REPORT

IMPLEMENTING UN SECURITY COUNCIL RESOLUTION 1540
A Risk-Based Approach

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United Nations Security Council Resolution 1540 (UNSCR 1540) was adopted in 2004 to address the risk that non-state actors will acquire weapons of mass destruction (WMD). It requires all states to implement a wide range of domestic legislation to prevent such proliferation. This comprehensiveness makes 1540 an important tool, but a piecemeal approach to implementation may lead to its underutilization. This study provides a risk-based framework, focusing on the implementation of the resolution in a set of states which are the most relevant for WMD proliferation and highlighting a set of 1540 obligations which are the most important for each state to fulfill. An evaluation of implementation progress so far reveals that the vast majority of these states have few of their key obligations in place. While the universal implementation of 1540 is an important goal, ensuring that these key provisions are carried out should be a priority.

KEYWORDS: Weapons of mass destruction; United Nations Security Council; Non-state actors; Nonproliferation

Events in the last five years have demonstrated that one of the most significant threats to international peace and security is the acquisition of weapons of mass destruction (WMD) by non-state actors.[1] The attacks on September 11, 2001, and subsequent terrorist violence in the succeeding years indicate that international terrorist networks are intent on causing death, destruction, and disorder on a magnitude not previously considered. Proclamations regarding the intent to acquire WMD by groups such as Al Qaeda have reinforced the severity of this threat.[2] In addition, revelations regarding the spread of WMD through clandestine networks, such as that of Abdul Qadeer Khan, highlight the multiple roles played by non-state actors in WMD proliferation: They may be the recipients as well as the suppliers of such weapons and technologies. The traditional international WMD nonproliferation regime was not formed to address these types of proliferation considerations, and it is struggling to adapt to this new international security environment.

In response, the United Nations Security Council adopted resolution 1540 (UNSCR 1540), a comprehensive resolution requiring all states to establish controls over WMD and the means to create and deliver them.[3] If fully implemented, the resolution will have considerable potential to mitigate the threat that non-state actors will acquire such weapons. However, the ambitious nature of the resolution poses severe challenges for its

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widespread adherence, as no state has fulfilled all of 1540's obligations, and the vast majority has only a few of the resolution's domestic legal requirements in place. A piecemeal approach to the fulfillment of 1540's varied provisions runs the risk of its becoming a ''paper tiger,'' in which states make minimal efforts in order to give the appearance of compliance while achieving little actual improvement in global control over the world's most dangerous arms. Moreover, the Security Council is hampered by institutional and political limitations, from highlighting the most critical gaps in the resolution's implementation and applying pressure on states to fill them.

Preventing this lowest-common-denominator adherence to 1540 will require states that support it to establish a coherent strategy to provide focus and maintain momentum for the unwieldy resolution and to ensure that its provisions are targeted to achieve the maximal possible gains for nonproliferation. This report examines the potential role of prioritization in the implementation of UNSCR 1540 as an element of such a strategy. It identifies 84 states as particularly relevant for the implementation of the resolution and highlights the provisions that are most important for these states to fulfill. Based on the assessment of state reports conducted by the Committee Pursuant to Security Council Resolution 1540 (the 1540 Committee), this report evaluates the fulfillment of these key provisions for each of the 84 states. It demonstrates that, even for the states where the need for 1540's prohibitions and controls are the greatest, on average, these countries have established less than one-third of the legislative and enforcement mechanisms necessary to prevent WMD proliferation to non-state actors. Given the tremendous effort still required to put these measures in place, it is vital that any strategy to advance the implementation of the resolution ensure that, at a minimum, 1540's varied controls are established by the states representing the greatest risk for the proliferation of WMD to non-state actors.

The Intent of Resolution 1540

Security Council Resolution 1540 was adopted in April 2004 after months of negotiations regarding the possible ways in which the council could respond to a threat that the traditional WMD treaty regimes have been unable to address adequately.[4] Sponsored by the United States, 1540 was a nonproliferation initiative outlined by President George W. Bush in his speech to the United Nations General Assembly in September 2003. In this speech, Bush proposed a Security Council resolution that would ''call on all members of the UN to criminalize the proliferation of 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.''[5] Along these lines, the resolution establishes an obligation on all states to implement and enforce national legislation that prevents WMD, related materials, and their means of delivery from falling into the hands of non-state actors.[6]

In this respect, the resolution fills existing gaps in the global nonproliferation regime. First, while the nonproliferation regime is traditionally focused on state proliferation, 1540 is geared toward preventing weapons proliferation to non-state actors such as terrorists and illicit networks. While national implementation efforts under the

Biological Weapons Convention (BWC) and Chemical Weapons Convention (CWC) are intended to accomplish a similar goal, 1540's sole intention is to create binding obligations regarding all three weapon types and avoid the negotiation processes and voluntary commitments under these treaties.

Second, it is applicable to all states regardless of their membership in multilateral agreements, so that states cannot simply remain unaccountable for such proliferation because they have opted out of an agreement. Furthermore, it brings together the entire range of multilateral WMD obligations and controls, including prohibitions for proliferation, material protection and physical security, and border and export controls, all in one package. Existing treaties establish certain types of measures for particular weapons. For example, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) prohibits the proliferation of nuclear weapons and requires the adoption of safeguards over nuclear material and facilities. However, export controls are handled through non-treaty regimes such as the Nuclear Suppliers Group (NSG), and limitations regarding their means of delivery are imposed through a similar non-binding arrangement such as the Missile Technology Control Regime (MTCR). Under 1540, all of these mechanisms are consolidated. Finally, as a resolution adopted entirely under Chapter VII of the Charter of the United Nations, it is not only legally binding, but also potentially enforceable through the punitive measures available to the council.[7]

In theory, 1540 establishes a universal system of prohibitions, accounting and security measures, and border and export controls over WMD to detect and deter their acquisition by non-state actors.[8] This universality is one of the strengths of the resolution, as it addresses the concern that non-state actors seeking WMD will focus their efforts where controls over such materials are the weakest or nonexistent. It is therefore important that all states enact and enforce ''appropriate and effective'' laws to prevent the spread of WMD to non-state actors and that universal, full implementation of 1540 remains the ultimate goal of the resolution.

The Challenges to Universal 1540 Implementation

The very comprehensiveness that accords 1540 its potential also creates critical technical, legal, and political challenges for its universal implementation. The ideal of universality, while important, will be exceedingly difficult to achieve without coordinated efforts to overcome such challenges. Whereas placing the responsibility on states to ensure that WMD do not fall into the hands of non-state actors is the most appropriate way to address this threat, such an approach still ultimately depends on states' capacity to take on such a responsibility—and the way in which states assume responsibility is predicated on several factors. In particular, the lack of state capacity to implement 1540, the ambiguity regarding compliance with the resolution, and political opposition to the approach of the Security Council are factors that could seriously detract from such responsibility, and by extension, the efficacy of the resolution.

One of the key challenges poised to prevent the universal implementation of 1540 is the ability of many states to fulfill its central provisions, which require enacting domestic legislation and enforcement measures. Even if a state supports the aim of preventing

WMD proliferation to non-state actors, it must still be able to muster a certain degree of technical and legal expertise, as well as financial and human resources, to establish the specific mechanisms outlined in the resolution. Moreover, the issue of capacity to meet the obligations is not just a matter of overall state capabilities, but priorities as well. States dealing with internal unrest, epidemic disease, famine, or external conflict are far more likely to devote political attention and resources to existing problems than to potential threats that may not necessarily be directed toward them. This lack of a requisite capacity to carry out these measures, as well as the existence of higher state priorities competing for similar resources, runs the risk that states will eschew more demanding obligations that require certain legal and technical capabilities—such as end-user certification and accounting mechanisms for sensitive materials—and enact only the most basic measures—such as a general prohibition on WMD development.

Such a scenario is already evident in many of the reports that states have submitted in which they assert their membership in WMD treaty regimes as proof of adherence to the resolution without providing any indication of domestic legal measures taken to address non-state actors. Unless states make concerted efforts to build capacity, adherence to 1540 will be severely limited, and the existing gaps will remain open to exploitation by the non-state actors targeted by the resolution.

Resolution 1540 enumerates a large number of specific obligations. The key legal challenge to implementation of the resolution is its lack of clarity about what it means for a state to be in compliance or noncompliance with these obligations. Is a state considered in compliance only once all of them have been carried out, or is it sufficient for a state to implement a certain percentage of those obligations? The higher the bar for compliance, the greater the chance that many states will not come into compliance, thereby decreasing the chance that the Security Council will be able to enforce the resolution in all cases. On the other hand, the lower the bar for compliance, the less effective the universal system of controls on WMD becomes. The very lowest level of compliance may be considered the submission of a report on efforts to implement the resolution, the first of which was due by October 28, 2004. Two years after 1540 was adopted, and 18 months after this deadline, 62 states have yet to fulfill the resolution's most basic obligation. While many of these states may need assistance just to determine what information is needed in their report, it will not be possible for the council to consider notions of noncompliance with the national implementation measures of 1540 if a large number of states have yet to provide information on what mechanisms they have in place.

Furthermore, 1540 also requires that domestic legislation and enforcement measures are "appropriate" and "effective."[9] This qualification is necessary, as having a law in place does not mean that it is serving its intended purpose. However, what is considered to be an appropriate and effective legal mechanism varies between states, thereby complicating any such assessment and leaving room for political considerations to come into play as states assert that they are in compliance—defending their assertions with the notion that their domestic legal mechanisms are a matter of national prerogative.

While 1540 is a Chapter VII resolution, the enforcement capabilities at the council's disposal have little meaning if there are no consistent criteria for judging compliance, or if so many states have failed to comply that a substantial percentage of the UN membership

would face punitive action. In the absence of enforcement measures, few international disincentives exist for failing or refusing to implement the resolution. Furthermore, states of serious concern under the intent of 1540, such as the Democratic People's Republic of Korea (DPRK), may not take a single step in carrying out its erstwhile obligations under the assumption that the council cannot single it out for censure under the resolution. Lastly, since the provisions of 1540 are equally binding on all states, it would not be politically feasible to consider certain states differently from others.

Likewise, since the resolution does not specify that any provisions are more important than others, the 1540 Committee is unlikely to find agreement on a hierarchy of priorities, either overall, or for a given state. Such equal consideration of states and provisions is necessary to give the message that all states are expected to fulfill all obligations of the resolution. However, these constraints pose the risk of limiting the evaluation of 1540's implementation to tallying the number of measures that states have fulfilled without considering the question of how important each fulfillment is for the intent of the resolution—thereby allowing states to take a lowest-common-denominator approach to carrying out their obligations.

Even as a Security Council resolution, 1540 is not immune to the challenge of a lack of political will, a hindrance that many attribute to the current problematic state of nonproliferation norms in general. The threat of WMD terrorism and illicit trafficking is not a priority for many states, and there is some political opposition to the role of the Security Council in responding to this threat. Members of the Non-Aligned Movement (NAM) have expressed their concern about both the notion that the Security Council has now dictated domestic law for UN members, as well as the adoption of international obligations to nonproliferation outside the traditional negotiation process. Pakistan has been one of the resolution's more vocal critics in spite of voting in favor of its adoption. It not only expressed concerns during the negotiation process, but it has continued to express reservations since its adoption, including its belief that, ''the Security Council is not an appropriate body to deal with the issue of non-proliferation.''[10] While states cannot simply ignore a Chapter VII Security Council Resolution because they do not agree with it—and there is not likely to be outright resistance to its implementation—they may be less inclined to commit themselves to the efforts needed to adopt all of the necessary domestic legislation and create and/or train all of the enforcement bodies called for by 1540.

These challenges do not preclude the prospect of strengthened international controls over the spread of WMD to non-state actors; however, they do serve as limiting factors to the universal establishment of all of these controls. The adoption of strict standards for licensing exports of biological materials by 191 states, for example, is a noble goal, but one not likely to be realized. Therefore, a strategy to maximize the effectiveness of 1540 in achieving its intent must do two things: It must find ways to counter these challenges in order to remove the limitations to universality, and, most importantly, it must focus on mitigating the most significant risks of WMD proliferation to ensure that any implementation short of universality still manages to close the most likely proliferation pathways.

