures would be appropriate to ensure that states do comply with the requirements of 1540 and to consider what international legal instruments are best placed to pursue these. There are a wide range of options. Already, as Salisbury noted, states are exerting diplomatic pressure to motivate states to comply. The legally binding nature of 1540 could mean that states could take each other to international court for failing to implement 1540's requirements. The Security Council could also, in theory at least, take other action.

Any moves toward having an international enforcement mechanism built around 1540 could prove highly controversial. Therefore, it would be beneficial to pursue this only if the measures were seen to be legitimate.

This raises the question of the future legitimacy of 1540. The route through which the resolution was adopted was a controversial one, although the objections to the UNSC's adoption of the resolution have somewhat faded over time. Nonetheless, 1540 continues to be a measure that was adopted by 15 states and which is binding on nearly 200. As Salisbury highlights, the Security Council is partly elected, but it cannot be considered a democratic or representative body.

The international community does have other forums that are both democratic and representative. Of particular relevance is the General Assembly, through which the Arms Trade Treaty was adopted. Consideration should be given to moving toward an alternative such as a General Assembly-based resolution or a convention if the legitimacy of the Security Council becomes subject to challenge.²¹

Another factor that is vital if non-state actor involvement in proliferation is to be prevented is the sustainability of the resolution's requirements. Resolution 1540 will remain in effect even if resolutions are not adopted to extend the Committee's mandate. However, this leaves open the question of whether the norms and commitments generated as a result of 1540 could be sustained based upon a resolution without a corresponding coordinating and capacity building arrangement like the Committee. Consideration must therefore be given to what coordination and administration arrangements can be sufficiently enduring to meet 1540's objectives in the longer term.

Coordination and Administration

The 1540 Committee, as a Committee of the Security Council and with support of its group of experts, currently has the mandate to coordinate such outreach and capacity building. However, as a body of the politically-charged Security Council, there are constraints to the ability of the Committee to do so. One result of this is that the Committee has so far largely failed to find effective ways to work with many other UN bodies and organisations or the multilateral export control regimes, for example.

This has manifested itself in many ways. One particularly important issue relates to export control lists. Resolution 1540 requires states to adopt control lists to prevent proliferation of nuclear, chemical, and biological weapons or their means of delivery, but 1540 specifically does not mention the lists of the export control regimes. This raises the question: what lists, therefore, should countries adopt to meet their 1540

requirements? Possible answers include, but are not limited to, drawing upon the export control regimes or to the underlying non-proliferation treaties (i.e. the Zangger Committee lists in the nuclear context). Other more novel options which may be particularly suited to the developing world include linking export licensing to customs commodity code.²²

The failure of the 1540 Committee to address these issues may have systematic origins: as a political rather than technical body, its decisions are often politicised, reflecting the interests in particular of the veto-wielding Security Council members. Could a technical secretariat or some other body take on the administration of 1540? Certainly, it is a burden on the Security Council and its UN Secretariat to maintain the 1540 Committee (bearing in mind that Security Council committees tend to be short lived and finite in nature).²³

States could do more to assist the Security Council in pursuing the implementation of 1540. For example, states could provide associate experts that the 1540 Committee could draw upon when a need to do so is identified. Either through states or direct from the Committee, efforts should also be taken to more fully engage civil society in realising the resolution's objectives. This is explored further below.

Capacity Building

A central role of the 1540 Committee has been coordinating outreach and capacity building. The Committee itself has only limited resources for direct involvement in capacity building, although its group of experts does provide this to some extent.²⁴ The 1540 mechanism could certainly be more central to the provisions of capacity building.

There are some immediate challenges in this area. Despite the requirement for national reporting and the maintenance by the Committee of the country matrices, there continues to be only a crude understanding of Resolution 1540's implementation at the national level. The implementation challenges at the national level are discussed in the next section. However, a key observation is that it is not possible to prioritise outreach and capacity building without having a good understanding of what is currently being done in each country. The group of experts worked to address this issue in the lead up to the 2016 comprehensive review but the picture of implementation remains far from complete.

One novel solution being considered by King's College London is the use of a crowdsourcing platform to involve civil society in monitoring the

implementation of the resolution. The idea behind this platform is that members of civil society, at both the national and international level, often have insights into how individual countries go about implementing measures related to 1540. If these insights can be harnessed in a systematic way, a much greater understanding of 1540 implementation can be developed which could be updated in near real time. One of the strengths of this model is that it allows the significant but dispersed resources of civil society to be utilised. There are challenges, however. One primary challenge relates to accuracy. When so many members of civil society are involved in a project, how can one ensure that common standards are followed when making assessments? Another relates to legitimacy, as states may resist being monitored by civil society. A third relates to resources. While the costs of involvement in such an effort are small, a question of how key entities in civil society can be motivated to contribute arises.

While tools such as these present challenges, the innovative use of IT and related platforms is vital if 1540 is to be effective. How else other than through the use of IT systems can all of 1540's stakeholders—which potentially include the whole population of the world—be engaged?

Putting aside the need to understand national implementation, another challenge that the Committee must address relates to resources. Presently, the Committee itself has relatively limited outreach resources. This is not to say that resources are not available for outreach: every year, hundreds of millions of dollars are provided by donor countries, such as the US, European Union Member States and so on for capacity building on issues that fall within 1540's scope. Additionally, civil society could also provide substantial resources for outreach and capacity building. However, too often the spending of these resources is not coordinated with the 1540 Committee. The Committee therefore must take a fresh look at its outreach strategy in order to ensure that all possible resources are utilised. Member states should also engage more fully with the Committee when designing their own bilateral capacity building efforts. As Salisbury suggested, the Committee should also ensure that resources are available not only for states that are prepared to ask for it, as in many cases this will result in no assistance being rendered.

