1540 COMPASS

Fall 2013 — Issue 4

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1540 Compass

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A journal of views, comments, and ideas for effective implementation of UN Security Council Resolution 1540 to prevent WMD proliferation and terrorism by non-state actors.

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The Compass welcomes letters and articles from all concerned with 1540 implementation. Articles should be 1,500-2,000 words in length and written in English. Digital photographs should be submitted in their native format, typically JPEG; scanned photographs should be saved in a lossless format like TIFF or BMP. Send submissions to compass@cits.uga.edu.

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From the Editor:

I would like to draw readers' attention to a UN Security Council document that is relevant to our 1540 Compass' raison d'être and must not be missed by anyone who follows UNSCR 1540 (2004). Released last May, it is the twelfth program of work of the 1540 Committee, covering the period from June 1, 2013 to May 31, 2014. This program has special significance for an international journal like the Compass, which exists to promote the objectives set forth in resolution 1540. The work program supplies a roadmap for content selection, offers far-reaching suggestions, and solicits innovative ideas from 1540 practitioners. I urge you to provide the input the Committee requests.

How can the Compass fulfill its mission in the months to come, leading up to the ten-year anniversary of the resolution? The program of work sets the goal of universal reporting by the end of 2014. The field is open to potential contributors who can explain why some states have not yet submitted reports a decade hence, what needs to be done to encourage them to undertake this endeavor, and what the international community can do to help. I invite anyone with insight into these questions to submit essays for publication.

Now about assistance, the buzzword of the program of work and its overarching theme. The document discusses country-specific visits as a tool to facilitate assistance. It spotlights the need to coordinate assistance programs, reviews current procedures for processing assistance requests and offers of assistance, identifies ways to make both offers of and requests for assistance more effective, and considers the possible use of regional approaches to assistance requests, alongside other matters.

One theme comes through with blinding clarity: the need for a multidisciplinary methodology for managing requests from would-be recipients and responses from donors. Looking back from the vantage point of this current issue, Compass no. 4, there are grounds to believe that this journal can contribute. I challenge you to do so.

Finally, the Committee's work program demands unconventional thinking. What quantitative measures would indicate success or failure within the terms of resolution 1540 and related resolutions? How can we make the implementation process genuinely transparent and subject to assessment? Any volunteers? Issue no. 5 will be released in January 2014. Please step up!

IGOR KHRIPUNOV
EDITOR, 1540 COMPASS
CENTER FOR INTERNATIONAL TRADE & SECURITY

Op-Ed: A Global Call to Arms Control

James R. Holmes
DEFENSE ANALYST

These are the times that try men's souls — if you work for the U.S. Defense Department, at any rate. This week, to beat the furlough blues, the Naval Diplomat morphs into his alter ego ... the Nonproliferation Diplomat! Two or three times per year I co-edit the 1540 Compass, a new-ish journal based at the University of Georgia Center for International Trade and Security, where I spent five happy years before decamping to the Naval War College. It's good to still be a Bulldog.

The Compass has a practical bent, along with a seemingly narrow-gauge outlook. It takes its inspiration from UN Security Council resolution 1540 (UNSCR 1540), a measure passed in 2004 that requires UN member states to enact stringent export controls, meaning the laws and regulations governments use to restrict the traffic in the makings of chemical, biological, radiological, and nuclear weapons. Of equal concern are the delivery systems — chiefly ballistic missiles — that hostile governments, terror groups, and other evildoers could employ to strike at cities and other soft targets with unconventional payloads.

Far from being a niche publication, then, it turns out that the Compass is part of an enterprise of impressive sweep. Contributors explore what amounts to an effort to construct and maintain a universal multinational coalition to thwart weapons proliferation.

This is no easy feat. UNSCR 1540 is an odd beast as UN resolutions go. The United Nations typically acts under Chapter VI of the UN Charter, recommending that governments take this measure or that. Once in a while it acts under Chapter VII, directing some ne'er-do-well like Saddam Hussein or Kim Jong-Il to cease and desist from doing something inimical to international peace and security. UNSCR 1540 appeared under Chapter VII as well. But this time, rather than narrowcast its directive, the council made it mandatory for all member governments.

In effect, then, fifteen Security Council members ordered nearly two hundred countries to change their domestic laws. Whoa; that's enough to set a Jeffersonian democrat's nerves a-jangling. Nonetheless, most governments have gamely set about trying to comply with the UN mandate.

The process underscores several things about coalition-building and maintenance. For one thing, such arrangements seldom fall into place on command. By my count, nine years have elapsed since 2004, but few UN members have complied fully with the resolution. That's not to fault the laggards, merely to point out that, even for the Security Council, issuing a ukase doesn't automatically make it job one for national governments.

Domestic politics commonly intrudes, for example. Political leaders have manifold responsibilities for the health, welfare, and morals of their citizens, and finite resources to execute those responsibilities. And in countries with popular government, voters cast their ballots mostly on such basic matters, not on seemingly remote and abstract menaces such as proliferation. Export controls are one competing requirement among many. UNSCR 1540, arms-control covenants, and other statements of common purpose are important, but not all-important.

Moving outward into the international domain, mutual interests, social and cultural affinities, and leading states' capacity to finance an arrangement or strong-arm partners into it represent the glue that binds together multinational enterprises.

Everyone agrees that proliferation is a bad thing. Negligence could bring about a doomsday scenario — a nuclear, biological, or chemical 9/11 or Mumbai attack. But such an assault has never yet taken place. That's a good thing, but it does leave the threat in the realm of the hypothetical. It takes artful statecraft to summon forth popular support for open-ended endeavors like combating the spread of mass-destruction weaponry — especially for countries that manufacture no hardware or substances useful for building unconventional arms. It's far from a foregone conclusion that export controls will remain at the forefront of national agendas, despite universal acclaim for the ideal of nonproliferation.