In regard to the task of countering these challenges, the resolution provides tools that should be used effectively for this purpose. Recognizing the need for capacity building, 1540 "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."[11] The supply of help will be a most critical element in advancing implementation of the resolution, as it will not only allow many states to carry out measures they were previously unable to execute, but it also maintains momentum in 1540's implementation. However, this assistance will have to go beyond passively responding to state requests and entail active engagement with states to conduct needs assessments and formulate long-term implementation strategies.

In order to assess adherence to the domestic legal requirements of the resolution, a committee of the Security Council has been created to review national reports submitted by states on their efforts to implement 1540. Comprising the 15 members of the UNSC and supported by a group of governmental experts, the 1540 Committee was established with a two-year mandate, which expired on April 28, 2006. While the committee was not tasked with determining compliance with 1540, it has been responsible for evaluating state reports to identify which measures each reporting state has fulfilled and indicate to states the obligations left to be carried out. In April 2006, the committee issued a comprehensive report detailing its work over the past two years and assessing the global fulfillment of each of 1540's obligations. The report also made recommendations for the continued implementation of the resolution, including extension of the committee's mandate and its continued engagement with states to promote and monitor 1540's implementation. Because of the importance of continuing to both review state reports and engage states regarding the implementation of 1540, the resolution was reaffirmed with the unanimous adoption of Security Council Resolution 1673 on April 27, 2006. This renewed the mandate for the committee for another two years and called for intensified efforts by the committee to promote the full implementation of 1540 by all states.[12]

To address concerns regarding the Security Council's new role in WMD nonproliferation, the resolution contains two provisions to indicate that 1540 is intended to complement and reinforce, rather than replace or subvert, the negotiated treaties. Operative paragraph 5 (OP 5) indicates that the obligations of the resolution shall not be interpreted as conflicting or altering the rights and obligations under the treaty regimes. More importantly, operative paragraph 8, subparagraphs (a), (b), and (c) call for the promotion of these treaties, the adoption of their national implementation requirements, and cooperation with the nonproliferation treaty organizations. Such stipulations place 1540 within the framework of the existing nonproliferation regime and provide additional impetus for states to carry out the obligations they have already agreed to, in addition to extending such security measures to address non-state actors.

Beyond the text of the resolution, efforts have also been made to promote the aims and importance of adherence to 1540 through regional seminars. These events, which have been held in Latin America and the Caribbean, and are planned for Asia and Africa, mitigate the top-down approach of the Security Council by allowing a degree of regional

ownership over the process of 1540 implementation as these states discuss the resolution's regional implications and collaborate on carrying out its obligations.

While these mechanisms can alleviate some of the difficulties facing universal implementation of 1540, universal adherence to every provision of the resolution will remain an elusive goal. Efforts must be made to provide the focus needed to achieve the most substantial possible contribution to the nonproliferation regime. Such a task will entail prioritizing implementation efforts to address the most likely paths to proliferation.

The Role of Prioritization

While the resolution is in fact universally binding, not all countries are equal in terms of their relevance to WMD nonproliferation, and not all of the provisions of the resolution are equally important for every country to fulfill. For example, the requirement to establish accounting mechanisms for the storage of nuclear material is of little consequence for a state such as Guatemala, which does not have any nuclear facilities, but is a crucial step for a state such as Japan, which maintains considerable nuclear energy and research capabilities. By extension, a failure by Japan to establish domestic measures regarding nuclear weapons, materials, and means of delivery would be a major deficiency in the resolution's intended universal network of controls over WMD. However, Guatemala's failure to do so, while still a gap in this network, would not constitute a serious nuclear proliferation risk.

Given the wide discrepancies between the appropriateness and function of 1540's provisions and state capabilities, it is theoretically possible that limited fulfillment of obligations by a few states may actually be more beneficial in strengthening the nonproliferation regime than many states fulfilling a large number of measures. It depends on who is doing the implementation, and what they are implementing. Based on the intent of the resolution to close the gaps in the nonproliferation regime with respect to non-state actors and non-parties to the treaties addressing WMD, there are at least 84 key states that are particularly relevant for some or all of the domestic legal obligations of 1540.[13] The selection of these 84 states is based both on a risk-based approach, which seeks to identify the most likely proliferation paths of WMD, as well as on a recognition of state accountability in which states that maintain WMD-relevant capabilities have the responsibility to ensure that such capabilities are not misused. Therefore, fulfillment of the resolution's provisions most applicable to the capabilities of these 84 states will be benchmarks in an overall strategy for 1540 implementation.

Key States and Provisions

Any evaluation of 1540's implementation to prevent the spread of WMD to non-state actors will have to recognize that some states are more WMD-relevant than others and that the provisions of the resolution carry varying degrees of importance depending on the state in question. For this framework to have any meaning, the criteria by which states are defined as "key" must be determined, and the states must thereby be identified. Two sets of criteria are applicable for determining key states. One set concerns states from

which WMD or related materials may proliferate, which will be referred to as *primary origin states*. These are states that contain nuclear, biological, and chemical weapons or significant amounts of WMD-related materials that could be used for the acquisition or development of WMD. The identification of primary origin states are thereby determined by three characteristics: (1) the possession of WMD or WMD programs, including defensive programs; (2) former possession of WMD or programs; and (3) nuclear, biological, or chemical facilities that pose a significant proliferation risk.

Criteria for Primary Origin States

Countries classified as primary origin states have declared, or been suspected of maintaining, a stockpile of or program for the development of nuclear, biological, and/or chemical weapons (BW and/or CW). States that have declared WMD capabilities include those recognized in relevant treaties, as well as states outside those treaties, that have publicly confirmed such capabilities. This category also comprises states that have declared clandestine WMD capabilities and are in the process of dismantling their weapons and programs. States that have been suspected of maintaining WMD capabilities are those that have been officially accused of such activities by the intelligence and diplomatic services of various countries according to open source literature. States that formerly possessed WMD or WMD programs are those that have both declared and dismantled or are in the process of disposing of such weapons. States that maintain facilities of significant proliferation risk for WMD must be considered separately for each weapon type, as detailed below.

- *Nuclear facilities.* Any facility involved in the extraction, treatment, conversion, production, consumption, reprocessing, storage, or any other use of nuclear material is considered a significant proliferation risk for the acquisition of nuclear weapons.[14] Because of the size and sensitivity of such facilities, as well as the pervasive application of safeguards by the International Atomic Energy Agency (IAEA), there is more information available on the location of nuclear facilities than those for the other types of WMD.
- *Biological facilities.* Because of the high degree of dual-use activities and materials in the biological field, the number of facilities globally that could be a potential risk for the proliferation of dangerous biological agents ranges in the tens of thousands. At the same time, it has been recognized that some facilities that engage in particular activities and work with particular types of agents are more a proliferation risk than others. The biosafety level (BSL) classification is an important indicator of proliferation risk, with the highest rating, biosafety level 4 (BSL-4), corresponding to facilities engaged in ''work with dangerous and exotic agents that pose a high individual risk of aerosol-transmitted laboratory infections and life-threatening disease.''[15] In addition, facilities engaged in human vaccine production for agents of particular concern (smallpox, plague, and anthrax) also pose a serious proliferation risk and must be a focus of efforts to ensure that work on such agents is not misused by non-state actors.[16] In contrast to the readily available information on

nuclear facilities, there is little information on the locations of both BSL-4 and vaccine production facilities. The primary source of such information is from the confidence-building measures (CBMs) submitted by states parties to the BWC. In spite of the obligation to submit such reports annually, participation in the CBMs has been poor, with roughly one-third of BWC states parties submitting such information.[17] Because transparency regarding such activities is relevant to 1540 obligations, in particular the determination of state needs, it will be necessary to increase efforts to determine where such facilities are located.

- *Chemical facilities.* The degree of dual-use activities and materials in chemical programs is also significant. However, the CWC contains a list of specific types of chemicals and their degree of relevance for chemical weapons proliferation. Although the CWC list does not encompass every chemical that could be used for malign purposes, it does identify a commonly agreed set of some of the most dangerous agents and the materials to create them. In addition, the Organization for the Prohibition of Chemical Weapons (OPCW) ensures transparency regarding activities of relevance for the proliferation of chemical weapons. The OPCW maintains and publishes lists of states with facilities that work with the various types of chemicals identified by the convention schedules. Of particular relevance are facilities that work with schedule 1 chemicals, which are considered ''those that have been or can be easily used as chemical weapons and which have very limited, if any, uses for peaceful purposes.''[18] Although the OPCW maintains a list of such facilities, their locations are confidential because of the proliferation risk they pose and the prerogative of states. At the same time, stringent rules dictate the activities of such facilities, which have only been declared by 21 states parties, and all of these states are known to also maintain chemical facilities that are on public record.[19] These other facilities work with schedule 2 and 3 chemicals, which also pose significant dangers for chemical weapons proliferation.[20] As in the case of biological weapons, however, information on the locations of these facilities is dependent on both state membership in the relevant treaty and declarations under the agreement, and additional efforts will be needed to determine where other such facilities are located to ensure that they are also subject to the provisions of 1540.

Identifying Primary Origin States

Based on publicly available information, 78 states can be classified as primary origin states. Nearly three-quarters of these (57) are primary origin states for more than one type of WMD, and about one-third (28) are primary origin states for all three types.

The majority of identified primary origin states are engaged in nuclear activity (72). This high representation of nuclear-relevant states is largely due to the fact that more information is available on nuclear weapons and facilities than on other weapon types. Nuclear weapons are also the most dangerous of the three weapon types, and therefore the most stringent standards are applied to most nuclear activities. States identified under the nuclear-related national implementation obligations of 1540 include the five nuclear weapon states (China, France, Russia, the United Kingdom, and the United States), as well

as states that have declared nuclear weapon capabilities (India, Pakistan, and North Korea). In addition, Israel is known to maintain an undeclared nuclear arsenal, and Iran is widely suspected of maintaining a program for the development of nuclear weapons.[21]

In 2004, Libya renounced its pursuit of nuclear and chemical weapons, and efforts are currently under way to dismantle these programs.[22] Thirteen states have had nuclear weapons programs at some point in the past (Argentina, Australia, Brazil, Egypt, Iraq, Poland, Romania, South Africa, South Korea, Sweden, Switzerland, Taiwan, and Yugoslavia), and three states "inherited" nuclear weapons during the collapse of the Soviet Union (Belarus, Kazakhstan, and Ukraine).[23] While all of the states already mentioned also possess nuclear facilities that may be at risk for proliferation, an additional 50 states are identified solely for maintaining such facilities, which include, but are not limited to, power, research, and enrichment and reprocessing facilities.[24]

In terms of biological capabilities, 34 states have been identified as being particularly important for the relevant provisions of 1540. While there are no declared ongoing offensive programs, 23 states either maintain or previously engaged in an offensive and/or defensive biological weapons program.[25] Cuba, Egypt, Iran, Israel, North Korea, and Syria are also suspected of maintaining biological weapons programs or research.[26] In addition, five states have also declared either BSL-4 or relevant vaccine production facilities in their BWC CBMs (Austria, the Czech Republic, Mongolia, Slovakia, and Ukraine).[27]

Fifty-four states are particularly relevant for the provisions of 1540 in regard to chemical weapons. India, Libya, Russia, and the United States all have declared chemical weapons stockpiles, which are being destroyed by the OPCW.[28] Albania, China, France, Germany, Iraq, Japan, and the United Kingdom have formerly maintained chemical weapons programs and/or stockpiles.[29] In addition, Algeria, Egypt, Iran, Israel, Kazakhstan, Myanmar, North Korea, Pakistan, Saudi Arabia, Serbia and Montenegro, South Africa, South Korea, Sudan, Syria, Taiwan, and Vietnam are all believed to maintain, or to have formerly maintained, chemical weapons programs and/or stockpiles.[30] Lastly, 27 additional states maintain schedule 2 and/or 3 facilities, and are therefore also considered important for potential chemical weapons proliferation.[31]

Transit States

A second set of states poses a particular proliferation risk because of the potential that WMD and related materials could be transferred through them, particularly if the measures to prevent the acquisition of relevant materials fail in primary origin states. As previously noted, certain provisions of the resolution aim to prevent the transfer of such materials and are therefore the most relevant for states—hereby referred to as *transit states*—through which large volumes of materials are transferred. While non-state actors could use a variety of means and transit points to transfer WMD, and need not necessarily make use of the transit pathways used by much of the rest of the world, the points used to transport the overwhelming majority of the world's goods remain the most at risk for use in trafficking the greatest amount of WMD. Therefore, the states of most concern for the transit of WMD are those with the greatest amount of port traffic.