Coordinating Assistance

There is a more fundamental point with regards to outreach activities, however, that the international community should consider. Presently, 1540 is not universally seen as the default mechanism through which to

conduct capacity building to counter WMD proliferation. Often, outreach is conducted bilaterally (which should not be seen as problematic). Additionally, many states see the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (Global Partnership) as the default non-proliferation capacity building apparatus.²⁵

The Global Partnership extended its scope and mandate in 2011 to move beyond primarily providing support to counter the risk of proliferation from the former Soviet Union.²⁶ Similarly, the Nuclear Security Summit process largely took over 1540 on nuclear security issues (narrowly defined), although the 2016 Summit marked the end of the process.²⁷ There may be many reasons for this. The Global Partnership was, after all, created to deal with the urgent risk that materials and know-how useful in the proliferation of WMD could become available on the market after the collapse of the Soviet Union. However, with Global Partnership efforts (and funding) increasingly focusing away from the former Soviet Union, and, at the time of writing relations between the West and Russia are constrained following the annexation of Crimea (suggesting that the Global Partnership will be a less effective body, at least for the short term), consideration should be given to whether the Global Partnership provides the optimum vehicle for outreach in the short or long term.

This said, it is recognised that there are certain advantages to both the Global Partnership and the now past Nuclear Security Summit process over the 1540 process. In particular, the involvement of heads of state in both bodies is to be welcome as it can help to overcome bureaucratic, diplomatic, and political barriers to outreach and capacity building.²⁸

Given that much of the core work of the Global Partnership has already been undertaken in order to deal with the proliferation threat from the former Soviet Union, it is timely to think again about whether the Global Partnership is the appropriate body to coordinate funding for capacity building in the future. Certainly, 1540 as a universally binding mechanism that has a capacity building mandate provides a possible alternative mechanism.

It is evidently more difficult to bring together the heads of all 193 UN member states. Consideration should be given to the holding of a heads of state summit on 1540 even if it is necessary to subdivide by topic or region.

Regional and Sub-regional Organisations

It has been increasingly recognised that regional organisations can play a useful role in the implementation of resolution 1540.²⁹ This is true not

only in those countries with the fewest resources, such as Africa/ the African Union, but also in the most developed countries, such as Europe and the European Union. The role of regional organisations evidently varies. In Europe, EU Member States are bound by EU regulations in relation to dual-use export controls, meaning that it is the EU that adopts the laws and updates the control lists. In most other regions, the regional organisation cannot act as regulator. In such circumstances, the role of the regional organisation is perhaps about building political buy-in and providing outreach capacity so that individual states can enact appropriate measures.

Looking to the future, how can regional organisations best support implementation of Resolution 1540's requirements? Resolution 1977 lists several measures that are intended to realise such support. This includes calling upon regional and sub-regional organisations to designate points of contact and urge the 1540 Committee to engage actively with regional and sub-regional organisations. Numerous organisations have appointed points of contact, thus providing a clear mechanism for capacity building activities. The 1540 Committee's 13th programme of work also sets out several practical measures that the Committee is taking or plans to take to engage regional organisations.³⁰

It should be recognised that engagement between the 1540 Committee and regional and sub-regional organisations, with the exception of legislative bodies such as the EU, cannot directly result in enhanced implementation of Resolution 1540. In most instances, the purpose of engaging regional organisations is to create another source of assistance in engaging individual states. Therefore, when considering the role of regional organisations in the future, it is necessary to consider how to maximise their ability to assist states. However, another role for regional organisations can be in filtering and coordinating outreach activities in order to avoid outreach fatigue.³¹

As argued further below, one obvious but underutilised resource that regional and sub-regional organisations could draw upon is civil society. The potential contribution of civil society in implementing 1540 is well understood,³² however, it continues to play only a limited role in the 1540 context. Regional organisations are well positioned to utilise the resources of civil society to assist their Member States in implementing 1540.

Drawing upon civil society could also provide resources to regional organisations through which to assist states with reporting to the 1540 Committee. Presently, regional organisations are generally not involved in

reporting, although the EU has submitted a report to the Committee. Involvement of regional organisations in reporting could offer one particular advantage: regional organisations are well placed to share experiences on how to implement 1540 between similar countries.

NATIONAL IMPLEMENTATION: OVERCOMING THE CHALLENGES

As highlighted in the previous chapters, while there was a great deal of progress in implementing 1540's requirements at the national level in the first decade since its adoption, there are currently still significant implementation gaps. The reasons for these gaps vary from country to country, and to some extent, from region to region. However, they can be categorised generally as follows: lack of political commitment, lack of resources, and technical implementation challenges. Are these reasons likely to persist? Overall, the unfortunate answer is likely to be that they will persist, although there may be iterative progress in each area.

Political Commitment

A lack of political buy-in, as Nayan highlighted, is one of the key restraints to 1540 implementation at the national level. It is argued that restraint in political commitment is driven by a variety of factors, including competing national priorities (such as security challenges and economic and humanitarian imperatives). It is unlikely that there will be any significant jump in political commitment to implementation of 1540's measures in the decades ahead unless one of two factors come to pass. The first would relate to the gratuitous involvement of non-state actors in the acquisition or use of WMD. Unfortunately, as the previous section highlighted, the progress in implementing controls since 2004 has not been sufficient to justify the conclusion that non-state actor involvement in proliferation can yet be prevented. However, the international community's best efforts will work to counter this risk.

The second factor relates to a significant increase in the foreign policy priority assigned to 1540 in key countries and regions such as the US and Europe. The Nuclear Security Summit process provided a relevant and real-world example of how this can be achieved in practice, although the challenges of bringing together the heads of state for all 193 UN member states has already been addressed.

Linking back to the earlier exploration of legal frameworks, there is also a possibility that political commitment to the 1540 agenda could regress. While 1540 was adopted through a controversial route, it is widely accepted in national capitals because (almost) all countries can agree that the acquisition or use of WMD by non-state actors is undesirable. Even states that sponsor terrorism are likely to oppose the use of WMD because of the risks of attribution (whether it be correct or otherwise). However, if 1540 was to become linked to the politically toxic process on disarmament or if consensus was to build that the measures adoption under the Security Council was illegitimate, the effectiveness of 1540 as a coordination process would drop off.