> "It takes artful statecraft to summon forth popular support for open-ended endeavors like combating the spread of mass-destruction weaponry."

As far as sociocultural affinities ... fuggedaboutit. A consortium encompassing the United States and the Maldives is about as diverse as it gets. That leaves positive and negative inducements. Sure, the Security Council can coerce under Chapter VII, but as you can imagine, a perennial topic for 1540 Compass contributors is how the international community can pool resources to help everyone meet the standard. Carrots usually yield better results than sticks.

This is a question not just of finances but of technical expertise. Individual governments have offered assistance to, say, countries that are exploring nuclear power but haven't yet caught up on the security arrangements necessary to keep lethal materials out of the wrong hands. A standing 1540 Committee helps coordinate efforts to put the resolution into effect. And a veritable alphabet soup of regional and global organizations that go by such acronyms as IAEA, NSG, G-8, and EU has gotten into the export-control act in various ways.

Whither UNSCR 1540? My guess is that coalition-builders will find it easier rallying a standing, globe-spanning consortium to fight proliferation than they will uniting a coalition to safeguard freedom of the seas. The repercussions of failure could be cataclysmic if 1540 falls short, whereas Captain Jack Sparrow poses more of a nuisance to shipping than a mortal danger. The former concentrates minds, the latter less so.

Nevertheless, it's a safe guess that the 1540 regime will exhibit the same uneven, patchwork character found in maritime coalitions. Nonproliferation officials and advocates have plenty of work to occupy them.

This text originally appeared in The Diplomat on July 15, 2013, (http://thediplomat.com/the-naval-diplomat/2013/07/15/a-global-call-to-arms-control/). Reproduced with permission from the author.

1540 COMPASS

DISCUSSION FORUM

Please send letters for the Discussion Forum to Editor in Chief Igor Khripunov at i.khripunov@cits.uga.edu. Letters should not exceed 500 words.

OPCW'S CONTRIBUTION TO THE 1540 COMPASS

In the 16 years since its establishment, the Organization for the Prevention of Chemical Weapons (OPCW) has successfully overseen the destruction of over 80 percent of the world's declared stockpiles of chemical weapons and is steadily moving towards a "global zero" in chemical weapons.

This progress brings into sharper relief the long-term mission of the Organization, which is to ensure that chemical weapons will never reemerge and that states will continue to enjoy the privileges of their membership in terms of assurance of assistance, protection against chemical weapons, and international cooperation in the peaceful uses of chemistry. The Organization will therefore make the transition to an international body that makes the Chemical Weapons Convention a permanent barrier against chemical weapons, including against new threats from unconventional sources.

Coming at this critical time for the OPCW, the Third Special Session of the Conference of the States Parties to the Chemical Weapons Convention to Review Its Operation, held in April in The Hague, was a complete success. The role of the OPCW in the context of the global fight against terrorism has found adequate support from states, including in the context of OPCW's collaboration with other international organizations, including the United Nations.

OPCW member states have declared their determination to increase efforts to guard against the possible hostile use of toxic chemicals by non-state actors such as terrorists. The Conference has welcomed the steps taken by the Technical Secretariat to strengthen its ability to respond to requests for assistance in case of actual or threatened uses of chemical weapons and to investigate alleged uses of chemical weapons, either in support of the UN secretary-general's mechanism or independently.

The Conference took cognizance of the relevant UN resolutions on combating terrorism and, with a view toward enabling states that seek international cooperation in the context of national, regional, and subregional efforts, underscored the need for greater interaction and coordination. This declaration strengthens the ability of the OPCW to enhance its cooperation in the context of implementing UNSCR 1540 and other internationally agreed decisions and strategies, which has been going on for several years.

The Conference has also supported the work of the OPCW Open-Ended Working Group on Terrorism, which offers a forum for discussions relevant to the implementation of the Convention as a means and a model for the fulfilment of obligations arising from UNSCR 1540. The substantive treatment of these issues by the Review Conference augurs well for international cooperation in the context of counterterrorism.

Ahmet Üzümcü
DIRECTOR GENERAL
ORGANIZATION FOR THE PROHIBITION OF CHEMICAL WEAPONS

KYRGYZSTAN: A VALUABLE CONTRIBUTION FROM CIVIL SOCIETY

One of the topics covered by previous issues of the 1540 Compass is the role of civil society. Kyrgyzstan represents a good example of how government institutions and non-commercial organizations can jointly address a wide range of security-related problems. A case in point is the involvement of the Center for Nonproliferation and Export Control in Kyrgyzstan in developing and promoting a national action plan in support of UNSCR 1540. Kyrgyzstan was the first among the former Soviet republics to finalize the plan and the second to adopt it.

The Center acted as a clearinghouse for proposals, suggestions, and ideas submitted by all members of the specially established working group, as well as an equal partner with government institutions. All parties involved cooperated to draft the plan. But adopting a plan does not mean the end of our mission. Orderly implementation of the plan is a challenge, and the Center is in a position to see to it that all major players in the country committed to implementing it are fulfilling the obligations assigned to them in good faith.

Timur Cherikov
CENTER FOR NONPROLIFERATION AND EXPORT CONTROL
KYRGYZSTAN

CIVIL SOCIETY A KEY CONTRIBUTOR TO THE IMPLEMENTATION OF UNSCR 1540 IN RESEARCH

The "UNSCR 1540 Civil Society Forum—Opportunities for Engagement" held in Vienna this January was an impressive demonstration of the various ways civil society can support national and international efforts to implement UNSCR 1540. The scope of the resolution covers a very sensitive and complex area of concern, namely "establishing appropriate controls over related materials" in order to "prevent the proliferation of nuclear, chemical and biological weapons and means of their delivery."