One of the primary ways of measuring port traffic is the amount of container equivalent units (TEUs) being transported through a given port or state each year. As the rate of 1 million TEUs per year is a general threshold value for ports with significant container traffic, all states with a throughput of at least one million TEUs are considered key states for the obligations of the resolution that pertain to the transfer of WMD.[32] While this category contains a large number of primary origin states (30), the Bahamas, Malta, Oman, Panama, Sri Lanka, and the United Arab Emirates (UAE) are included solely as potential transit states. Having the world's 50 busiest ports, these 36 states together account for more than 80 percent of global container traffic.[33]

Identifying Provisions of Particular Importance

With the list of key states determined (See Table 1), the next step is to discern which national implementation provisions of 1540 are the most important for these states to fulfill. Not only does no universal set of priorities exist, but the most relevant needs of each state depend on the classification of the state in question. The resolution comprises 12 operative paragraphs, two of which outline the key requirements for domestic efforts to prevent the acquisition of WMD by non-state actors. Whereas these national implementation obligations consist of specific measures, they can be categorized broadly as three different types of provisions: criminalization, accounting and security, and border and export control.[34] Because the legislative and enforcement requirements for these provisions differ among nuclear, biological, and chemical weapons, the 1540 Committee considers the fulfillment of these obligations separately for each weapon type.

The criminalization provisions are contained in operative paragraph 2 (OP2), which requires that all states ''adopt and enforce appropriate effective laws'' prohibiting non-state actors from manufacturing, acquiring, possessing, developing, transporting, transferring, or using WMD. This provision is one of the key benefits of the resolution, as it extends the state WMD prohibitions contained in the treaty regimes to non-state actors in all states. It also goes further than this basic prohibition by requiring that such laws also prohibit ''attempts to engage in any of the forgoing activities, participate in them as an accomplice, assist or finance them.''

Such language casts a wide net over any action related to the acquisition of WMD by non-state actors. While the proscribed activities identified in this paragraph may occur in any state, these prohibitions are the most relevant for the states in which non-state actors are the most likely to acquire, develop, manufacture, or transport such weapons or weapons materials—namely, the states that could serve as a primary source. Therefore, 1540's criminalization provisions are particularly important for primary origin states to fulfill with respect to the weapon type(s) of concern for that state.

The accounting and security provisions are outlined in the third operative paragraph (OP3), subparagraphs (a) and (b). These obligations require the establishment of regulations for WMD-relevant industries and facilities in order to prevent the loss, theft, or any other unauthorized removal of such weapons, or materials and components used to create or deliver them. As these provisions are essentially controls over the sources of

TABLE 1
List of Key States and Classifications

State	Nuclear	Biological	Chemical	Transit
Albania			x	
Algeria	x		x	
Argentina	x		x	
Armenia	x			
Australia	x	x	x	x
Austria	x	x		
Bahamas				x
Bangladesh	x			
Belarus	x	x		
Belgium	x	x		x
Brazil	x		x	x
Bulgaria	x	x	x	
Canada	x	x	x	x
Chile	x		x	x
China	x	x	x	x
Colombia	x			
Croatia	x			
Cuba	x	x		
Czech Republic	x	x	x	
Denmark	x		x	
DR Congo	x			
Egypt	x	x	x	x
Estonia	x			
Finland	x	x	x	
France	x	x	x	x
Georgia	x		x	
Germany	x	x	x	x
Ghana	x			
Greece	x			x
Hungary	x		x	
India	x	x	x	x
Indonesia	x			x
Iran	x	x	x	x
Iraq	x	x	x	
Ireland	x		x	
Israel	x	x	x	
Italy	x	x	x	x
Jamaica	x			x
Japan	x	x	x	x
Kazakhstan	x		x	
Latvia	x			
Libya	x		x	
Lithuania	x			
Malaysia	x			x
Malta				x
Mexico	x		x	x
Mongolia		x		
Myanmar			x	
Netherlands	x	x	x	x
Nigeria	x		x	

TABLE 1 *(Continued)*

State	Nuclear	Biological	Chemical	Transit
North Korea (DPRK)	x	x	x	
Norway	x	x	x	
Oman				x
Pakistan	x		x	
Panama				x
Peru	x			
Philippines	x			x
Poland	x	x	x	
Portugal	x			
Romania	x		x	
Russia	x	x	x	
Saudi Arabia			x	x
Serbia and Montenegro	x		x	
Singapore			x	x
Slovakia	x	x	x	
Slovenia	x			
South Africa	x	x	x	
South Korea (ROK)	x		x	x
Spain	x	x	x	x
Sri Lanka				x
Sudan			x	
Sweden	x	x	x	
Switzerland	x	x	x	
Syria	x	x	x	
Taiwan[1]	x		x	x
Thailand	x		x	x
Turkey	x		x	
Ukraine	x	x		
United Arab Emirates				x
United Kingdom	x	x	x	x
United States	x	x	x	x
Uzbekistan	x		x	
Venezuela	x			x
Vietnam	x		x	x

[1]In spite of Taiwan's uncertain political status, it is considered as its own entity for the purposes of this study due to capabilities of relevance for 1540.

WMD, it is critical that primary origin states implement such controls over their relevant weapon type(s).

The provisions for border and export controls are enumerated in OP3, subparagraphs (c) and (d), which address the potential transport of weapons and related materials outside a given state. They require not only the establishment of border and export controls, but also measures to prevent the illicit trafficking, brokering, and transshipment of WMD. Because of the large amount of materials needed for a threatening biological or chemical weapons capability and the difficulty in handling nuclear or radioactive material, the shipment of these materials poses a particular proliferation concern. An estimated 90 percent of world trade is conducted through overseas container shipping, and such means

have also been used to transport WMD materials, as terrorists and smugglers also find value in using reliable transport mechanisms for their illicit activities.[35]

In regard to these border and export control provisions, it is particularly important for transit states to fulfill all obligations under these provisions for all three types of WMD, as many of these states serve as re-export and transshipment points through which relevant materials may traverse. It is also crucial for primary origin states to carry out these requirements for the type(s) of weapons of relevance to them.

The accounting and security and border and export control provisions outlined in OP3 will require the most effort from states to fulfill, as they require both laws and enforcement mechanisms and an entire regulatory framework for each weapon type. Further, the more WMD materials or transit points a state has, the more resources are required to place controls over them. As a result, these provisions are likely to take the longest to implement, require the most assistance, and have the greatest degree of variance for the measures established. The training of security, border, customs, and other law enforcement personnel will be a crucial factor in the establishment of effective domestic controls. These provisions are also the most important from a nonproliferation standpoint. Rather than simply criminalizing the acquisition of WMD, they are designed to prevent such acquisition in the first place and ensure that if acquired, these materials will not be transferred beyond the state's borders.

While these three types of provisions are deemed to be the most important national implementation obligations to be fulfilled by certain key states, it is important to note that one other central obligation of the resolution, contained in operative paragraph 1 (OP1), requires states to refrain from "providing any form of support to non-State actors," attempting to acquire WMD. Because this obligation is a state prohibition rather than a matter of national implementation, it is not included among the key provisions in this report.

In identifying the provisions of particular importance for these states, the suggestion is not that for any given state, the fulfillment of such relevant provisions will satisfy that state's 1540 obligations. Rather, that fulfillment would be the most significant contribution made by that state to the success of the resolution and the strengthening of the WMD nonproliferation regime.

Assessment of State Progress

One of the additional benefits of 1540 to the nonproliferation regime is the information garnered from the submission of national reports. While information has been available on measures pertinent to the resolution, including IAEA safeguards, OPCW controls, and export control guidelines, the collection of these reports has allowed a comprehensive picture of all relevant measures for controlling the spread of nuclear, chemical, and biological weapons and materials. Even without the submission of nearly one-third of state national reports, the information provided thus far indicates the scope of existing efforts. It is therefore possible to generate preliminary assessments of the resolution's implementation at this early stage.

The Framework for Assessment

In order to evaluate the current state of progress in the implementation of 1540, this report will rely on the assessments made by the 1540 Committee in the form of the national matrix created by the group of governmental experts on 1540. (Matrices have been submitted by states as part of their follow-up reports and are available in the public domain. See Appendix 1 for a blank example of the matrix). These matrices have been used as a consistent standard to evaluate national reports submitted by states, which have varied considerably in scope and detail, and allow the committee to identify clearly which provisions of the resolution a state has fulfilled, and by extension, what measures must still be implemented.

The matrix consists of 382 fields, with sections detailing the specific provisions related to the operative paragraphs requiring national implementation measures. The obligations under OPs 2 and 3 are divided into three sections, one for each type of WMD. These sections are further divided into the establishment of a national legal framework and enforcement mechanisms. The provisions identified in the matrix are primarily based on the specific obligations identified in the resolution. The matrix also draws on existing measures to specify obligations that lack clear definition or enumeration. For example, for OP3 (d), regarding export controls, while the resolution itself does not specifically call for licensing provisions, because such measures are a necessary component of ''appropriate effective'' export controls, they are included as requirements in the relevant section of the matrix.

Using these matrices, this study focused on those 84 key states identified as the most important for implementing the resolution and the types of provisions that have been determined to be particularly relevant for each of these states. Therefore, for a primary origin state under the nuclear and chemical weapons categories, the assessment conducted in this report will evaluate the committee's findings regarding the nuclear and chemical sections of the matrix regarding the criminalization, accounting and security, and border and export control provisions.

The consideration of whether or not a state has fulfilled a specific 1540 obligation is based on the evidence that state provides regarding its actions to implement the resolution. The committee has assessed this evidence in two ways. The majority of this evidence has been determined to be directly relevant for the fulfillment of given provisions of the resolution, and no further information on these measures is needed. However, a significant portion of this evidence has been determined to be potentially relevant for the fulfillment of given provisions requiring clarification before the committee can make a definitive determination. In these cases, the matrix indicates that more information is requested from that state regarding a given provision.[36]

There is a significant discrepancy in the cases for which the committee determines that more information is needed. In some cases, it is unclear whether the information provided is immediately relevant to a certain provision of the resolution. For example, a border enforcement agency may be cited as an enforcement mechanism, but there is not enough information to discern whether the agency is responsible for specific required activities, such as preventing the cross-border movement of chemical precursors that

could be used for chemical weapons. In other cases, the state might denote that legislation or enforcement mechanisms regarding a certain provision are pending, and the committee is awaiting clarification regarding the status of such actions.

Lastly, there are cases in which detailed information is provided, but a source document may be required to verify the information. For the purpose of consistency with the findings of the committee in its April report, and to avoid the inclusion of vague or pending actions to implement the resolution, this study will consider only instances for which the committee has determined that sufficient evidence of its fulfillment has been provided. While this approach might not capture cases in which a provision is actually in place and only requires clarification by the state in question, because this study is a preliminary assessment of an ongoing process, it will rely only on the best information currently available and can be updated as more information is provided.