Any reopening of the debate on legal instruments presents both risks and opportunities. In such circumstances, instinct may be to maintain the status quo. However, should it become apparent that consensus on a General Assembly resolution be achievable, pursuit of this could provide stability on the 1540 agenda in the long term. Helpfully, this could potentially be pursued in parallel to the maintenance of the Security Council resolution ensuring that there is no gap in coverage.

Resource Constraint

A primary constraint on 1540 implementation is resource availability at the national level. In many countries, tackling non-state actor involvement in proliferation—or even proliferation and WMD more generally—are not an urgent priority. In most countries, but in particular in countries that are poor, low priority equates to low (or no) resources. Unfortunately, unless there is a substantial change in political commitment, as discussed above, it is unlikely that there will be a substantial uplift in resource provision at the national level.

In light of this, efforts should be made to minimise technical implementation challenges (as discussed in the next section) and to maximise the provision of assistance. In addition to regional organisations, there are two primary sources of assistance that could help. The first is assistance from other states. Presently, as Nayan noted, the US, EU, and other advanced economies already provide substantial support to 1540's implementation, although more could be done to coordinate this assistance with the 1540 Committee. However, it is unlikely that the usual suspects can substantially increase the resources they provide without a substantial increase in political will. There may be scope for other countries to provide financial support.

One interesting possibility is China. As a rapidly growing economy, China could probably afford to give more support. As a permanent member of the Security Council, China is also a significant stakeholder in 1540. As China's non-proliferation record is often questioned, provision of resources in support of 1540 could also go a long way to demonstrate the country's commitment to non-proliferation.³³ Finally, Chinese enterprise—be it state owned or otherwise—currently engages in a very active process of investing in developing countries, the very countries that suffer most from a lack of resource. It is therefore potentially in China's interest to actively assist other countries in implementing 1540's measures through the provision of funding.

The EU also should do more. Presently, the EU spends substantial amounts on capacity building. However, too often, this provision of funding is not coordinated with the 1540 Committee. Additionally, funding is rarely provided directly to the 1540 Committee.³⁴

It should be noted that states do not have to provide support in the form of funding. The Poland-Croatia process shows the value of sharing expertise and best practices.³⁵ As mentioned above, States work bilaterally or through groupings of likeminded or regional countries to share such experiences and good practices at low cost.

All of the above avenues should be pursued. However, there is one additional group that is currently underutilised promoting the effective implementation of 1540's measures: civil society. In many ways, civil society can be better placed than states to conduct outreach. Civil society includes academic experts and former practitioners who can engage in outreach without diverting current practitioners from the border or licensing authority. Civil society can often also raise funding from novel sources. As noted at the India civil society forum, it is true that the quality of civil society input is variable.³⁶ In this regard, civil society can be viewed as a market, offering assistance of all quality standards. The point about a market, however, is that the consumer (recipient country) and/or the funder must gain the support (and trust) of the national authority to proceed with the activity. Therefore, civil society is accountable for the quality of the support it provides.

One particular area where civil society can usefully provide input is with regards to reporting. At the time of writing, some countries still had not submitted national reports, and the quality of prepared reports varies considerably. One reason for this is resource: states often simply do not have the resources that would be required to produce good quality reports. As explored above, civil society is well positioned to assist states in preparing

implementation reports on behalf of the national authority. The state, or the 1540 Committee, could continue to be the ultimate arbiter on whether to formally submit the report.

CONCLUSIONS: PREVENTING WMD PROLIFERATION AND THE FUTURE OF 1540

This chapter has sought to explore how the 1540 agenda can best be taken forward given the current nature of the proliferation threat and societal dynamics explored above. There are certainly constraints to this study. For example, the brazen involvement of non-state actors in proliferation or the egregious use of WMD by non-state actors in an act of terrorism would massively refocus efforts to realise Resolution 1540's objectives. Similarly, the politicisation of 1540 could have the opposite effect, resulting in a de-legitimisation of the resolution's objectives and obfuscation towards its implementation.

When thinking about the future of 1540, it is important to be clear about the object of study. The resolution itself is a means to an end. In general, the aim should be to realise the end, utilising the resolution where possible. It is important also to differentiate between the resolution and the Committee. The Committee's mandate is finite (for now, at least), whereas the resolution will continue to be in place until it is superseded or rescinded.

In pursuing the ends, there are alternative international legal frameworks and governance arrangements that could be considered. Reform may be required if the 1540 framework is to be a useful tool in meeting the emerging challenges of globalisation and technological advancement. However, regardless of whether any serious effort is made to rethink the means of 1540, there is much that can and should be done to improve the current arrangements. A key starting point is to understand how the resolution is currently being implemented. Next, a prioritised outreach plan is required. This in turn should form the basis of coordination with other actors, including national authorities and civil society.

By working through these issues in a prioritised way, the risks of non-state actor involvement in proliferation can be reduced. However, as highlighted in previous chapters, non-state actors are assisting states in proliferating WMD on a day by day basis. It should be understood that even the full implementation of Resolution 1540 in all countries is not likely to be enough to negate the risks of non-state actor involvement in

proliferation entirely. As such, consideration should also be given to what broader measures could help and how 1540 could contribute or evolve to realise these points.

Finally, it should be remembered that commerce and scientific advancement are both vital to international peace and security. When considering the future of resolution 1540, the primary objective should be to minimise the proliferation risks whilst also minimising the impact on legitimate business and research activity. Resolution 1540, as a universally binding but target-neutral framework, is well positioned to provide a forum through which to consider such issues.

NOTES

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8. 'NASA's Space Launch System Using Futuristic Technology to Build the Next Generation of Rockets', [nasa.gov](http://www.nasa.gov/exploration/systems/sls/selective_melting.html#.U8zf0PldWSo). Available at: <http://www.nasa.gov/exploration/systems/sls/selective_melting.html#.U8zf0PldWSo> (Accessed 21 July 2014).
9. See for example, Ouaghran-Gormley, S.B., 'Dissuading Biological Weapons Proliferation', *Contemporary Security Policy*, Vol. 34, No.3, 473–500, <https://doi.org/10.1080/13523260.2013.842294>.