Scientific research is progressing faster than ever while paving the way for wider distribution of—and easier access to—new technologies, new materials, and knowledge that can be used to pro-

duce nuclear, chemical, and biological weapons and their means of delivery. At the same time, classical nonproliferation safeguards (e.g., export controls) and anti-terrorism safeguards (e.g., information-security procedures and select-agents lists based on species definitions) are becoming increasingly inefficient and actually difficult to apply at the research level. New legislation takes time to adopt, and is often overtaken by scientific advances by the time it enters into force. Even when legislative measures such as export controls are in place, they often are not applied rigorously out of fears that they will impair public health, humanitarian efforts, fundamental freedoms and rights, or economic prosperity.

In order to introduce nonproliferation and anti-terrorism safeguards into scientific research, it is important to recognize the vital role that research ethics plays in dealing with societal concerns. And ultimately, research ethics is based almost fully on the work of civil society.

Over the past ten years, I and many other experts from civil society have acted as advisors in an effort to establish a comprehensive ethics oversight framework covering all research financed by the European Commission. This framework includes dual-use and weapons-of-mass-destruction concerns. As a result, civil-society experts now routinely assess biosecurity and other concerns relevant to the successful implementation of UNSCR 1540 in research funded by the European Commission. Recruitment of multi-disciplinary experts to carry out this sensitive oversight task helps reconcile security interests with other legitimate concerns, such as public-health interests and the freedom of scientific inquiry.

Because citizens tend to take a dim view of the contemporary landscape, in which the "securitization of society" is progressing, it might be difficult to promote a "culture of security" without considering worries about infringements on fundamental freedoms. In order to find solutions that balance all these concerns, we need to find a common framework. Research ethics should be the foundation of this common framework. The underlying principle in the new European research program is "Responsible Research and Innovation." This concept underscores both the significant role of ethics and the need for civil society to play an active part in implementing UNSCR 1540. Due to its integrative and inclusive approach, it offers a real opportunity to provide lasting and tailored solutions to the problems outlined in UNSCR 1540.

Johannes Rath
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CHAIRMAN OF THE 2013 ETHICS REVIEW PANEL FOR SECURITY RESEARCH IN FRAMEWORK PROGRAM
CHAIRMAN OF THE WORKING GROUP ON MALEVOLENT USE AND DUAL USE IN RESEARCH
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DEVELOPING THE NUCLEAR SECURITY CURRICULUM IN MOROCCO: CHALLENGES AND OPPORTUNITIES

The use of radioactive sources and nuclear materials is increasing worldwide and remains a security challenge. Many countries are working to make sustainable improvements in nuclear security through human-resource development. The population of skilled scientists and engineers in nuclear science and technology is educated in a multidisciplinary academic environment, and the people involved are typically concerned about designing a specific line of instruction and research in nuclear security. Several universities already offer academic programs in nuclear security, while others have expressed an interest in providing such programs in the future.

The National School of Mineral Industry (ENIM), a graduate-level engineering school, offers a number of curricula in science and technology, including nuclear energy and energy management modules, and is continuously launching new education programs in conjunction with the employment sector. ENIM, the National Office of Electricity, and the National Nuclear Center of la Maâmora (CENM), which houses a research reactor, have complementary missions and are all affiliated with the Ministry of Energy, Mines, Water, and Environment. At the national level, the introduction of nuclear power is a long-term option, while the research-reactor capabilities and associated laboratories of CENM and the laboratories of the National Center for Radioprotection constitute the tools for understanding and learning nuclear techniques, safety, radiation protection, and security issues.

The introduction of a nuclear-security curriculum consistent with ENIM's mission and organization represents an opportunity to upgrade the existing education programs. Faculties can revise their education and training curricula to place more emphasis on training a new generation of qualified experts in nuclear security. Such programs should provide sustainable knowledge and foster an improved nuclear security culture at the policy and management levels.

Building an appropriate curriculum remains challenging, as its purpose is to enhance attendees' understanding of technical, policy, and regulatory challenges associated with nuclear security. The establishment of a dedicated nuclear-security infrastructure supported at the national and international level is necessary. Nuclear security expertise can be developed through communication between the nuclear-security support infrastructures in nuclear newcomer countries and countries with more established nuclear power programs. This type of cooperation should enable actors just entering the stage to join the professional safety and security networks of experts that are connecting to share knowledge and experience. Progress for safety and security will be achieved as mutual learning promotes excellence in nuclear security.

Oum Keltoum Bouhelal
PROFESSOR, ENIM ENGINEERING SCHOOL
RABAT, MOROCCO

GEORGIA: NONPROLIFERATION CHALLENGES

I'd like to express my feelings after the Roundtable on WMD and Dual-Use Expertise/Knowledge Redirection and Prevention, which was organized by the Science and Technology Center in Ukraine in collaboration with the UN Office of Disarmament Affairs (UNODA). The roundtable was held in Kiev, Ukraine, on April 17-18, 2013. I might be considered a "former Soviet weapons scientist," having worked at the Georgian Anti-Plague Station (now the National Center for Disease Control and Public Health, or NCDC) for 32 years.

At the time the U.S. Defense Department's Cooperative Threat Reduction CTR program started in Georgia, I was head of the Department of Bioterrorism Threat Reduction at NCDC, and was actively involved in the center's work. We at the NCDC received new possibilities to work in the field of especially dangerous infections, to which we have devoted our expertise. We have borne witness to the benefits that aid from Western countries has brought to our nation, from the dismantlement of WMD production facilities to the renovation of the NCDC, which included for-

tifying the Especially Dangerous Infections Department as well as constructing a new Central Reference Laboratory.