In taking into account all of the evidence provided for the fulfillment of the resolution, a tally was created of cases of state fulfillment for the relevant provisions for each of the 84 states. This tally was then compared with the total number of obligations of each section of the matrix, each representing different operative paragraphs or subparagraphs of the resolution. This total number does not include sections of the matrix reserved for ''additional'' or ''other'' relevant actions, as these are not indicative of obligations per se. Since certain provisions in the matrix are also relevant only for parties to the WMD treaties or members of treaty bodies, such as a national CWC authority, these obligations were considered only for members of the treaty or organization, as a state cannot be required to implement voluntary measures if it has not made a commitment to do so. The three sections of the matrix that corresponded to types of domestic implementation provisions deemed most important were considered; that is, those corresponding to OP2 (criminalization), OP3 (a) and (b) (accounting, security, and physical protection), and OP3 (c) and (d) (border and export controls). The tally of provisions fulfilled and the total provisions identified for each section were then compared to generate the percentage of relevant obligations fulfilled for each state (see Table 2). A total percentage of all key obligations fulfilled was also determined for each state (see Table 3).

Assessment of Key State Implementation

Assessments can be made based on the findings presented in Tables 2 and 3. In terms of an overall assessment, it is clear that the starting point for the implementation of 1540 leaves room for much to be accomplished. With an average of about 23.5 percent fulfillment of the priority obligations by the 84 key states, the principal gaps the resolution is intended to close are open and glaring. While most of those states with the highest percentages of obligations fulfilled are in the developed world, a considerable number of states with advanced technology, including declared possessors and former possessors of WMD such as China, France, Russia, and the UK, have less than half of their key provisions in place. To some extent, this assessment underestimates the measures that states currently have in place, as nearly every state included information in its report for which the committee required clarification in order to determine that particular provisions had been fulfilled. As shown in Figure 1, some states have a large body of regulations in place

TABLE 2
Total Percentage of Fulfillment of Key Obligations

State	Total Percentage of Key Obligations	State	Total Percentage of Key Obligations
Albania	39.6%	Lithuania	38.2%
Algeria	6.0%	Malaysia	10.7%
Argentina	38.4%	Malta	56.9%
Armenia	41.8%	Mexico	10.2%
Australia	35.6%	Mongolia	4.8%
Austria	37.9%	Myanmar	2.8%
Bahamas	2.1%	Netherlands	43.1%
Bangladesh	–	Nigeria	2.3%
Belarus	23.4%	North Korea (DPRK)	–
Belgium	29.8%	Norway	20.3%
Brazil	33.3%	Oman	0.0%
Bulgaria	36.6%	Pakistan	35.6%
Canada	30.0%	Panama	2.1%
Chile	2.3%	Peru	2.7%
China	23.1%	Philippines	10.2%
Colombia	16.4%	Poland	46.9%
Croatia	10.0%	Portugal	19.1%
Cuba	30.8%	Romania	51.9%
Czech Republic	39.7%	Russia	28.4%
Denmark	33.3%	Saudi Arabia	0.0%
DR Congo	–	Serbia and Montenegro	7.9%
Egypt	1.9%	Singapore	42.6%
Estonia	30.9%	Slovakia	31.6%
Finland	44.7%	Slovenia	35.5%
France	47.8%	South Africa	39.4%
Georgia	12.0%	South Korea (ROK)	25.0%
Germany	70.9%	Spain	24.4%
Ghana	10.9%	Sri Lanka	2.1%
Greece	27.7%	Sudan	–
Hungary	29.2%	Sweden	23.8%
India	31.6%	Switzerland	15.6%
Indonesia	10.2%	Syria	0.9%
Iran	15.9%	Taiwan[1]	–
Iraq	12.8%	Thailand	5.3%
Ireland	38.0%	Turkey	18.1%
Israel	12.8%	Ukraine	24.8%
Italy	27.2%	United Arab Emirates	0.0%
Jamaica	2.9%	United Kingdom	35.9%
Japan	32.5%	United States	77.2%
Kazakhstan	18.5%	Uzbekistan	15.3%
Latvia	32.7%	Venezuela	3.4%
Libya	6.9%	Vietnam	12.1%

[1]In spite of Taiwan's uncertain political status, it is considered as its own entity for the purposes of this study due to capabilities of relevance for 1540.

TABLE 3
Percentages of Key Obligations Fulfilled by Obligation Type

State	Criminalization	Accounting & Security	Border & Export Control
Albania	65.4%	56.7%	15.4%
Algeria	0.0%	10.0%	6.7%
Argentina	28.8%	40.0%	42.3%
Armenia	38.5%	53.1%	36.5%
Australia	47.4%	23.3%	36.5%
Austria	34.6%	43.1%	36.5%
Bahamas	N/A	N/A	2.1%
Bangladesh	–	–	–
Belarus	44.2%	8.6%	21.2%
Belgium	34.6%	36.2%	25.7%
Brazil	42.3%	23.3%	34.2%
Bulgaria	57.7%	27.9%	30.8%
Canada	29.5%	18.6%	36.5%
Chile	0.0%	10.0%	0.0%
China	17.9%	24.4%	25.0%
Colombia	30.8%	18.8%	7.7%
Croatia	0.0%	18.8%	9.6%
Cuba	48.1%	51.7%	10.6%
Czech Republic	19.2%	53.5%	42.3%
Denmark	19.2%	33.3%	40.4%
DR Congo	–	–	–
Egypt	0.0%	0.0%	3.8%
Estonia	3.8%	40.6%	38.5%
Finland	50.0%	41.9%	43.6%
France	44.9%	46.5%	50.0%
Georgia	11.5%	8.3%	14.4%
Germany	85.9%	87.2%	54.5%
Ghana	0.0%	37.5%	0.0%
Greece	0.0%	28.1%	32.4%
Hungary	0.0%	28.3%	44.2%
India	42.3%	44.2%	19.2%
Indonesia	0.0%	18.8%	10.1%
Iran	24.4%	12.8%	13.5%
Iraq	0.0%	11.6%	13.5%
Ireland	42.3%	53.3%	26.9%
Israel	2.6%	3.5%	23.1%
Italy	28.2%	43.0%	30.8%
Jamaica	0.0%	12.5%	1.4%
Japan	44.9%	27.9%	28.8%
Kazakhstan	3.8%	16.7%	26.9%
Latvia	26.9%	37.5%	32.7%
Libya	11.5%	15.0%	0.0%
Lithuania	11.5%	59.4%	38.5%
Malaysia	3.8%	21.9%	9.5%
Malta	N/A	N/A	56.9%
Mexico	0.0%	53.1%	6.6%
Mongolia	15.4%	0.0%	1.9%
Myanmar	0.0%	0.0%	5.8%
Netherlands	73.1%	27.9%	36.5%
Nigeria	0.0%	8.3%	0.0%

TABLE 3 *(Continued)*

State	Criminalization	Accounting & Security	Border & Export Control
North Korea (DPRK)	–	–	–
Norway	29.5%	11.6%	20.5%
Oman	N/A	N/A	0.0%
Pakistan	30.8%	18.3%	24.0%
Panama	N/A	N/A	2.1%
Peru	0.0%	9.4%	0.0%
Philippines	0.0%	37.5%	6.1%
Poland	51.3%	45.3%	45.5%
Portugal	7.7%	31.3%	17.3%
Romania	46.2%	48.3%	56.7%
Russia	44.9%	29.1%	19.9%
Saudi Arabia	0.0%	0.0%	0.0%
Serbia and Montenegro	11.5%	11.7%	3.8%
Singapore	57.7%	7.1%	46.6%
Slovakia	11.5%	40.7%	36.5%
Slovenia	46.2%	37.5%	28.8%
South Africa	24.4%	58.1%	36.5%
South Korea (ROK)	34.6%	10.0%	27.6%
Spain	15.4%	27.9%	26.9%
Sri Lanka	N/A	N/A	2.1%
Sudan	–	–	–
Sweden	3.8%	31.4%	29.5%
Switzerland	38.5%	5.8%	9.6%
Syria	0.0%	2.3%	0.6%
Taiwan[1]	–	–	–
Thailand	0.0%	11.7%	4.6%
Turkey	0.0%	18.3%	26.9%
Ukraine	26.9%	19.0%	26.9%
United Arab Emirates	N/A	N/A	0.0%
United Kingdom	39.7%	40.7%	31.4%
United States	70.5%	75.6%	81.4%
Uzbekistan	23.1%	31.7%	1.9%
Venezuela	0.0%	12.5%	2.0%
Vietnam	0.0%	28.3%	9.9%

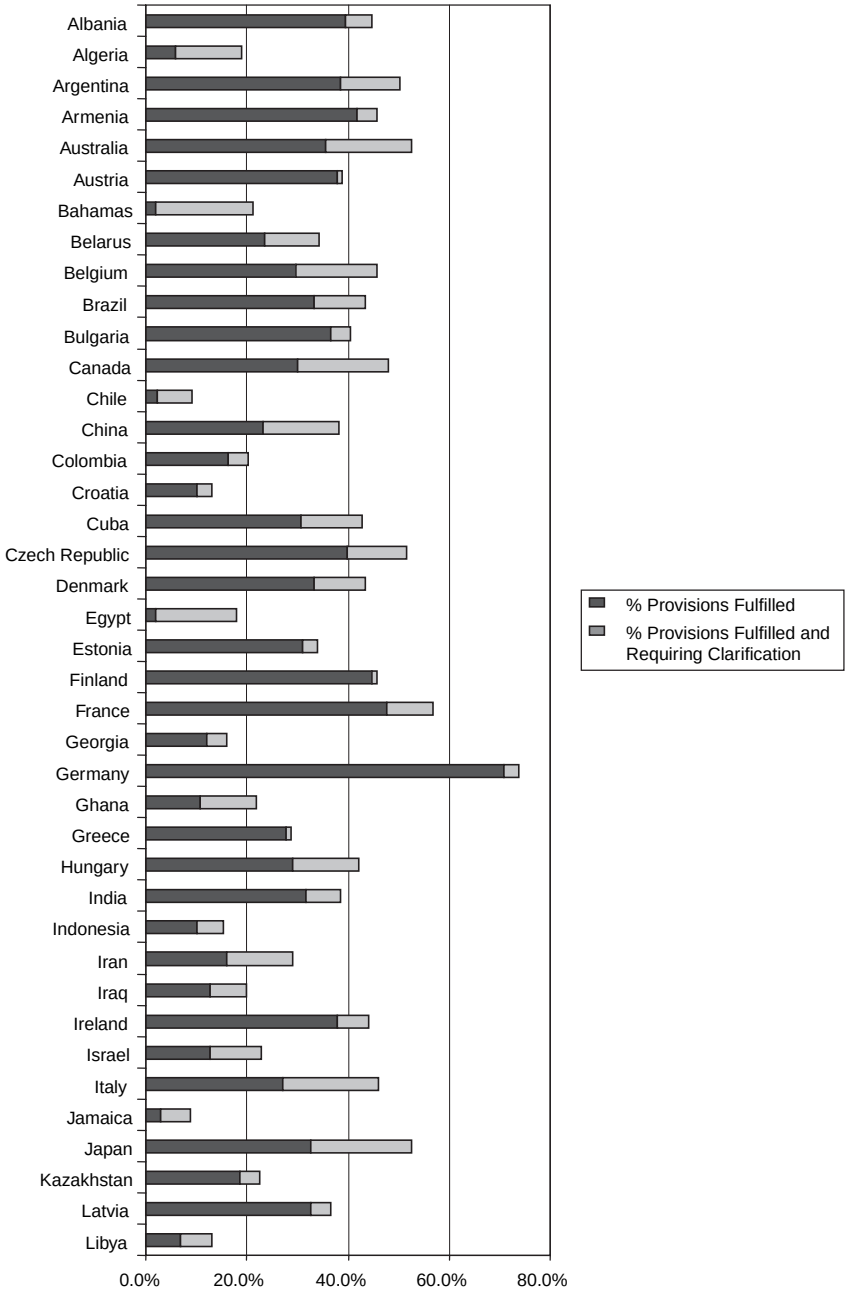
[1]In spite of Taiwan's uncertain political status, it is considered as its own entity for the purposes of this study due to capabilities of relevance for 1540.

that may be applicable to provisions of the resolution but require clarification for various reasons. It is therefore important to keep in mind during such a preliminary assessment that the actual fulfillment of obligations in many of these cases is somewhere between what the state has been determined to have fulfilled, and what it has also potentially fulfilled.