10. It should be noted that certain countries, including the US, have enacted so-called extraterritorial measures, which have the effect of influencing non-state actors in third states. This has proven a powerful tool in responding to concerns both regarding proliferation and terrorism, with entities of concern, in effect, being cut off from the international financial system. A key point, however, is that these measures are not enacted under the auspices of 1540.
11. As argued by the French representative at the open Security Council meeting in 2004, as read in... Bosch, O. and Van Ham, P., 'Global Non-proliferation and Counter Terrorism: The Impact of 1540', *The Royal Institute of International Affairs*, 2007, p. 7.
12. Cupitt, R. 'Personal Reflections on UNSCR1977', 1540 Com'ass, Winter 2012, Vol. 1, Issue 1.
13. Taylor, T. 'Is "R" Covered by 1540?', Discussion Forum, 1540 Compass, Winter 2014, Issue 5.
14. Alpha (King's College), IDSA and ISS in collaboration with United Nations Office for Disarmament Affairs 'Identification of Effective Implementation Practices by Examining UNSCR 1540 (2004) after a Decade of Its Existence', 25–26 February 2014. Available at: <<http://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/csss/pubs/Alpha--IDSA-report.pdf>> (Accessed 16 July 2014).
15. Wuchte, T. 'A Strategy for the 1540 Committee', 1540 Compass, Winter 2012, Vol. 1, Issue 1.
16. Arms Trade Treaty, UN, New York. Available at: <<https://unoda-web.s3.amazonaws.com/wp-content/uploads/2013/06/English7.pdf>> (Accessed 16 July 2014).
17. See for example, Cupitt, R. 'Personal Reflections on UNSCR1977', 1540 Compass, Winter 2012, Vol. 1, Issue 1.
18. President Bush argued for the adoption of an antiproliferation treaty in his speech to the general assembly in September 2002. See 'Statement by His Excellency Mr. George W. Bush, President of the United States of America Address to the United Nations General Assembly September 23, 2003'. Available at: <<http://www.un.org/webcast/ga/58/statements/usaeng030923.htm>> (Accessed 29 July 2014).
19. 'Measures to prevent terrorists from acquiring weapons of mass destruction', UN General Assembly Resolution 57/83 (as adopted at the 57th plenary on 22 November 2002).
20. Interview with Tobey, W. conducted by Ian J. Stewart, Summer 2013.
21. For example, it is possible that states or groupings of states could challenge the legitimacy of the security council 'remaining seized' of the issues covered by resolution 1540 at the end of the 10 year mandate provided by resolution 1977. What factors could drive such challenge are difficult to predict but could include a retribution for a failed 2020 review conference.

22. The Mexican system utilises this approach, for example. See Ochoa, C.E.H, and Morales, P.F.G, 'A Milestone in Mexico's Export Control Evolution', *The 1540 Compass*. Available at: <<http://cits.uga.edu/uploads/compass/03-07-ochoa.pdf>> (Accessed 21 October 2015).
23. Cupitt, R., 'Nearly at the Brink: The Tasks and Capacity of the 1540 Committee', *Arms Control Today*, September 2012.
24. Cupitt, R., 'Nearly at the Brink: The Tasks and Capacity of the 1540 Committee'.
25. See, for example, Heyes, A., Bowen, W. and Chalmers, H. 'The Global Partnership Against WMD: Successes and Shortcomings of G8 Threat Reduction since 9/11', Whitehall paper 76, Royal United Services Institute, 2011.
26. See 'Global Partnership Against the Spread of Materials and Weapons of Mass Destruction: President's Report for 2013', Foreign & Commonwealth Office, London, December 2013. Available at: <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/269504/UK_2013_GP_Report.pdf> (Accessed 29 July 2014).
27. For example, the final communique of the 2010 nuclear security summit, while mentioning several other nuclear security instruments, did not mention UNSCR1540. 'Communiqué of the Washington Nuclear Security Summit', The White House, office of the Press Secretary, 13 April 2010. Available at: <<http://www.whitehouse.gov/the-press-office/communique-washington-nuclear-security-summit>> (Accessed 18 July 2014).
28. Heyes, A., Bowen, W. and Chalmers, H. 'The Global Partnership Against WMD: Successes and Shortcomings of G8 Threat Reduction since 9/11', p. 10.
29. For example, UNSCR 1977, which extended the mandate of the 1540 Committee by 10 years 'urges' the 1540 Committee to "continue to engage actively with States and relevant international, regional and sub-regional organizations to promote the sharing of experience, lessons learned and effective practices, in the areas covered by resolution 1540 (2004), drawing in particular on information provided by States as well as examples of successful assistance, and to liaise on the availability of programmes which might facilitate the implementation of resolution 1540 (2004), while bearing in mind that customized assistance is useful for the effective implementation of resolution 1540 (2004) at national levels".
30. 13th Programme of Work, 1540 Committee, UN, New York.
31. See for example, Beck, M., 'Implementation Challenges for Small and Developing Countries', *1540 Compass*, Issue 4, Fall 2013.
32. Finlay, B., 'Meeting the Objectives of UN Security Council Resolution 1540: The Role of Civil Society', Stimson Centre, December 2012, and Sokova, E. 'Improving Capacity, Communication, and Civil Society

- Engagement’, 1540 Compass, Issue 4, Fall 2013. Available at: <<http://cits.uga.edu/1540compass/article/improving-capacity-communication-and-civil-society-engagement>> (Accessed 21 July 2014).
33. Bowen, W., Stewart, I. J. and Salisbury, D. ‘Engaging China in Proliferation Prevention’, *Bulletin of the Atomic Scientists* (October 2013).
 34. Alpha (King’s College London), IDSA and ISS in collaboration with United Nations Office for Disarmament Affairs ‘Identification of Effective Implementation Practices by Examining UNSCR 1540 (2004) after a Decade of Its Existence’, Conference Proceedings, 25–26 February 2014. Available at: <<http://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/csss/pubs/Alpha--IDSA-report.pdf>> (Accessed 21 July 2014).
 35. ‘Information Note’ on event: ‘1540 Peer review conducted by Croatia and Poland (visit to Croatia)’, 1540 Committee, United Nations, New York. Available at: <http://www.un.org/en/sc/1540/transparency-and-outreach/pdf/Information%20Note_Peer_Review_Zagreb_2013-43.pdf> (Accessed 18 July 2014).
 36. Alpha (King’s College London), IDSA and ISS in collaboration with United Nations Office for Disarmament Affairs ‘Identification of Effective Implementation Practices by Examining UNSCR 1540 (2004) after a Decade of its Existence’.