I must also mention the work of international organizations like the International Science and Technology Center, the Science and Technology Center of Ukraine, and the Civilian Research and Development Foundation. Research grant programs with these organizations were beneficial both for scientists and for different fields of basic and applied sciences.

More recently, a newly established regional CBRN Center of Excellence will be an additional mechanism for improving biosafety and biosecurity, and for enhancing collaboration within the region. Furthermore, there are grounds to believe that the new government in Georgia will be able to correct some past political mistakes made by the country's authorities so that the efforts of agencies working in the field of WMD nonproliferation could be more effective and fruitful.

Georgia's experiences are beneficial in that they promote sharing effective practices related to implementation of nonproliferation programs and international treaties such as the Biological and Toxin Weapons Convention, and UN Security Council resolution 1540 (2004), as well as increasing awareness of the risk of "brain drain" proliferation. Because the collapse of the Soviet Union increased the risk of terrorists' acquiring scientists' knowledge and skills, or of countries seeking to produce WMD, states must continue to pay attention to this issue and continue to engage former weapons scientists, fostering their nonproliferation education and training through workshops, seminars, mentoring, and expert placements and fellowships.

Lela Bakanidze, Professor, Ph.D., RBP
PRESIDENT, GEORGIAN BIOSAFETY ASSOCIATION

UNICRI AND CBRN SECURITY CENTERS

It is with pleasure that I use this space to provide updates on the European Union CBRN Risk Mitigation Centers of Excellence (CoE) Initiative since the publication of the article on the Initiative that appeared in issue no. 2 of this journal.

The CBRN CoE is a very challenging EU initiative jointly implemented by the UN Interregional Crime and Justice Research Institute (UNICRI) and the European Commission's Joint Research Center. The Initiative itself falls under the aegis of the European Commission's Directorate General for Development and Cooperation—Europe Aid and the European External Action Service.

Spanning several geographic regions (the African Atlantic coast, Central Asia, Eastern and Central Africa, the Gulf Cooperation Council countries, the Middle East, North Africa, Southeast Asia, Southeastern Europe, the Southern Caucasus, Moldova, and Ukraine), each with a regional secretariat, this Initiative seeks to boost cooperation at the national, regional, and international levels while developing a common and coherent CBRN risk-mitigation policy.

As a guiding principle, the Initiative intends to generate genuine ownership of policy and implementation by national bodies. Countries' political commitment and sense of ownership are fundamental for the medium- and long-term sustainability of the Initiative.

In addition to its focus on local ownership, the Initiative aims to strengthen and reinforce collaboration and coordination with leading regional and international organizations such as the International Atomic Energy Agency; the 1540 Security Council Committee; the UN Office of Disarmament Affairs, the World Health Organization, the Organization for the Prohibition of Chemical Weapons, the World Customs Organization, the Biological Weapons Convention Implementation Support Unit, INTERPOL, EUROPOL, the Arab League, the African Union, and the Association of Southeast Asian Nations. All of these bodies play a role in what can be referred to as the CBRN CoE network.

At present, 31 projects have been undertaken through the EU Initiative (http://www.cbrn-coe.eu/Projects.aspx). Most commenced in January 2013. These projects, valued at approximately €25 million in total, are being implemented by consortia of diverse national and international organizations, including the European CBRNE Centre at Umeå University, Sweden; France Expertise Internationale; the James Martin Center for Nonproliferation Studies, USA; the UN Office on Drugs and Crime; the German Office of Economics and Export Control, Germany; and the National Coordinator for Counterterrorism and Security, the Netherlands.

With this in mind, I would like to clarify that, with reference to Ms. Lina Grip's article in Issue 3 of this journal, the European Union has allocated €100 million to the EU CBRN Risk Mitigation Centers of Excellence Initiative and not to UNICRI, whose role in the Initiative is limited to that of a joint implementing partner.

Francesco Marelli
UNICRI, CBRN RISK MITIGATION
AND SECURITY GOVERNANCE PROGRAM

COUNTERING NUCLEAR TERRORISM

A major function of the Ukraine-based "LEX" Center is to bring together all nuclear counterterrorism stakeholders and identify possible mechanisms for across-the-board coordination. The Sixth Forum on Countering Nuclear Terrorism, held in April 2013 in Kiev, attempted to combine a conceptual framework with the technical content. In other words, organizers of the forum projected, on the one hand, a vision of the legal framework of nuclear security, the nuclear-terrorism threat environment, and relevant programmatic inputs from the International Atomic Energy Agency and the Nuclear Security Summits. On the other hand, participants reviewed technical innovations which should help address emerging challenges in the way of preventing nuclear terrorism and dealing with possible consequences. One general recommendation that emerged at the Forum was to continue this synergistic approach, whereby the policy side and state-of-the-art technologies constitute the two sides of the same coin.

To this effect, several government institutions and private companies informed attendees about innovative technologies and work in progress that could help protect nuclear materials, pre-empt possible acts of nuclear terrorism, and deal effectively with the consequences of incidents that do occur. As a follow-up, the LEX Center is planning an event next year, prior to the 2014 Nuclear Security Summit at The Hague, which will compile a more comprehensive picture of our technological capability to address the threats of nuclear terrorism. We will appreciate offers of partnership and support from all interested parties in this very important endeavor.