It is also apparent that the regions with the lowest percentage of obligations fulfilled are also those that have been ''trouble spots'' for the theft and trafficking of WMD materials, including Southeastern Europe, Southeast Asia, and the Middle East. Of particular concern is the fact that the states that have not fulfilled any of their key obligations (Oman, Saudi Arabia, and the United Arab Emirates) are all on the Arabian

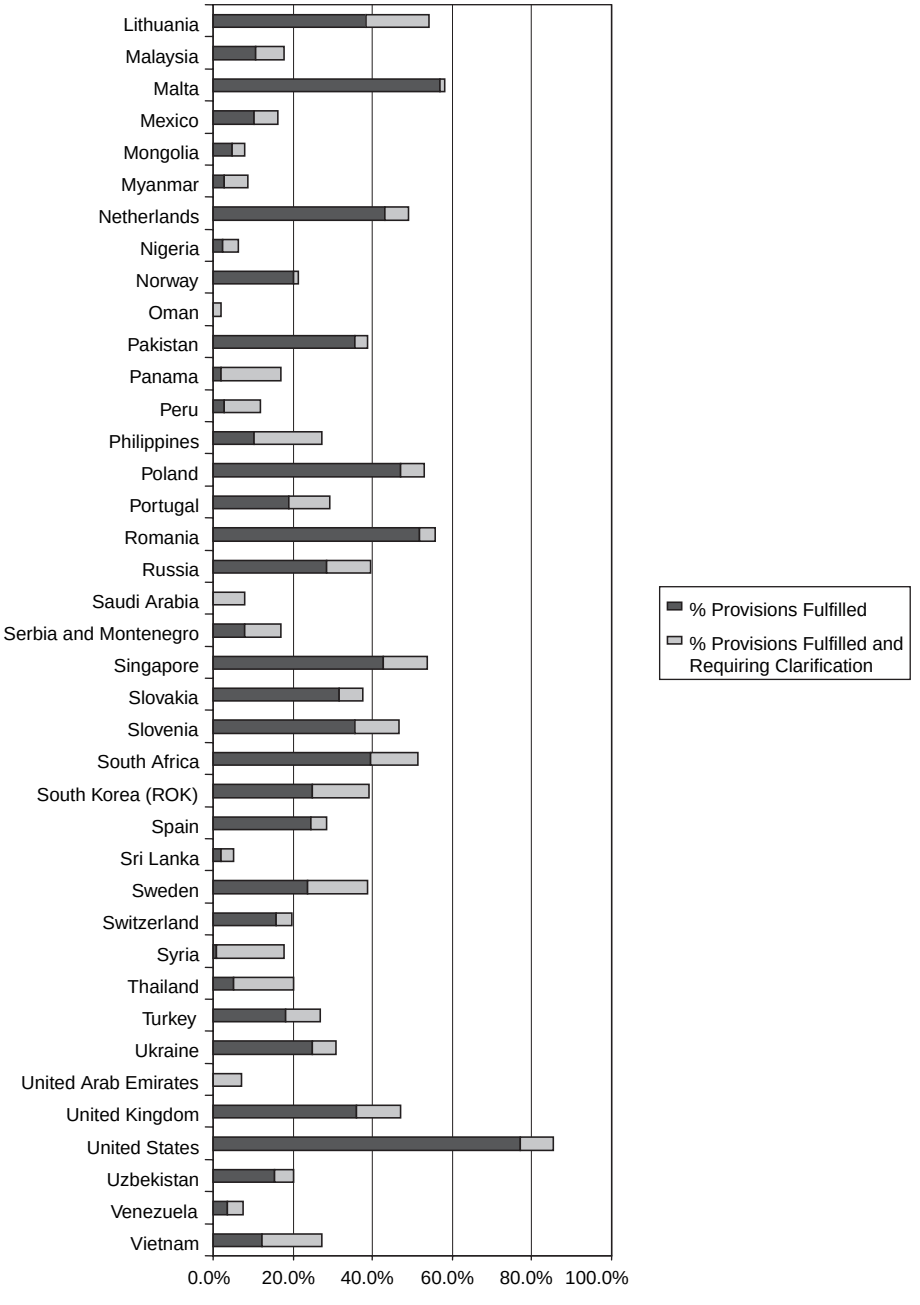
FIGURE 1

Percentage Fulfillment of Key Provisions and Provisions Requiring Clarification



Note. Bangladesh, North Korea, DR Congo, and Sudan were not included as their percentages of fulfillment are all zero.

FIGURE 1 *(Continued)*
Percentage Fulfillment of Key Provisions and Provisions Requiring Clarification



Note. Bangladesh, North Korea, DR Congo, and Sudan were not included as their percentages of fulfillment are all zero.

Peninsula and encompass many of the primary import/export and transshipment points in the Persian Gulf.[37]

Moreover, a clear picture of the progress made by key states in the implementation of 1540 cannot be adequately accomplished until all 84 states have submitted national reports. Four key states have failed to submit their first reports (Bangladesh, North Korea, the Democratic Republic of Congo, and Sudan). While the composition of this list is not surprising, it is also troubling given North Korea's history of proliferation and suspicion regarding a Sudanese chemical weapons program. It will be critical for the success of 1540 that the UNSC, as well as individual states, engage these four states to ensure that they fulfill the resolution's reporting requirement. If states such as North Korea are allowed to abrogate one of the least demanding obligations of the resolution, then not only will a critical gap be left open in the universal criminalization of WMD, but efforts to ensure that other states take the national implementation provisions of 1540 seriously will be sorely undermined.

In addition to an overall assessment of progress, it is also important to consider where various strengths and weaknesses lie. It is therefore necessary to compare the implementation of the resolution by the three different types of obligations, as well by the distinction between the legislative framework and enforcement mechanisms for the resolution's obligations.

Comparing Types of Obligations

There were no drastic differences in the average fulfillment of the key provisions under each of the three types of 1540 obligations (see Tables 4 and 5). All three averages were within 5 percent of the overall average fulfillment, and the percentages of fulfillment for criminalization and border and export control provisions differed by only about 1 percent. The clearest difference was the higher degree of fulfillment of the accounting and security provisions, which stood at an average of 27.9 percent. This difference is due to various factors. For one, accounting and security measures are already efforts taken into consideration when dealing with not only unconventional weapons themselves, but also the hazardous materials that could be used to make them. Accounting and security over such materials not only serve a nonproliferation function, but also serve the purpose of industry—which wants to ensure that its investments are not squandered or stolen.

These types of provisions are also reinforced by the WMD treaty regimes, which require national measures to secure relevant materials and properly dispose of weapons. The role of these pre-existing obligations under the treaty regimes, and under the IAEA in particular, becomes apparent when looking at the fulfillment of the accounting and

TABLE 4
Average Percentage Fulfillment of Obligation Types

	Criminalization	Accounting and Security	Border and Export Controls	Overall
Average	23.3%	27.9%	22.2%	23.5%

TABLE 5
Average percentage Fulfillment of Obligation and Weapon Types

Provision Type	BW	CW	NW
Criminalization	34.3%	31.2%	19.6%
Accounting and Security	24.1%	20.6%	35.9%
Border and Export Controls	22.1%	22.1%	22.9%

security provisions for the three weapon types. In comparison with the average fulfillment of these measures for BW (24.1 percent) and CW (20.6 percent), the fulfillment of the nuclear weapon accounting and security provisions are a striking 35.9 percent, the highest level of fulfillment for any combination of weapon and obligation type. One key factor is simply the nature of nuclear technology. Because of the inherent risks involved with maintaining many types of nuclear facilities, as well as the significant investment involved in constructing and running them, accounting and security measures are more likely to be given priority. The role of the IAEA has also been instrumental in this regard. Not only has its safeguards regime provided a degree of security in itself, but efforts to address safety and security, as well as the security measures put in place under the Convention for the Physical Protection of Nuclear Material (CPPNM), have enhanced controls over nuclear material and facilities. The pre-existing efforts to secure nuclear weapons and materials are a positive sign, and some of this experience may be useful in applying similar measures to biological and chemical weapons and materials.

While criminalization mechanisms, which essentially apply WMD prohibitions to non-state actors, have traditionally been absent in the nonproliferation regime, they are also measures states may be expected to take to prevent WMD and related materials from being acquired, manufactured, or used within their territories. Such an expectation is particularly relevant for the 78 primary origin states identified in this study, as well as any other state with similar, unreported capabilities that could be exploited by terrorists or illicit supply networks. The average fulfillment of the criminalization provisions of the resolution, at 23.3 percent, is on par with the overall average of 23.5 percent. However, when divided by weapon type, it is apparent that the criminalization of BW (34.3 percent fulfillment) and CW (31.2 percent fulfillment) and related materials has been the strongest. Although this difference is to some extent due to the far lower numbers of key states considered primary origin states for biological and chemical weapons and materials, it is also influenced by the particular concern that non-state actors could acquire and use such weapons, which are far easier to manufacture than nuclear weapons because of the prevalence of pathogens and chemical precursors. However, given the intent of terrorist organizations to obtain nuclear weapons, the discovery of illicit nuclear trafficking networks, and the severe risk posed by nuclear terrorism, the fact that fulfillment of criminalization provisions for nuclear weapons (19.6 percent) represents the lowest of key obligations by these states is cause for some concern, and efforts to criminalize all three types of weapons will need to be given equal emphasis.

With an average of 22.2 percent fulfillment, the border and export control provisions of the resolution were the lowest of the three types of obligations, and there was little variation between border and export controls over three weapon types. In spite of the important, long-standing role of export controls in the WMD nonproliferation regime, this relatively low degree of fulfillment is due to at least four factors.

First, unlike the provisions for criminalization, as well as for accounting, security, and physical protection, the border and export control requirements for at least one weapon type were important for all 84 states. Moreover, for the 36 transit states and the 28 primary origin states in all three weapon categories, the border and export control provisions are important for all three weapon types. Therefore, there are simply more states for which these provisions are particularly relevant.

Second, the border and export control clauses of the resolution include a larger number of specific actions. In the matrix, these operative subparagraphs are divided into about 52 specific provisions for each weapon type. This number is far greater than the 26 specific provisions indicated in the matrix for the criminalization obligations and the 26 to 32 specific provisions under the accounting, security, and physical protection section of the matrix. The greater number of obligations naturally leaves far more room for gaps.

Furthermore, these types of provisions are the most demanding in terms of the adoption of legislation and the establishment of enforcement mechanisms. Such measures require a significant degree of legal and technical expertise to establish control lists, end-user verifications, and licensing requirements, as well as human resources capacity to develop border and customs authorities.

Last, many countries, namely the members of the NAM, have expressed political opposition to the use of export controls, continuing to ''note with concern that undue restrictions on exports to developing countries of material, equipment and technology, for peaceful purposes persist.''[38] As the export control provisions constitute a significant portion of the obligations under OP3 (c) and (d), this resistance to the principle of export control measures suggests that there had been little effort by these states to establish such mechanisms prior to efforts to implement 1540.

The results regarding the state of fulfillment of these different types of obligations demonstrate the role the resolution has to play in reinforcing the WMD nonproliferation regimes. While the criminalization aspect of 1540 is a new addition, for the most part, the accounting, security, and physical protection, as well as the border and export control provisions, are already part of the existing regimes. The lack of fulfillment of many of these 1540 obligations, therefore, points to a lack of fulfillment of treaty obligations as well.

Legislative Framework and Enforcement Mechanisms

The most marked discrepancy in the fulfillment of the provisions of the resolution is between the adoption of a legal framework for fulfilling 1540's obligations and the establishment of enforcement mechanisms to deter, identify, and punish violators of such laws (see Table 6 and Figure 2). The vast majority of the 84 states examined in this study carried out a larger percentage of the legislative obligations under the resolution than they did the corresponding enforcement provisions, with an overall average of 28.8

TABLE 6
Average Percentage Fulfillment of Legislative Framework and Enforcement Measures

	Legislative Framework	Enforcement Measures
Average	28.8%	17.7%

percent fulfillment for a legislative framework and 17.7 percent fulfillment for enforcement mechanisms. For many states, this discrepancy was considerable, and some, including Chile, Egypt, Nigeria, Peru, and Sri Lanka, had only legislative measures in place.