Conclusions: The Future of UNSCR 1540

Daniel Salisbury, Ian J. Stewart, and Andrea Viski

Abstract Resolution 1540 provides a unique tool in the effort to prevent nuclear proliferation. It is legally binding, universal in scope and complementary to other non-proliferation treaties, instruments and tools. The resolution's first decade saw positive national implementation trends, and it has helped to solidify a norm against WMD proliferation. Despite this, it remains unclear how much safer, if at all, the world is as a result of the adoption of resolution 1540. Challenges remain, including many gaps in implementation around the world, the lack of a clear definition regarding the phase 'full implementation', and sustainability of the resolution past 2021. Achieving full implementation, however it is measured, will require a redoubling of efforts to build capacity and share experience. Further consideration will have to be given to how best to marshal and prioritise the application of resources.

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Resolution 1540 provides a unique tool in the effort to prevent nuclear proliferation. Its universally binding nature and the fact that it is focused on preventing proliferation to and by non-state actors mean that it is complementary to other non-proliferation treaties, instruments and tools. In the resolution's first decade, the national implementation trends of the resolution's requirements were positive: Clearly, many states have responded to the requirements placed upon them by the Security Council in early 2004.

Despite this, it remains unclear how much safer, if at all, the world remains as a result of the adoption of resolution 1540. Certainly, the resolution has helped to solidify the norm against proliferation and made it less likely that individuals and entities in key states—both those holding strategic technologies, and those at key nodes in the global infrastructure of international trade—will become involved in proliferation. However, the resolution has not been fully implemented, and it appears unlikely that it will be by 2021, as called for by the President of the Security Council in his remarks to mark the 10th anniversary of the resolution in 2014.¹

Evidently, one challenge is the lack of a clear definition regarding the phase 'full implementation'. The language of the resolution was inherently ambiguous, meaning that any definition derived now would have to be introduced and agreed belatedly. Questions regarding full implementation include whether all states must implement all aspects of the resolution for the full implementation to be achieved or whether it would be enough for all states to implement some form of base-line measures. For example, all states could perhaps implement transit and transshipment controls provided that the states that hold proliferation-sensitive technologies also implement the other measures required by the resolution.

The effectiveness of resolution 1540 could also be measured based upon whether proliferation-related trade is being prevented. As has been highlighted, illicit trade involving non-state actors has continued throughout the resolution's first decade despite the increasing coverage of controls.

Achieving full implementation by 2021, however it is measured, will require a redoubling of efforts to build capacity and share experience. Further consideration will have to be given to how best to marshal and prioritise resources towards achieving full implementation. Presently, the 1540 Committee, with its associated group of experts, is not seen as central to the task of coordinating capacity building. As Nayan's chapter highlighted, regional and sub-regional organisations have substantial potential to further the implementation of the resolution. More could also be done to utilise the resources of civil society in implementing the resolution, towards which a number of suggestions have been provided in the chapters of this edited volume.

A priority for the 1540 Committee should be in devising a more effective process for monitoring implementation. The two main methods used to monitor implementation—national reporting and the 1540 matrix system—are not providing sufficient insights to enable capacity building activities to be appropriately prioritised. Consideration should be given as part of this process to whether civil society can better support the monitoring of national implementation. Opportunities to 'crowd-source' implementation information could perhaps be pursued.

A final important point raised by Stewart will require further consideration given the conclusion of the 2016 Comprehensive Review. What should be the future of 1540—the resolution, associated agenda and work towards "full implementation"—after 2021 when the 1540 Committee's current mandate expires? Certainly, it should be expected that states will continue to implement the requirements of the resolution. Not doing so would mean that the threats to international peace and security that the resolution was originally adopted to counter were not being addressed—it would mean that the non-proliferation norm was receding, and not progressing.

It is not necessarily the case, however, that the international legal basis for these requirements going forward must be a new Security Council resolution. A number of possibilities in this regard have been considered in this volume. Ultimately, it is the ends rather than the means that are important: the collective objective of the international community in implementing the resolution's requirements should be to ensure that non-state actors cannot develop, acquire or use WMD.

NOTES

1. See: 'Statement by the President of the Security Council', United Nations Security Council, 07 May 2014. Available at: <http://www.un.org/en/ga/search/view_doc.asp?symbol=S/PRST/2014/7> (Accessed 09 December 2014).

APPENDIX A: FULL TEXT OF UNSCR 1540 (2004)

ADOPTED BY THE SECURITY COUNCIL AT ITS 4956TH
MEETING, ON 28 APRIL 2004

The Security Council,

Affirming that proliferation of nuclear, chemical and biological weapons, as well as their means of delivery,* constitutes a threat to international peace and security,

Reaffirming, in this context, the Statement of its President adopted at the Council's meeting at the level of Heads of State and Government on 31 January 1992 (S/23500), including the need for all Member States to fulfil their obligations in relation to arms control and disarmament and to prevent proliferation in all its aspects of all weapons of mass destruction,

Recalling also that the Statement underlined the need for all Member States to resolve peacefully in accordance with the Charter any problems in that context threatening or disrupting the maintenance of regional and global stability,

Affirming its resolve to take appropriate and effective actions against any threat to international peace and security caused by the proliferation of nuclear, chemical and biological weapons and their means of delivery, in conformity with its primary responsibilities, as provided for in the United Nations Charter,

Affirming its support for the multilateral treaties whose aim is to eliminate or prevent the proliferation of nuclear, chemical or biological weapons and the importance for all States parties to these treaties to implement them fully in order to promote international stability,