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Putting the R in 1540

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INTRODUCTION

The start of the twenty-first century has witnessed a rapid development of conventions, agreements, and institutions aimed at countering threats to nuclear security. However, such evolution has unfolded in a fragmented way. The international community has been responding to, rather than preventing, accidents and crises. This approach has led to critical gaps in nuclear security. A number of inconsistencies are evident, such as the lack of a set of unambiguous definitions, while overlaps result in duplication of effort. This article examines resolution 1540 to determine whether radioactive, non-nuclear materials fall within its remit. Surveying relevant international-law instruments (the declaratory level) and the functions of key organizations (the empirical level) will help identify the extent to which these materials are addressed and draw appropriate lessons. Given the nature of potential threats and their consequences, the analysis focuses on the internationally binding measures taken so far. Also, looking at how the 1540 Committee has exercised its mandate will reveal whether the security of radiological materials has been addressed.

Conventional wisdom has it that nuclear-security threats include the possibility of non-state actors' acquiring nuclear weapons, fissile materials to manufacture improvised nuclear devices (INDs), or radioactive materials to make radiological dispersal devices (RDDs) or emission devices (REDs). Dispersion of radioactive material, either through sabotage of a facility or while in transit, is another possibility. These four scenarios encompass what is understood under the catchy label "nuclear terrorism." However, while the first two situations are clearly dealt with in 1540, the last two are not, at least on paper.

THE DEVIL IS IN THE DETAILS

By adopting resolution 1540 under Chapter VII of the UN Charter, the Security Council came close to designing a universal, binding framework for national legislation to prevent the spread of chemical, biological, radiological, and nuclear (CBRN) weapons to non-state actors. Resolution 1540 obliges all states to enact and implement wide-ranging measures to ward off illicit access to chemical, biological, and nuclear weapons and their delivery means, and to establish domestic controls over related materials. However, radiological materials are missing from the language of the resolution. The term "related materials" refers to those "materials, equipment and technology covered by relevant multilateral treaties, or included in national control lists, which could be used for nuclear, chemical and biological weapons and their delivery means." It may seem odd that the security of

Abandoned military hospital in Antwerp, Belgium. An orphaned radioactive source.

radioactive materials, such as regulated sealed or unsealed sources or "orphan" sources, is not addressed in a resolution whose aim is to prevent hostile actors from acquiring unconventional weapons and sensitive materials. But the Security Council could not rule on this issue for a number of reasons, not least because no existing treaty covers radiological weapons, as opposed to nuclear, chemical, and biological ones.

An additional mystery stems from the definition of WMD within the United Nations. In 1977, the General Assembly adopted resolution 32/84, defining WMD as encompassing all CBRN weapons. The resolution conformed to a 1948 declaration from the Commission on Conventional Armaments. The preamble to a 1992 declaration from the president of the Security Council rededicated the United Nations to preventing proliferation of all types of WMD (S/23500). This being the case, it is worth surveying relevant international instruments pertaining to nuclear terrorism. This will enable stakeholders to understand the role played by radioactive, non-nuclear, materials in the international legal texts.

THE DECLARATORY LEVEL

Only a few international legal instruments address the nexus between non-state actors and unconventional weapons.

Neither the 1980 Convention on the Physical Protection of Nuclear Material, which was negotiated under International Atomic Energy Agency (IAEA) auspices and entered into force in 1987, nor the amended version from 2005, which has yet to take legal effect, mentions radioactive material other than nuclear material. They cover only nuclear material used for peaceful purposes, which, according to the Convention, includes weapons-grade plutonium and uranium.

The 1997 UN International Convention for the Suppression of Terrorist Bombings, in force since 2001, obligates states to criminalize uses of "explosives and other lethal devices." This definition includes weapons or devices that can cause death, injury, or damage through the release of "toxic chemicals, biological agents or toxins or similar substances or radiation or radioactive material." The 2005 UN International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) covers a series of acts that are unlawful, intentional, and driven by the intent to cause death or injury to people, property, or the environment. Such conduct involves the making, possession, or use of INDs, RDDs, or REDs, and damage to nuclear facilities. The Convention covers nuclear material meant for peaceful and military purposes. In addition, it urges states to adopt domestic measures that embrace IAEA recommendations and standards, thereby ensuring the protection of radiological materials. ICSANT's definition of radioactive materials as encompassing "nuclear material and other radioactive substances" resembles the IAEA's definition of nuclear security, since it deals with both nuclear and non-nuclear radioactive materials.

The 2005 Protocol to the Convention for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf and the 2005 Protocol to the Convention for the Suppression

of Unlawful Acts against the Safety of Maritime Navigation, both in force since 2010, mention acts involving the use of any explosive, CBRN materials, and weapons. The International Maritime Organization (IMO) is the relevant authority and secretariat for both instruments.

The 2010 Convention on the Suppression of Unlawful Acts Relating to International Civil Aviation (the Beijing Convention), which has not entered into force, criminalizes acts using civil aircraft to discharge or illicitly transport "nuclear, chemical and biological weapon or explosive, radioactive or similar substances." The International Civil Aviation Organization (ICAO) acts as the treaty's depository and secretariat. The 1540 Committee interacts on various levels with both the ICAO and the IMO.

Given that the majority of hard-law instruments include the "R" part of CBRN in their scope, it is puzzling that 1540, as an international-law instrument, does not follow suit. Be that as it may, it is worth analyzing how the "R" is dealt with at the practical level.

THE EMPIRICAL LEVEL

Given its scope and expertise, the IAEA is perhaps the most important organization that deals with nuclear-security issues. Following 9/11, the IAEA created the Office of Nuclear Security, which, under the Department of Nuclear Safety and Security, is tasked with coordinating activities in keeping with the priorities set forth in the triennial Nuclear Security Plan. The Plan's objective for 2010-2013 is "to contribute to global efforts to achieve worldwide, effective security wherever nuclear or other radioactive material is in use, storage or transport, and of associated facilities…." Also, the current Plan states that "the risk that nuclear or other radioactive material could be used for malicious purposes is regarded as a serious threat to international peace and security." Much like the IAEA, the UN Office on Drugs and Crime (UNODC) deals with both nuclear and other radioactive materials as it helps states lay the groundwork for ratifying international legal instruments pertaining to CBRN, putting in place domestic legislation implementing the provisions of international treaties, and organizing workshops on nuclear-security issues.