To an extent, this difference helps to explain the limited overall fulfillment of the provisions of the resolution for states with significant involvement in WMD nonproliferation activities, such as export control regimes. While many of these states have measures in place to address a large percentage of 1540's obligations, overall, many of these measures are limited to laws and prohibitions—thereby lacking the corollary penalties and enforcement bodies. This is particularly true for key Western Group states such as Australia, Canada, France, Germany, and Sweden. This discrepancy is also not necessarily surprising, as in many cases the development of enforcement measures is more demanding than the passage of legislation. While the adoption of regulations requires considerable information in order to ensure that such legislation is appropriate, including consideration of the amount and locations of biological materials to be accounted for and secured, the establishment of enforcement mechanisms often requires the creation or delegation of an oversight mechanism, the training of personnel, and the consideration of penalties, in addition to the information needed for adopting the legal framework. As seen by the resolution's requirement that states both "adopt and enforce" pertinent legislation, it is necessary that laws are in place and instruments are available to deter and apprehend violators for the implementation of 1540's provisions to be effective. This discrepancy may therefore be key for states providing assistance, as there is likely to be a greater need for assistance in laying the foundations for enforcement mechanisms and training personnel than for conferring legal guidance.

Comparison with the Assessment of the 1540 Committee

It is important to emphasize that the framework used in this study is markedly different from the methodology of the 1540 Committee in its review of the implementation of the resolution continued in the April 2006 report. This study is not intended to supplement the assessment of the committee as much as to be a parallel assessment by looking at the implementation of 1540 from a perspective outside that of an international representative body. The committee's report details overall implementation using the same assessment matrices used in this study's evaluation, tallying the provisions for which states have provided sufficient information regarding their fulfillment. The approach in the committee's report is based on an evaluation of the global implementation of each provision of the matrix, detailing how many states provided evidence of their fulfillment of these obligations overall. In this regard, it adopts an international outlook in which the

FIGURE 2

Percentage Fulfillment of Key Provisions for Legislative Framework and Enforcement Measures

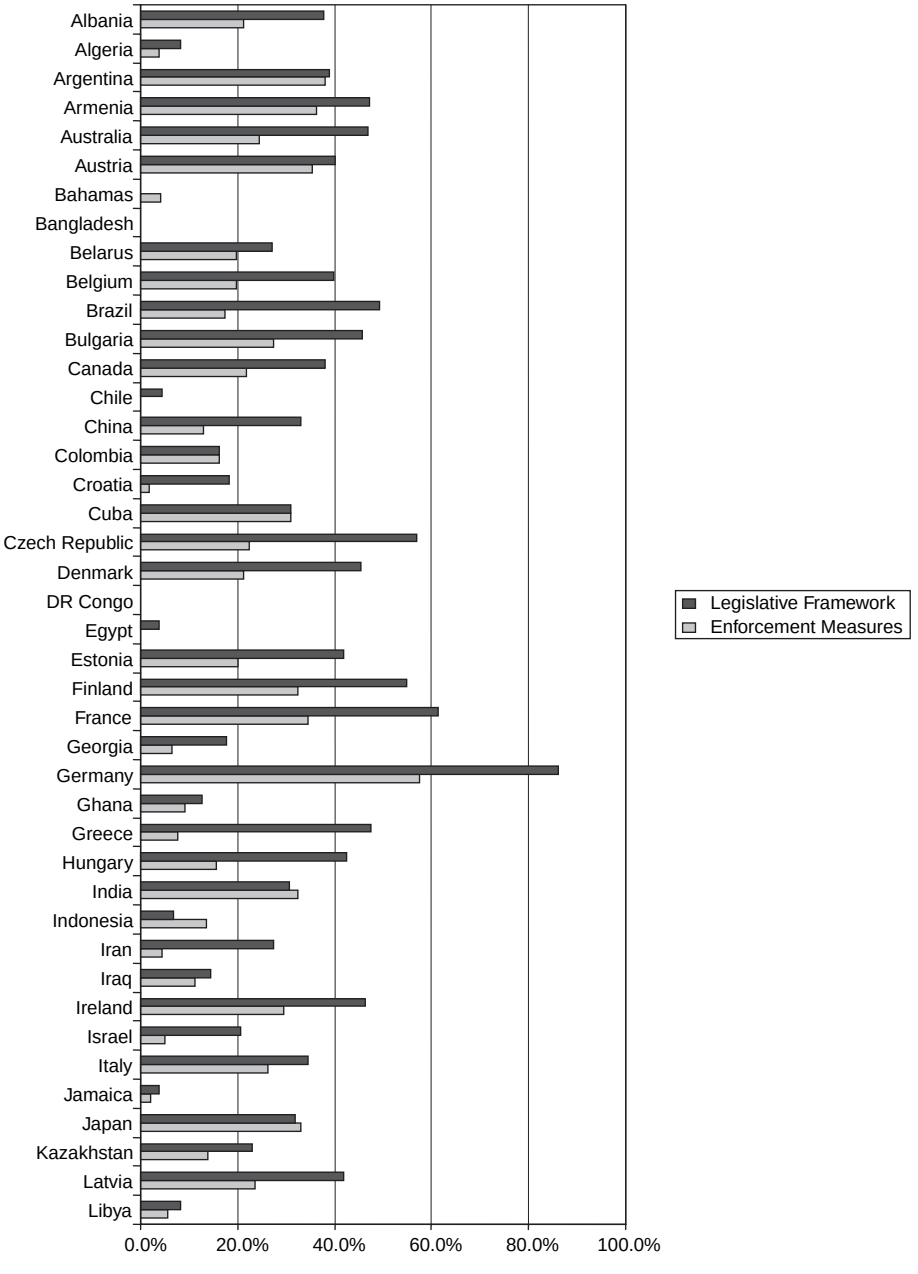
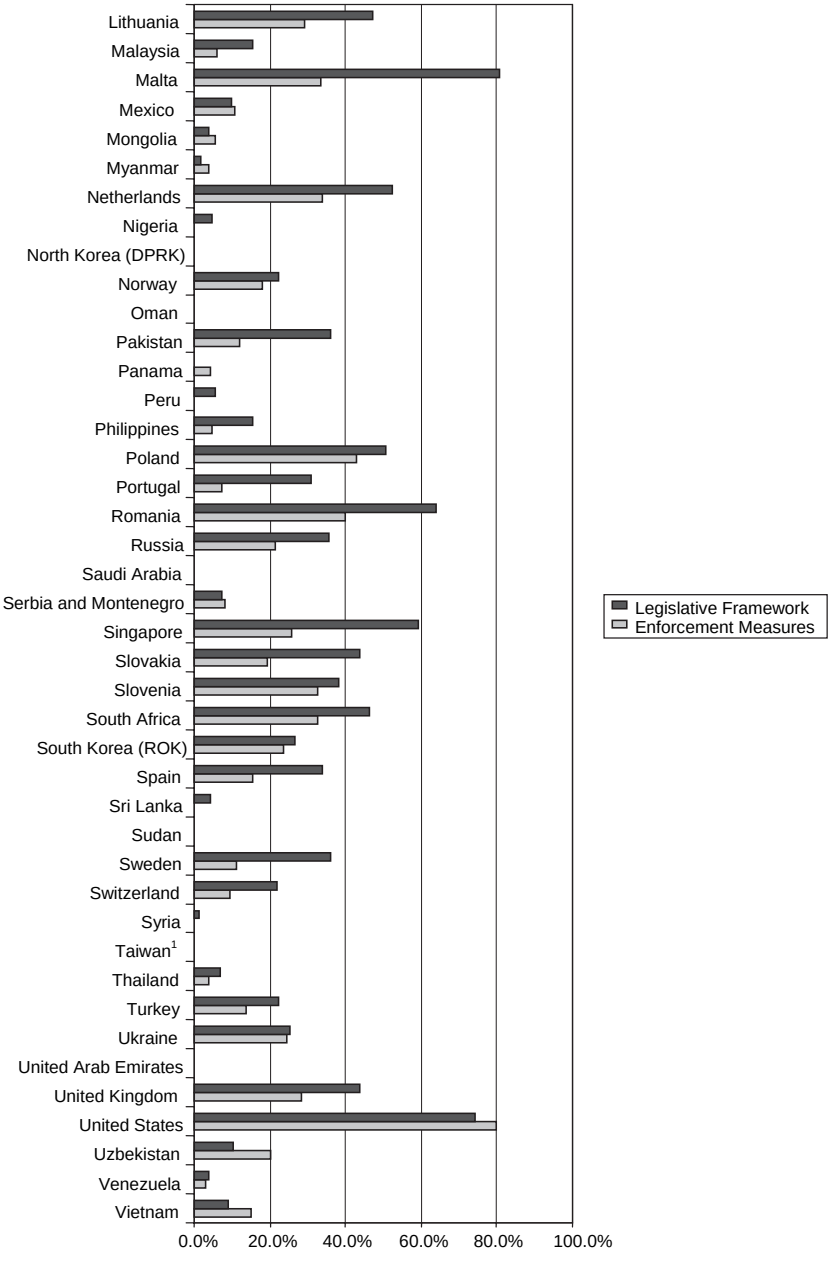


FIGURE 2 *(Continued)*
Percentage Fulfillment of Key Provisions for Legislative Framework and Enforcement Measures



Footnote 1. In spite of Taiwan's uncertain political status, it is considered as its own entity for the purposes of this study due to capabilities of relevance for 1540.

implementation of 1540 is treated as a global effort and each state's successive fulfillment of obligations contributes to the goal of the universal implementation of each provision. As a result, the committee report provides a clear picture of the status of 1540 implementation overall, as well as insight into some of the discrepancies in the fulfillment of varying provisions and weapon types. What it does not provide is the discrepancies in the fulfillment of 1540 obligations between states and geographical regions. Leaving such an analysis out was intentional owing to the political difficulties faced by a neutral international body in pointing out national discrepancies in carrying out such obligations, as well as its interest in preserving state anonymity to foster cooperation.

In contrast, this study focuses on the implementation of certain aspects of the resolution at the national level in a select group of states. Rather than a comprehensive overview of 1540's status, it highlights key proliferation risks and examines efforts to mitigate those risks within the scope of the resolution. In that sense, it was necessary to look at both state capabilities and state implementation, as well as to consider the discrepancies therein in order to determine which efforts are the most important to be taken and to which states they should be applied.

Despite these differences, there are two important shared findings. The first is a clear imbalance between the establishment of legal frameworks for control over WMD and their corresponding enforcement mechanisms. As indicated in this study, the tendency to carry out a significantly greater number of obligations classified as part of a legal framework than those considered enforcement measures was demonstrated by the majority of states in question. Likewise, the committee report indicates the same tendency for the majority of 1540 provisions.[39] Second, and most importantly, both assessments share one fundamental conclusion: Much work is still needed to carry out the resolution's objectives. The results of this study focused on a select group of key states and found that, even among states in which implementation is expected to be the greatest, continued efforts will be required just to the most pertinent 1540 provisions, much less the resolution as a whole. In terms of the committee report, the global evaluation shows that the majority of reporting states have not yet provided sufficient evidence that they have fulfilled the majority of 1540 obligations.

Conclusion

These assessments of 1540 provision fulfillment demonstrate that most key states are starting from a fairly low baseline, and many of the prime sources of WMD and their paths of proliferation are currently underprotected. Revelations about such poor controls, of course, was the primary impetus for the adoption of the resolution in the first place, and 1540 has significant potential to fill these regulatory gaps—depending on the process of its implementation.