Welcoming efforts in this context by multilateral arrangements which contribute to non-proliferation,

Affirming that prevention of proliferation of nuclear, chemical and biological weapons should not hamper international cooperation in materials, equipment and technology for peaceful purposes while goals of peaceful utilization should not be used as a cover for proliferation,

Gravely concerned by the threat of terrorism and the risk that non-State actors* such as those identified in the United Nations list established and maintained by the Committee established under Security Council resolution 1267 and those to whom resolution 1373 applies, may acquire, develop, traffic in or use nuclear, chemical and biological weapons and their means of delivery,

Gravely concerned by the threat of illicit trafficking in nuclear, chemical, or biological weapons and their means of delivery, and related materials,* which adds a new dimension to the issue of proliferation of such weapons and also poses a threat to international peace and security,

Recognizing the need to enhance coordination of efforts on national, sub-regional, regional and international levels in order to strengthen a global response to this serious challenge and threat to international security,

Recognizing that most States have undertaken binding legal obligations under treaties to which they are parties, or have made other commitments aimed at preventing the proliferation of nuclear, chemical or biological weapons, and have taken effective measures to account for, secure and physically protect sensitive materials, such as those required by the Convention on the Physical Protection of Nuclear Materials and those recommended by the IAEA Code of Conduct on the Safety and Security of Radioactive Sources,

Recognizing further the urgent need for all States to take additional effective measures to prevent the proliferation of nuclear, chemical or biological weapons and their means of delivery,

Encouraging all Member States to implement fully the disarmament treaties and agreements to which they are party,

Reaffirming the need to combat by all means, in accordance with the Charter of the United Nations, threats to international peace and security caused by terrorist acts,

Determined to facilitate henceforth an effective response to global threats in the area of non-proliferation,
Acting under Chapter VII of the Charter of the United Nations,

1. Decides that all States shall refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery;
2. Decides also that all States, in accordance with their national procedures, shall adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them;
3. Decides also that all States shall take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery, including by establishing appropriate controls over related materials and to this end shall:
 - (a) Develop and maintain appropriate effective measures to account for and secure such items in production, use, storage or transport;
 - (b) Develop and maintain appropriate effective physical protection measures;
 - (c) Develop and maintain appropriate effective border controls and law enforcement efforts to detect, deter, prevent and combat, including through international cooperation when necessary, the illicit trafficking and brokering in such items in accordance with their national legal authorities and legislation and consistent with international law;
 - (d) Establish, develop, review and maintain appropriate effective national export and trans-shipment controls over such items, including appropriate laws and regulations to control export, transit, trans-shipment and re-export and controls on providing funds and services related to such export and trans-shipment such as financing, and transporting that would contribute to proliferation, as well as establishing end-user controls; and

establishing and enforcing appropriate criminal or civil penalties for violations of such export control laws and regulations;

4. Decides to establish, in accordance with rule 28 of its provisional rules of procedure, for a period of no longer than two years, a Committee of the Security Council, consisting of all members of the Council, which will, calling as appropriate on other expertise, report to the Security Council for its examination, on the implementation of this resolution, and to this end calls upon States to present a first report no later than six months from the adoption of this resolution to the Committee on steps they have taken or intend to take to implement this resolution;
5. Decides that none of the obligations set forth in this resolution shall be interpreted so as to conflict with or alter the rights and obligations of State Parties to the Nuclear Non-Proliferation Treaty, the Chemical Weapons Convention and the Biological and Toxin Weapons Convention or alter the responsibilities of the International Atomic Energy Agency or the Organization for the Prohibition of Chemical Weapons;
6. Recognizes the utility in implementing this resolution of effective national control lists and calls upon all Member States, when necessary, to pursue at the earliest opportunity the development of such lists;
7. Recognizes that some States may require assistance in implementing the provisions of this resolution within their territories and invites States in a position to do so to offer assistance as appropriate in response to specific requests to the States lacking the legal and regulatory infrastructure, implementation experience and/or resources for fulfilling the above provisions;
8. Calls upon all States:
 - (a) To promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral treaties to which they are parties, whose aim is to prevent the proliferation of nuclear, biological or chemical weapons;
 - (b) To adopt national rules and regulations, where it has not yet been done, to ensure compliance with their commitments under the key multilateral non-proliferation treaties;

- (c) To renew and fulfil their commitment to multilateral cooperation, in particular within the framework of the International Atomic Energy Agency, the Organization for the Prohibition of Chemical Weapons and the Biological and Toxin Weapons Convention, as important means of pursuing and achieving their common objectives in the area of non-proliferation and of promoting international cooperation for peaceful purposes;
 - (d) To develop appropriate ways to work with and inform industry and the public regarding their obligations under such laws;
9. Calls upon all States to promote dialogue and cooperation on non-proliferation so as to address the threat posed by proliferation of nuclear, chemical, or biological weapons, and their means of delivery;
 10. Further to counter that threat, calls upon all States, in accordance with their national legal authorities and legislation and consistent with international law, to take cooperative action to prevent illicit trafficking in nuclear, chemical or biological weapons, their means of delivery, and related materials;
 11. Expresses its intention to monitor closely the implementation of this resolution and, at the appropriate level, to take further decisions which may be required to this end;
 12. Decides to remain seized of the matter.

**Definitions for the purpose of this resolution only:*

Means of delivery: missiles, rockets and other unmanned systems capable of delivering nuclear, chemical, or biological weapons, which are specially designed for such use.

Non-State actor: individual or entity, not acting under the lawful authority of any State in conducting activities which come within the scope of this resolution.

Related materials: materials, equipment and technology covered by relevant multilateral treaties and arrangements, or included on national control lists, which could be used for the design, development, production or use of nuclear, chemical and biological weapons and their means of delivery.