UNICRI's efforts center on exchanging knowledge about lessons learned and best practices in areas such as border controls, protection of CBRN materials, and information-sharing on illicit trafficking. Jointly with the European Commission's Joint Research Centre, UNICRI has supported Europe in setting up EU CBRN Centers of Excellence since 2010. These initiatives are meant to reinforce national CBRN policies and maximize their capabilities while enhancing inter- and intra-state coordination. As an international police organization, Interpol carries out activities in coordination with the IAEA. The two organizations share data, expertise, and analysis on nuclear and radiological threats.

Given that the majority of hard-law instruments include the "R" part of CBRN in their scope, it is puzzling that 1540, as an international-law instrument, does not follow suit.

This brief survey of the functions of key international organizations shows that the IAEA plays a leading role. As additional evidence, the IAEA currently leads the UN Counter-Terrorism Implementation Task Force Working Group on Preventing and Responding to WMD Terrorist Attacks, which includes Interpol, UNICRI, the UNODC, the IMO, the ICAO, and the 1540 Experts Group.

Notwithstanding the attention-grabbing yet unclear use of acronyms and the blurred division of labor, all key international and regional organizations partnering with the 1540 Committee specifically deal with both nuclear and radiological materials. So, what about the Committee?

C-B-(R)-N AND THE COMMITTEE

In 2006, 2008, and 2011, the Committee submitted reports to the Security Council. From a quantitative standpoint, the first report mentions radioactive sources only four times. While the 2008 report makes six references, in 2011 the "R" is mentioned fourteen times. References have been growing incrementally. However, the controversy over whether these materials are really addressed persists. Resolution 1810

(2008) required a comprehensive review to provide findings and recommendations for improving the effectiveness of the Committee. The review scores poorly on this dilemma, as there are no specific references to "R" issues. Resolution 1977 (2011) recommended looking into various modifications to the Committee's working methods and structure. The Committee submitted its annual review of progress made by states in 2011, alongside with an assessment of forward-looking perspectives and steps that should be taken. Again, the "R" is not present. However, as resolution 1977 instructs the Committee to "conduct a comprehensive review on the status of implementation of resolution 1540 both after five years and prior to the renewal of its mandate, including, if necessary, recommendations on adjustments to the mandate," "R" issues will probably be debated. A further point deserves attention. 1540 experts have included language and measures in the national matrices that apply to a wide range of radioactive, non-nuclear materials, including those that could potentially contribute to an "R" weapon. One should look not only at the correspondence and reports to the Security Council, but also, at the Committee-approved matrices for each UN member state.

Should one conclude, then, that 1540 does not deal with "R" issues? As the lacuna in the text of UNSCR 1540 is somewhat filled by the praxis, the short answer is no. Even though not directly specified in its mandate, the Committee is implicitly involved in the "R" field. The work that has been done, the 1540 national matrices that have been reviewed, and the progress that has been tracked could have not been achieved without coordination with the wide range of international, regional, and national organizations that have partnered with the Committee. Events and workshops on nuclear and radiological security feature 1540 experts in their participant lists. Moreover, some UNSCR 1540 sponsored workshops feature presentations on radiological terrorism. Taken together, this interactive, win-win process between different stakeholders ensures that the 1540 Committee and its group of experts are informed on and in practice address "R" issues.

Taken together, this interactive, win-win process between different stakeholders ensures that the 1540 Committee and its group of experts are informed on and in practice address "R" issues.

CONCLUSION

The analysis provided in this article shows an evident conflict between the absence of any reference to radiological materials in the text of an important international-law instrument, as exemplified by UNSCR 1540, and the actual coverage of these materials at the operational level. Recent crises and events add urgency to this issue. The 2011 Fukushima accident reminded the world of the serious consequences of high-level radioactivity. The 2012 Seoul Nuclear Security Summit demonstrated that the international community is concerned about the safety and security of high-risk radiological materials. The recent attacks in Boston and Washington prove that acts of terrorism can occur without the use of nuclear weapons or fissile materials, but with easy-to-get pressure-cookers and poisons. The reality confirms that what is easy will be done, and what is difficult is less likely to happen. The upcoming 2014 Nuclear Security Summit in the Netherlands would be a good place to raise the issue of the safety and security of high-risk radioactive materials.

The need to consider the "R" and making it part of a coherent nuclear security equation is evident. Even if stakeholders seem to be moving only timidly from their focus on nuclear material to embrace the whole range of asymmetric threats, explicit engagement and outreach by the Committee and to the Committee should be encouraged. As a result, interpreting "R" as part of the 1540 mandate would both help clarify the scope of nuclear security and add legal and political heft to what still is a non-binding field for states, thus ultimately laying the groundwork for global nuclear-security governance.

Implementation challenges for small and developing countries

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Small and developing countries face a common challenge in addressing the requirements established by UNSCR 1540. They often lack resources and institutional capacity, and face competing foreign and domestic priorities that relegate nonproliferation to the bottom of national agendas. These two categories of states are likely to struggle in developing and maintaining effective border controls and enforcement mechanisms to combat illicit trafficking and brokering in items related to weapons of mass destruction (WMD). They are also apt to struggle in developing legislation and implementing national controls that would restrict the export, transit, transshipment, and re-export of WMD-related items.