The results of this study also point to the complexity and magnitude of the task at hand. Even states that have spent considerable time and resources developing their own national, plurilateral, and multilateral WMD controls have significant gaps in the way they address non-state actors. On one hand, this finding demonstrates a primary reason behind the adoption of the resolution as a universal nonproliferation mechanism—it points out

that every state, regardless of its nonproliferation credentials, has gaps in its laws and enforcement mechanisms that could be exploited by non-state actors seeking such weapons and materials. On the other hand, it poses very serious questions regarding the implementation of the resolution. Even if every other state were somehow able to adopt every measure currently implemented by states such as the United States and Germany to prevent the proliferation of WMD to non-state actors, they would still not fulfill all of the obligations under the resolution.

Furthermore, as the findings of this study depend on the assessments made by the 1540 Committee, they take into account only *whether* key obligations have been fulfilled—not the degree to which they are fulfilled effectively. The relative strength of national regulations over WMD is not being measured by the committee, and while a state may have fulfilled only a fairly low percentage of obligations, those measures may still be stronger than another state that has fulfilled a larger percentage but only in a perfunctory manner. As 1540 fulfillment must be appropriate and effective, assessing the strength of such measures will pose a task for the international community, and it is unclear that the committee will be given the mandate to do so.

The goal is to have a regulatory framework not just on par with the most advanced countries, but one beyond that level of regulation. Is such a goal realizable? And furthermore, is it necessary? If the answer to these questions is yes, then all states will need to be aware of the long-term sustained global commitment required for achieving such a goal, and that it will not be accomplished without proactive strategies and international, regional, and national engagement among states. At the same time, if the goal is not the universal and full implementation of the resolution, then a separate framework will need to be determined for what must be accomplished and where. Either way, a strategy of prioritization can prove helpful in achieving such goals, whether as benchmarks toward universal and full implementation, or as criteria for what 1540 must accomplish.

The goals for such a resolution also bring up questions of compliance. Basing compliance on full implementation would technically mean that every state is currently in noncompliance with a Chapter VII resolution. Since such a scenario is not likely the intention of the Security Council, is consideration of state compliance to be undertaken by the committee at some future date when states are given adequate time to implement their obligations, or will compliance be considered on a case-by-case basis, taking into account the degree of effort states made in carrying out their obligations and their relative risk for WMD proliferation? Such questions are unlikely to be addressed at this early stage. However, as implementation continues, states themselves, if not the Security Council, are likely to question when their obligations under this resolution have been fulfilled, and if not, if they will be called to task for it.

While notions of compliance and full implementation are to be considered in the long-term, in the meantime, many states have a particularly valuable role to play in the regime, and the intention of this analysis is to provide a framework for determining those roles and how they fit with 1540 obligations. With the recognition of which states are of particular importance for the implementation of the resolution, and which obligations are the most relevant for them to fulfill, attention may be drawn to the progress these states make in establishing controls over their proliferation-sensitive activities. A concentration

on these priorities helps to ensure that, regardless of the unsure realization of the long-term lofty goal of the full implementation of all of 1540's provisions by all states, the most serious risks of WMD proliferation to non-state actors will be addressed by the resolution. As such a strategy is not likely to be feasible under the auspices of the Security Council, it would need to be incorporated into the efforts of states implementing their own obligations, through bilateral engagement, through guidance provided by relevant international organizations, and within regional efforts to contextualize implementation and harmonize controls.

First, the key states that continue to establish their own domestic controls must be cognizant of how to best use their resources, not only to fulfill their obligations, but also to close the most important gaps in the nonproliferation regime. That means, rather than simply executing some convenient tasks, the state should first target key facilities for protection, criminalize the misuse of available WMD-relevant materials, and take steps to prevent the illicit transfer of such materials beyond the state's borders. Even prior to taking such steps to implement 1540, the development of action plans, which can be coordinated with assisting states, international organizations, and most importantly, regional organizations and groupings, would provide an appropriate means to conduct a needs assessment for assistance, set benchmarks for fulfilling obligations, and demonstrate a good-faith effort to comply with the resolution.

Second, states and organizations providing assistance are also in a position to coordinate their efforts to ensure that their resources are being put to the most effective possible use. International organizations, such as the IAEA and OPCW, are particularly suited to approach 1540 implementation from a broader perspective, since they can engage a wider array of states without facing the political limitations that states themselves, or plurilateral bodies such as the NSG, may encounter in offering help. Using their technical expertise to develop objective criteria for determining priorities for assistance, such as the IAEA's list of states with significant nuclear activities, these agencies may be able to highlight states with particular responsibilities under the resolution, a task that the more politically conscious Security Council is likely to avoid.

On the other hand, individual states, or groups of like-minded states, are not inhibited by the exigencies of neutrality, and may set their own prerogatives in establishing priorities for assistance and strategizing to ensure that states fulfill their 1540 obligations. As some of the states that have offered assistance are also among the key targets for mass-casualty terrorist attacks involving WMD, it is not only aids the nonproliferation regime to focus 1540 implementation on the most likely proliferation paths, it is also prudent from a national security standpoint. Increasing support for threat reduction efforts already in place by many of these states can effectively address some of key proliferation concerns for the resolution, such as physical protection in Russia, other states of the former Soviet Union, and Libya, in a timely manner.

Last, regional bodies, such as the European Union, Association of Southeast Asian Nations, Caribbean Community, and the African Union, are appropriate mechanisms to pool resources for the implementation of the resolution to address both proliferation threats and common related security concerns, such as border controls within the region and illicit financial networks. As such groups are more sensitive to the character of

institutions and laws in the region, they are apt to develop more effective and contextually driven ways to fulfill the obligations of 1540 rather than simply transplant laws and organizations from states with a very different legal and organizational culture. Moreover, such bodies can place fulfillment of the resolution on the regional agenda and promote its universal adherence by all states in the region, not just those that are particularly relevant to WMD proliferation.

The establishment of the prohibitions and controls embodied in the resolution will go far toward preventing the acquisition of WMD by non-state actors. Moreover, reinforcing the national implementation requirements of the WMD treaties and applying such requirements to all states will strengthen the nonproliferation regime as a whole. Yet the resolution is not the end-all in WMD nonproliferation, no matter how well states fulfill their 1540 obligations. Ultimately, the prevention of WMD proliferation depends on how seriously states take their responsibilities to prevent such proliferation, both inside and outside the established regimes.

NOTES

1. The three types of weapons considered WMD are nuclear, biological, and chemical weapons. The Resolution itself does not use the term WMD, but explicitly specifies the three types of weapons due to the fact that there is no commonly agreed definition on what, technically, constitutes a weapon of mass destruction.
2. According to the testimony of a former Al Qaeda operative, the organization has not only declared its interest in obtaining WMD, but has made concerted efforts to acquire materials for this purpose; See, Kimberly McCloud and Matthew Osborne, ''WMD Terrorism and Usama Bin Laden,'' Center for Nonproliferation Studies Reports, updated March 14, 2001 <http://cns.miis.edu/pubs/reports/binladen.htm>.
3. Security Council Resolution 1540 (2004) was adopted unanimously by Algeria, Angola, Benin, Brazil, Chile, China, France, Germany, Pakistan, Philippines, Romania, the Russian Federation, Spain, the United Kingdom and the United States on 28 April 2004.
4. The Treaty on the Non-proliferation of Nuclear Weapons, Chemical Weapons Convention, and Biological Weapons Convention all include obligations for national implementation.
5. White House website, <www.whitehouse.gov/news/releases/2003/09/20030923-4.html>.
6. For the remainder of this report, the term WMD in reference to 1540 will be understood to include their means of delivery and related materials.
7. Chapter VII details potential coercive action by the Security Council ''with respect to threats to the peace, breaches of the peace, and acts of aggression.'' See Charter of the United Nations, <www.un.org/aboutun/charter/>.
8. By the terms of the Resolution, non-state actors are prohibited to develop, acquire, possess, manufacture, transport, or transfer WMD. For the purposes of this report, the term acquisition will be understood to include all such prohibitions.
9. In regard to the obligations of the Resolution, the word appropriate is used 13 times and the word effective is used 11 times.

10. Remarks by Ambassador Ashraf Jehangir Qazi to the Carnegie International Non-Proliferation Conference, June 21, 2004, available at <http://www.embassyofpakistan.org/news93.php>.
11. S/RES/1540 (2004) operative para. 7.
12. Security Council Resolution 1673 (2006).
13. These 84 states are identified based on publicly available indications of their capabilities. Additional states may be added to this list if they fit the criteria used to identify particular relevance for the Resolution.
14. Specific types of facilities include nuclear power reactors, research reactors and critical assemblies, conversion facilities, fuel fabrication plants, enrichment plants, and reprocessing plants.
15. Centers for Disease Control Office of Health and Safety Website, <www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4s3.htm >.
16. See Iris Hunger, "Confidence Building Needs Transparency: A summary of data submitted under the Bioweapons Convention's confidence building measures 1987-2003," The Sunshine Project, Sept. 2005.
17. Ibid.
18. Organization for the Prohibition of Chemical Weapons website, <www.opcw.org/basic_facts/html/bf_int_main_frame_cwc_opcw.html>.
19. "Report of the OPCW on the Implementation of the Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction in 2004," the Organization for the Prohibition of Chemical Weapons, Nov. 8, 2005, <www.opcw.org/docs/csp/csp10/en/c1004.pdf>.
20. While the OPCW also conducts verification of facilities which produce over 200 tons of discrete organic chemicals (DOCs) and over 30 tons of DOCs containing phosphorous, sulfur, or fluorine (PSF chemicals), the primary concern with such facilities is that the production of such chemicals on a large scale may have relevance to a state CW program rather than any risk of proliferation to non-state actors. DOC/PSF facilities are therefore not considered in this report. See Organization for the Prohibition of Chemical Weapons Web Site <www.opcw.org/basic_facts/html/bf_int_main_frame_cwc_opcw.html>.
21. See Nuclear Threat Initiative Web Site, Iran Profile <www.nti.org/e_research/profiles/Iran/1819.html> and Israel Profile </www.nti.org/e_research/profiles/Israel/Nuclear/index.html>.
22. Nuclear Threat Initiative Web Site, Libya Profile <www.nti.org/e_research/profiles/Libya/index.html>.
23. In spite of Taiwan's uncertain political status, it is considered as its own entity for the purposes of this study due to capabilities of relevance for 1540. Efforts to ensure that the proliferation potential for such capabilities are addressed will likely mirror the special arrangements made by the IAEA and OPCW regarding Taiwanese facilities. The successor states to the Socialist Federal Republic of Yugoslavia are considered separately. See Nuclear Threat Initiative Web Site, <www.nti.org/e_research/profiles/index.html >; GlobalSecurity.org Web Site, </www.globalsecurity.org/wmd/world/index.html >; Robert S. Norris and Hans M. Kristensen, "Global Nuclear Stockpiles, 1945–2002," *Bulletin of the Atomic Scientists* 58 (Nov./Dec. 2002), pp. 103–104, </www.thebulletin.org/

article_
nn.php?art_ofn = nd02norris >; Robert S. Norris and Hans M. Kristensen, "Nuclear Pursuits," *Bulletin of the Atomic Scientists* 59 (Sept./Oct. 2003), pp. 71–72, <www.thebulletin.org/article_nn.php?art_ofn = so03norris>.