APPENDIX B: FULL TEXT OF RESOLUTION 1977 (2011)

ADOPTED BY THE SECURITY COUNCIL AT ITS 6518TH
MEETING, ON 20 APRIL 2011

The Security Council,

Reaffirming its resolutions 1540 (2004) of 28 April 2004, 1673 (2006) of 27 April 2006 and 1810 (2008) of 25 April 2008,

Reaffirming that the proliferation of nuclear, chemical and biological weapons, as well as their means of delivery, constitutes a threat to international peace and security,

Reaffirming the need for all Member States to comply fully with their obligations and fulfil their commitments in relation to arms control, disarmament and non-proliferation in all its aspects of all weapons of mass destruction and their means of delivery,

Reaffirming that prevention of proliferation of nuclear, chemical and biological weapons should not hamper international cooperation in materials, equipment and technology for peaceful purposes while goals of peaceful utilization should not be misused for proliferation purposes,

Remaining gravely concerned by the threat of terrorism and the risk that non state actors may acquire, develop, traffic in or use nuclear, chemical, and biological weapons and their means of delivery,

Reaffirming its resolve to take appropriate and effective actions against any threat to international peace and security caused by the proliferation of nuclear, chemical and biological weapons and their means of delivery, in

- conformity with its primary responsibilities, as provided for in the United Nations Charter,
- Reaffirming its decision that none of the obligations in resolution 1540 (2004) shall be interpreted so as to conflict with or alter the rights and obligations of State Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, the Chemical Weapons Convention and the Biological and Toxin Weapons Convention or alter the responsibilities of the International Atomic Energy Agency or the Organization for the Prohibition of Chemical Weapons,
- Noting that international cooperation between States, in accordance with international law, is required to counter the illicit trafficking by non-State actors in nuclear, chemical and biological weapons, their means of delivery and related materials,
- Recognizing the need to enhance coordination of efforts at national, regional, subregional and international levels, as appropriate, in order to strengthen a global response to the serious challenge and threat to international peace and security posed by the proliferation of weapons of mass destruction and their means of delivery,
- Emphasizing the need for States to take all appropriate national measures in accordance with their national authorities and legislation, and consistent with international law, to strengthen export controls, to control access to intangible transfers of technology and to information that could be used for weapons of mass destruction and their means of delivery, to prevent proliferation financing and shipments, and to secure sensitive materials,
- Endorsing the work already carried out by the Committee established pursuant to resolution 1540 (2004), hereafter the 1540 Committee, in accordance with its programmes of work, including the establishment of the working groups for facilitating implementation of the Programme of Work,
- Recognizing States' progress in implementing resolution 1540 (2004), while noting that States have taken fewer measures in some of its areas,
- Endorsing also the valuable activities of the 1540 Committee with relevant international regional and subregional organizations,
- Taking note of international efforts towards full implementation of resolution 1540 (2004), including on preventing the financing of proliferation-related activities, and taking into consideration the guidance of the framework of the Financial Action Task Force (FATF),

Noting that not all States have presented to the 1540 Committee their national reports on implementation of resolution 1540 (2004),
Further noting that the full implementation of resolution 1540 (2004) by all States, including the adoption of national laws and measures to ensure implementation of these laws, is a long-term task that will require continuous efforts at national, regional and international levels,
Recognizing, in that regard, the importance of dialogue between the 1540 Committee and Member States and stressing that direct contact is an effective means of such dialogue,
Recognizing that many States continue to require assistance in implementing resolution 1540 (2004), emphasizing the importance of providing States, in response to their requests, with effective assistance that meets their needs, and welcoming the coordinating and facilitating role of the 1540 Committee in this regard,
Stressing, in that regard, the need of enhanced assistance and collaboration among States, between the 1540 Committee and States, and between the 1540 Committee and relevant international, regional and subregional organizations in assisting States to implement resolution 1540 (2004),
Recognizing the importance of progress towards achieving the goals and objectives of the 2010 Nuclear Security Summit as a contribution to the effective implementation of Security Council resolution 1540 (2004),
Calling on States to work together urgently to prevent and suppress acts of nuclear terrorism including through increased cooperation and full implementation of the relevant international conventions, and through appropriate measures to reinforce the existing legal framework with a view to ensure that those committing offences of nuclear terrorism are effectively held accountable,
Endorsing the 2009 comprehensive review of the status of implementation of resolution 1540 and taking note of the findings and recommendations contained in its final document,

Acting under Chapter VII of the Charter of the United Nations:

1. Reiterates its decisions in and the requirements of resolution 1540 (2004), and re-emphasizes the importance for all States to implement fully that resolution;
2. Decides to extend the mandate of the 1540 Committee for a period of 10 years until 25 April 2021;

3. Decides that the 1540 Committee will conduct a comprehensive review on the status of implementation of resolution 1540 (2004), both after five years and prior to the renewal of its mandate, including, if necessary, recommendations on adjustments to the mandate, and will submit to the Security Council a report on the conclusions of those reviews, and decides that, accordingly, the first review should be held before December 2016;
4. Again decides that the 1540 Committee should submit an annual Programme of Work to the Security Council before the end of each May, and decides that next Programme of Work will be prepared before 31 May 2011;
5. Decides to continue to provide the 1540 Committee with the assistance of experts, and to this end:
 - (a) Requests the Secretary-General to establish, in consultation with the 1540 Committee, a group of up to eight experts (“group of experts”), acting under the direction and purview of the Committee, composed of individuals with the appropriate experience and knowledge to provide the Committee with expertise, to assist the Committee in carrying out its mandate under resolutions 1540 (2004), 1673 (2006), 1810 (2008) and this resolution, including through facilitation of assistance to improve implementation of resolution 1540 (2004);
 - (b) Requests, in that regard, the 1540 Committee to consider recommendations for the Committee and the group of experts on expertise requirements, broad geographic representation, working methods, modalities, and structure, including consideration of the feasibility of a coordination and leadership position of the group of experts, and to present these recommendations to the Security Council no later than 31 August 2011;

Implementation

6. Again calls upon all States that have not yet presented a first report on steps they have taken or intend to take to implement resolution 1540 (2004) to submit such a report to the Committee without delay;
7. Again encourages all States that have submitted such reports to provide, when appropriate or upon the request of the 1540