Although many developing and small nations lack production capacity for WMD-related materials, proliferators have used unsuspecting states, including countries that are not considered traditional suppliers, as part of their networks. They recognize that transfers to and from such locations may not be scrutinized and that these states often lack export, transit, and transshipment controls on WMD-related materials and goods. As more and more supplier states and larger developed countries tighten controls, states that are not traditional suppliers may be exploited as proliferation hubs. Iran's use of free-trade zones in the United Arab Emirates to secure nuclear components illicitly is but one example.

"[P]roliferators have used unsuspecting states, including countries that are not considered traditional suppliers, as part of their networks."

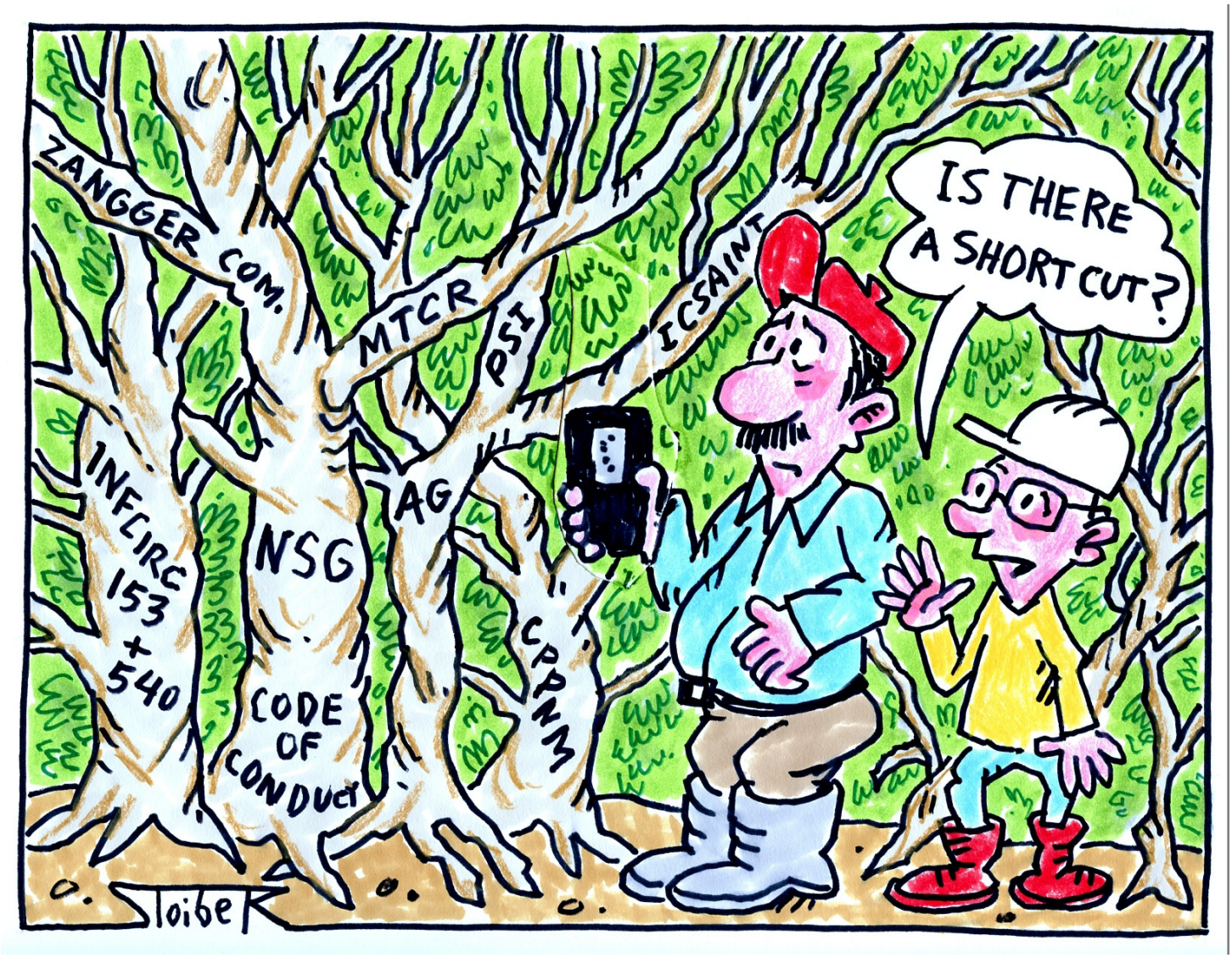
Some developing countries have also developed trade-friendly policies without considering the security risks. Developing countries are anxious to promote free-trade zones, technology centers, and trade-facilitation services that offer the allure of prosperity, but that are also ripe for exploitation by proliferators and others intent on obtaining dangerous goods and technologies. Moreover, many of the terrorist groups of greatest concern have exploited weak and failing states in an effort to find refuge and havens for training and coordinating attacks. Al Qaeda in the Arabian Peninsula's activities in Yemen are one case in point.

Simply put, the nexus of terrorism and WMD may be centered in states with the least capacity to counter those threats. Small states, developing nations, and especially failing states are all at risk of having their territories exploited with dangerous consequences.

This article proposes a way forward in addressing the hurdles faced by small states and developing countries in meeting their nonproliferation obligations under UN Security Council resolution 1540. I recommend a four-pronged approach. First, I suggest developing a single pole of coordination for states that do not have the resources to implement this resolution. Second, I recommend that the network of nonproliferation institutions and regimes, especially multilateral export control regimes, consider establishing common standards for the wider array of states that are now seeking guidance in developing national export, transit, and transshipment control systems. Third, I suggest that donor states establish right-sized models for small and developing countries that are presented in a coherent fashion, so as not to lose decision makers in the swarm of nonproliferation jargon. Finally, the article suggests that nonproliferation assistance be linked to other development and security needs that are of greater concern to developing countries and small states. That will give governments a direct stake in implementing UNSCR 1540.