24. In addition to the states previously indicated, these include Algeria, Armenia, Austria, Bangladesh, Belgium, Bulgaria, Canada, Chile, Colombia, Croatia, Cuba, Czech Republic, Denmark, Democratic Republic of Congo, Estonia, Finland, Georgia, Germany, Ghana, Greece, Hungary, Indonesia, Ireland, Italy, Jamaica, Japan, Lithuania, Malaysia, Mexico, Netherlands, Nigeria, Norway, Peru, Philippines, Portugal, Serbia and Montenegro, Slovakia, Slovenia, Spain, Syria, Thailand, Turkey, Uzbekistan, Venezuela, and Vietnam.
25. These states are Australia, Belarus, Belgium, Bulgaria, Canada, China, Finland, France, Germany, India, Iraq, Italy, Japan, the Netherlands, Norway, Poland, Russia, South Africa, Spain, Sweden, Switzerland, United Kingdom, and the United States.
26. Nuclear Threat Initiative website, </www.nti.org/e_research/profiles/index.html>.
27. While Czechoslovakia declared a defensive biological weapons program, its successor states, the Czech Republic and Slovakia have not done so. Because of the maintenance of BSL-4 facilities however they are still considered important for biological weapons proliferation; Source: Iris Hunger, "Confidence Building Needs Transparency: A summary of data submitted under the Bioweapons Convention's confidence building measures 1987–2003," The Sunshine Project, Sept. 2005.
28. Organization for the Prohibition of Chemical Weapons, Report on the Implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction in 2004, Nov. 8, 2005, pp. 6–7.
29. See Nuclear Threat Initiative Website <http://www.nti.org/e_research/profiles/index.html>. For Albania, see, "Bush Earmarks Funds to Destroy Chemical Warfare Agents in Albania," Press Release, United States Dept. of State, Oct. 21, 2004.
30. Ibid.
31. The states are Argentina, Australia, Brazil, Bulgaria, Canada, Chile, Czech Republic, Denmark, Finland, Georgia, Hungary, Ireland, Italy, Mexico, Netherlands, Nigeria, Norway, Poland, Romania, Singapore, Slovakia, Spain, Sweden, Switzerland, Thailand, Turkey, and Uzbekistan. Information provided by the American Organization for the Prohibition of Chemical Weapons, Report on the Implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction in 2004, Nov. 8, 2005, Annexes 4 and 5.
32. Sources: The American Association of Port Authorities and the United Nations Conference on Trade and Development Review of Maritime Transport, 2005.
33. See World Port Rankings 2003, The American Association of Port Authorities, available at </www.aapa-ports.org/pdf/WORLD_PORT_RANKINGS_2003.xls>.
34. These classifications are based largely on the categories used by the group of governmental experts on 1540 in their assessment matrices.
35. There are many examples of the transfer of WMD materials through various ports, including missile components from Russia to Iran (Nuclear Threat Initiative website, <www.nti.org/db/nistraff/1999/19990960.htm>), the shipment of a nerve agent precursor from South Korea to North Korea (Center for Nonproliferation Studies, *Asian Export*

Control Observer, Issue 4, Oct./Nov. 2004, pp. 7–8, <http://cns.miis.edu/pubs/observer/asian/pdfs/aeco_0410.pdf>), and the use of false end-use certificates to ship centrifuge components from the UAE to Libya (David Albright and Corey Hinderstein, "Uncovering the Nuclear Black Market: Working Toward Closing Gaps in the International Non-proliferation Regime, Prepared for the Institute of Nuclear Materials Management 45th annual meeting, July 2, 2004, </www.isis-online.org/publications/southasia/nuclear_black_market.html>).

36. This is done in the form of a question mark on that provision of the matrix.

37. It is important to note that this does not mean that these three states have not fulfilled any of their obligations under the Resolution as a whole; it is only a reference to the key obligations identified as particularly important for each individual state.

38. Final Document of the XIII Conference of Heads of State Government of the Non-Aligned Movement, Kuala Lumpur, Feb. 24–25, 2003, para. 84. See Non-Aligned Movement website <www.nam.gov.za/media/030227e.htm>.

39. See the Report Established Pursuant to Security Council Resolution 1540 (2004); April 26, 2006; Annexes VI–IX.

Appendix

1540 Assessment Matrix

OP 1 and related matters from OP 5, OP 6, OP 8 (a), (b), (c), and OP 10				
			State:	
			Date of Report:	
Did you make one of the following statements, or is your country a State Party to or Member State of one of the following Conventions, Treaties, and Arrangements?		**YES**	**If YES, indicate relevant information (e.g., signing, accession, ratification, entering into force).**	**Remarks (Information refers to the page of the English version of the report or an official website.)**
1	General statement on non-possession of WMD			
2	General statement on commitment to disarmament and nonproliferation			
3	General statement on non-provision of WMD and related materials to non-State actors			
4	Biological Weapons Convention (BWC)			
5	Chemical Weapons Convention (CWC)			
6	Nuclear Non-Proliferation Treaty (NPT)			
7	Comprehensive Nuclear Test Ban Treaty (CTBT)			
8	Convention on Physical Protection of Nuclear Material (CPPNM)			
9	Hague Code of Conduct (HCOC)			
10	Geneva Protocol of 1925			
11	International Atomic Energy Agency (IAEA)			
12	Nuclear Weapons Free Zone/Protocol(s)			
13	Other Conventions/Treaties			
14	Other Arrangements			
15	Other			

OP 2 - Biological Weapons (BW)						
					State:	
					Date of Report:	
Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Manufacture/produce					
2	Acquire					
3	Possess					
4	Stockpile/store					
5	Develop					
6	Transport					
7	Transfer					
8	Use					
9	Participate as an accomplice in a.m. activities					
10	Assist in AM activities					
11	Finance AM activities					
12	AM activities related to means of delivery					
13	Involvement of non-State actors in AM activities					
14	Other					

Note: AM = acquisition and manufacturing

OP 2 - Chemical Weapons (CW)						
					State:	
					Date of Report:	
Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Manufacture/produce					
2	Acquire					
3	Possess					
4	Stockpile/store					
5	Develop					
6	Transport					
7	Transfer					
8	Use					
9	Participate as an accomplice in AM activities					
10	Assist in AM activities					
11	Finance AM activities					
12	AM activities related to means of delivery					
13	Involvement of non-State actors in AM activities					
14	Other					

Note: AM = acquisition and manufacturing

OP 2 - Nuclear Weapons (NW)						
					State:	
					Date of Report:	
Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Manufacture/produce					
2	Acquire					
3	Possess					
4	Stockpile/store					
5	Develop					
6	Transport					
7	Transfer					
8	Use					
9	Participate as an accomplice in AM activities					
10	Assist in AM activities					
11	Finance AM activities					
12	AM activities related to means of delivery					
13	Involvement of non-State actors in AM activities					
14	Other					

Note: AM = acquisition and manufacturing

OP 3 (a) and (b) - Account for/Secure/Physically protect BW including Related Materials						
					State:	
					Date of Report:	
Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Measures to account for production					
2	Measures to account for use					
3	Measures to account for storage					
4	Measures to account for transport					
5	Other measures for accounting					
6	Measures to secure production					
7	Measures to secure use					
8	Measures to secure storage					
9	Measures to secure transport					
10	Other measures for securing					
11	Regulations for physical protection of facilities/materials/transports					
12	Licensing/registration of facilities/persons handling biological materials					
13	Reliability check of personnel					
14	Measures to account for/secure/ physically protect means of delivery					
15	Regulations for genetic engineering work					
16	Other legislation/regulations related to safety and security of biological materials					
17	Other					

OP 3 (a) and (b) - Account for/Secure/Physically protect CW including Related Materials						
					State:	
					Date of Report:	

	Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?	**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Measures to account for production					
2	Measures to account for use					
3	Measures to account for storage					
4	Measures to account for transport					
5	Other measures for accounting					
6	Measures to secure production					
7	Measures to secure use					
8	Measures to secure storage					
9	Measures to secure transport					
10	Other measures for securing					
11	Regulations for physical protection of facilities/materials/transports					
12	Licensing of chemical installations/entities/use of materials					
13	Reliability check of personnel					
14	Measures to account for/secure/ physically protect means of delivery					
15	National CWC authority					
16	Reporting Schedule I, II and III chemicals to OPCW					
17	Account for, secure, or physically protect old chemical weapons					
18	Other legislation/regulations controlling chemical materials					
19	Other					

OP 3 (a) and (b) - Account for/Secure/Physically protect NW including Related Materials						
					State:	
					Date of Report:	
Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Measures to account for production					
2	Measures to account for use					
3	Measures to account for storage					
4	Measures to account for transport					
5	Other measures for accounting					
6	Measures to secure production					
7	Measures to secure use					
8	Measures to secure storage					
9	Measures to secure transport					
10	Other measures for securing					
11	Regulations for physical protection of facilities/materials/transports					
12	Licensing of nuclear installations/entities/use of materials					
13	Reliability check of personnel					
14	Measures to account for/secure/ physically protect means of delivery					
15	National regulatory authority					
16	IAEA Safeguards Agreements					
17	IAEA Code of Conduct on Safety and Security of Radioactive Sources					
18	IAEA Database on Illicit Trafficking of Nuclear Materials and other Radioactive Sources					
19	Other Agreements related to IAEA					
20	Additional national legislation/regulations related to nuclear materials including CPPNM					
21	Other					

OP 3 (c) and (d) and related matters from OP 6 and OP 10 - Controls of BW including Related Materials						
					State:	
					Date of Report:	
Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Border control					
2	Technical support of border control measures					
3	Control of brokering, trading in, negotiating, otherwise assisting in sale of goods and technology					
4	Enforcement agencies/authorities					
5	Export control legislation in place					
6	Licensing provisions					
7	Individual licensing					
8	General licensing					
9	Exceptions from licensing					
10	Licensing of deemed export/visa					
11	National licensing authority					
12	Interagency review for licenses					
13	Control lists					
14	Updating of lists					
15	Inclusion of technologies					
16	Inclusion of means of delivery					
17	End-user controls					
18	Catch-all clause					
19	Intangible transfers					
20	Transit control					
21	Trans-shipment control					
22	Re-export control					
23	Control of providing funds					
24	Control of providing transport services					
25	Control of importation					
26	Extraterritorial applicability					
27	Other					

OP 3 (c) and (d) and related matters from OP 6 and OP 10 - Controls of CW including Related Materials						
					State:	
					Date of Report:	

Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?		**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Border control					
2	Technical support of border control measures					
3	Control of brokering, trading in, negotiating, otherwise assisting in sale of goods and technology					
4	Enforcement agencies/authorities					
5	Export control legislation in place					
6	Licensing provisions					
7	Individual licensing					
8	General licensing					
9	Exceptions from licensing					
10	Licensing of deemed export/visa					
11	National licensing authority					
12	Interagency review for licenses					
13	Control lists					
14	Updating of lists					
15	Inclusion of technologies					
16	Inclusion of means of delivery					
17	End-user controls					
18	Catch-all clause					
19	Intangible transfers					
20	Transit control					
21	Trans-shipment control					
22	Re-export control					
23	Control of providing funds					
24	Control of providing transport services					
25	Control of importation					
26	Extraterritorial applicability					
27	Other					

OP 3 (c) and (d) and related matters from OP 6, and OP 10 - Controls of NW including Related Materials						
					State:	
					Date of Report:	

	Does national legislation exist which prohibits persons or entities to engage in one of the following activities? Can violators be penalized?	**National legal framework**		**Enforcement: Civil/criminal penalties and others**		**Remarks**
		YES	**If YES, indicate source document of national implementation law.**	**YES**	**If YES, indicate source document.**	
1	Border control					
2	Technical support of border control measures					
3	Control of brokering, trading in, negotiating, otherwise assisting in sale of goods and technology					
4	Enforcement agencies/authorities					
5	Export control legislation in place					
6	Licensing provisions					
7	Individual licensing					
8	General licensing					
9	Exceptions from licensing					
10	Licensing of deemed export/visa					
11	National licensing authority					
12	Interagency review for licenses					
13	Control lists					
14	Updating of lists					
15	Inclusion of technologies					
16	Inclusion of means of delivery					
17	End-user controls					
18	Catch-all clause					
19	Intangible transfers					
20	Transit control					
21	Trans-shipment control					
22	Re-export control					
23	Control of providing funds					
24	Control of providing transport services					
25	Control of importation					
26	Extraterritorial applicability					
27	Other					

OP 6, 7 and 8 (d) - Control lists, Assistance, Information				
			State:	
			Date of Report:	
Can information be provided on the following issues?		**YES**		**Remarks**
1	Control lists - items (goods/ equipment/materials/technologies)			
2	Control lists - other			
3	Assistance offered			
4	Assistance requested			
5	Assistance in place (bilateral/plurilateral/multilateral)			
6	Information for industry			
7	Information for the public			