- Committee, additional information on their implementation of resolution 1540 (2004), including, voluntarily, on States' effective practices;
8. Encourages all States to prepare on a voluntary basis national implementation action plans, with the assistance of the 1540 Committee as appropriate, mapping out their priorities and plans for implementing the key provisions of resolution 1540 (2004), and to submit those plans to the 1540 Committee;
 9. Decides that the 1540 Committee shall continue to intensify its efforts to promote the full implementation by all States of resolution 1540 (2004), through its Programme of Work, which includes the compilation and general examination of information on the status of States' implementation of resolution 1540 (2004) as well as States' efforts at outreach, dialogue, assistance and cooperation; and which addresses in particular all aspects of paragraphs 1, 2 and 3 of that resolution, which encompasses (a) accountability, (b) physical protection, (c) border controls and law enforcement efforts and (d) national export and trans-shipment controls including controls on providing funds and services such as financing to such exports and trans-shipments; and includes, as necessary, specific priorities for its work, taking into account its annual review on the implementation of resolution 1540 (2004), prepared with the assistance of the group of experts before the end of each December;
 10. Urges the 1540 Committee to continue to engage actively with States and relevant international, regional and subregional organizations to promote the sharing of experience, lessons learned and effective practices, in the areas covered by resolution 1540 (2004), drawing in particular on information provided by States as well as examples of successful assistance, and to liaise on the availability of programmes which might facilitate the implementation of resolution 1540 (2004), while bearing in mind that customized assistance is useful for the effective implementation of resolution 1540 (2004) at national levels;
 11. Encourages, in that regard, the 1540 Committee, with the support of necessary relevant expertise, to actively engage in dialogue with States on the implementation of resolution 1540 (2004), including through visits to States at their invitation;
 12. Requests the 1540 Committee, with the support of the group of experts, to identify effective practices, templates and guidance,

with a view to develop a compilation, as well as to consider preparing a technical reference guide about resolution 1540 (2004), to be used by States on a voluntary basis in implementing resolution 1540 (2004), and in that regard, encourages the 1540 Committee, at its discretion, to draw also on relevant expertise, including, civil society and the private sector, with, as appropriate, their State's consent;

Assistance

13. Encourages States that have requests for assistance to convey them to the 1540 Committee, and encourages them to make use of the Committee's assistance template to that effect;
14. Urges States and relevant international, regional and subregional organizations to inform the Committee as appropriate of areas in which they are able to provide assistance; and calls upon States and such organizations, if they have not done so previously, to provide the 1540 Committee with a point of contact for assistance by 31 August 2011;
15. Urges the 1540 Committee to continue strengthening the Committee's role in facilitating technical assistance for implementation of resolution 1540 (2004), in particular by engaging actively, with the support of the group of experts, in matching offers and requests for assistance, through such means as visits to States, at the invitation of the State concerned, assistance templates, action plans or other information submitted to the 1540 Committee;
16. Supports the continued efforts of the 1540 Committee to secure a coordinated and transparent assistance process that provides timely and ready availability of information for States seeking assistance and for States prepared to provide assistance;
17. Encourages meetings on assistance issues with the participation of the 1540 Committee, between States prepared to offer assistance, States requesting assistance, other interested States, and relevant international, regional and subregional organizations;

Cooperation with International, Regional, and Subregional Organizations

18. Calls upon relevant international, regional and subregional organizations to designate and provide the 1540 Committee by 31 August 2011 with a point of contact or coordinator for the implementation

of resolution 1540 (2004); and encourages them to enhance cooperation and information sharing with the 1540 Committee on technical assistance and all other issues of relevance for the implementation of resolution 1540 (2004);

19. Reiterates the need to continue to enhance ongoing cooperation among the 1540 Committee, the Security Council Committee established pursuant to resolution 1267 (1999), concerning Al-Qaida and the Taliban, and the Security Council Committee established pursuant to resolution 1373 (2001), concerning counter-terrorism, including through, as appropriate, enhanced information sharing, coordination on visits to States, within their respective mandates, technical assistance and other issues of relevance to all three committees; and expressing its intention to provide guidance to the committees on areas of common interest in order to better coordinate their efforts;

Transparency and Outreach

20. Requests the 1540 Committee to continue to institute transparency measures and activities, inter alia by making fullest possible use of the Committee's website, and urges the Committee to conduct, with the participation of the group of experts, regular meetings open to all Member States on the Committee's and group's activities related to the aforementioned objectives;
21. Requests the 1540 Committee to continue to organize and participate in outreach events on the implementation of resolution 1540 (2004) at the international, regional, subregional, and, as appropriate, national level, and promote the refinement of these outreach efforts to focus on specific thematic and regional issues related to implementation;

Administration and Resources

22. Recognizes that implementation of the mandate of the 1540 Committee requires sustained support and adequate resources; and to that end:
 - (a) Endorses the existing administrative and logistics support to the 1540 Committee from the Office for Disarmament Affairs, and decides that the Committee should report to the Council

- by January 2012 on the possibility of strengthening this support, including through strengthening of ODA's regional capacity to support the implementation of the resolution at regional, subregional and national levels;
- (b) Calls upon the Secretariat to provide and maintain sufficient expertise to support activities of the 1540 Committee as outlined in the present resolution;
 - (c) Encourages States that are able to do so to provide resources to the Office of Disarmament Affairs to assist States in implementing their 1540 obligations, and to make available "in kind" contributions or cost-free training and expertise to the 1540 Committee to help the group of experts meet requests for assistance in a timely and effective manner;
 - (d) Invites the 1540 Committee to consider developing, in close cooperation with relevant international, regional and subregional organizations and other United Nations bodies, ways to utilize and maintain expertise, including, in particular, of former experts of the group, that could be made available for specific missions and assistance needs regarding the implementation of resolution 1540 (2004);
 - (e) Urges the 1540 Committee to continue to encourage and take full advantage of voluntary financial contributions to assist States in identifying and addressing their needs for the implementation of resolution 1540 (2004), and requests the 1540 Committee at its discretion, to promote the efficient and effective use of the existing funding mechanisms within the United Nations system;

23. Decides to remain seized of the matter.

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