COORDINATING ASSISTANCE

UN Security Council resolution 1540 has given rise to new initiatives to assist the many countries that have yet to establish controls on WMD-usable materials. Many of these efforts build upon previous work



that was initiated in the former Soviet Union by the United States, and to some extent by its European partners, following the end of the Cold War. However, many of the more recent and equally well-intentioned efforts to assist states that are not WMD suppliers, principally small and developing countries, are misguided and poorly coordinated.

Coordinating the myriad of international nonproliferation organizations and multinational efforts that supply assistance is no easy task. Most of the agencies, groups, and organizations providing 1540-related assistance and outreach—from the Organization for Security and Cooperation in Europe to the European Union, to international nonproliferation organizations such as the Internatioanl Atomic Energy Agency (IAEA) and the Organization for the Prohibition of Chemical Weapons (OPCW), to broader, issue-based organizations such as the World Customs Organization (WCO) and the World Health Organization—lack a forum to coordinate their outreach endeavors. Although the 1540 Committee might perform such a role, its mandate in this regard is limited, and donors are not obligated to work through the United Nations. Understandably, some organizations providing assistance fear that UN coordination or oversight from some other body would slow their efforts.

It is the lack of coordination, however, that creates inefficiency and sometimes confusion. Some officials in smaller states do not understand how proposals and assistance offers intersect and overlap. In other words, the recipient states themselves may not be equipped to coordinate donors and assistance.

Some developing countries play host to a myriad of visiting delegations from foreign organizations and governments that are willing to assist and offer

training. However, in some cases, officials that have requested or been offered assistance end up baffled, confused, and overwhelmed by this outreach. In interviews with officials from developing countries, I have frequently heard that they are confused about how the objectives of these various organizations intersect and differ. They are often confused about where to begin addressing issues of border security, legal-regulatory development, and chemical, biological, radiological, and nuclear concerns. They can become confused by the plethora of acronyms that may accompany offers of assistance, and even confused by differing groups that offer assistance through "action plans" and domestic coordination.

One way forward would be for the United Nations to convene a meeting that brings together all players involved in nonproliferation to discuss best practices, offers of assistance, current and future outreach plans, and coordination. A venue is needed that might help avoid duplication of effort and wasted resources while streamlining the international community's approach to smaller states. A venue for information-sharing alone might be useful in avoiding duplication and overlapping programs.

The network of nonproliferation institutions and arrangements has become more complex, and that complexity may not serve the objective of expanding and promoting multilateral cooperation.

NONPROLIFERATION REGIME COORDINATION

The nonproliferation regime includes a variety of formal treaties such as the Nuclear Nonproliferation Treaty and Chemical Weapons Convention, related bodies such as the IAEA and OPCW, and more informal institutions such as the Nuclear Suppliers Group (NSG), Missile Technology Control Regime (MTCR), and Australia Group (AG). All of these institutions help establish standards and define how states should go about securing WMD and related materials and building national systems for controlling the export, transit, transshipment, and re-export of WMD-materials. As such, they help to provide direction vis-à-vis UNSCR 1540 commitments and have the ability to define what is appropriate and effective. They have the ability to remove some of the ambiguity inherent in the resolution.

The multilateral export control regimes (NSG, MTCR, and AG) set important guidelines for participating states and help define what should be included on control lists. However, these regimes are generally only open to suppliers of dual-use and military goods. These institutions could be of greater service by considering the needs of developing countries and non-supplier states. In particular, these regimes and their memberships might work with transit and transshipment states to set new standards, or establish a new institution that recognizes these states' trading profiles and the associated risks. Rather than just calling on all states to adhere to existing guidelines established by these export control arrangements, smaller states would benefit from having a standard that was internationally recognized and appropriate to their needs. The process of developing such a standard would include establishing legal models, compiling a unified control list, and identifying standard approaches to targeting and risk management.

The network of nonproliferation institutions and arrangements has become more complex, and that complexity may not serve the objective of expanding and promoting multilateral cooperation. There should be a more streamlined way for states without significant bureaucracies to usefully and effectively support nonproliferation efforts. The current regimes could either point the way or provide leadership to help establish a new regime for states that are neither WMD possessors nor major producers of WMD-related items. Simply put, standards are needed for a wider array of states, and those standards need to be presented in a more coherent way. While such measures may sound like they would just create more complexity, they would meet the specific needs of states that will likely remain outside existing arrangements.

APPROPRIATE MODELS FOR DEVELOPING COUNTRIES AND SMALL STATES

It is natural that the states providing nonproliferation assistance are those states with the resources

and capacity to do so and interests in doing so. Unfortunately, the experience, legislation, and bureaucratic models of those states are neither easily replicated nor necessarily transferable to small or developing countries. For example, large states with robust export control systems may have multiple agencies involved in licensing WMD-related goods, customs organizations equipped with advanced equipment, and multiple intelligence organizations engaged in WMD-related information-gathering.

How, then, should countries with very limited resources, capacity, and even interest be engaged? What can and should be expected of such states with respect to UNSCR 1540 and its implementation?

First, as noted above, assistance needs to be coordinated and presented succinctly so that issues are not confused and decision makers or implementing agencies are not overwhelmed. It is easy to get lost in the plethora of nonproliferation acronyms, jargon, and institutions. Officials in developing countries, whether in customs organizations, border agencies, or foreign-affairs departments, most likely have responsibilities that go beyond nonproliferation or even beyond security functions. They need to quickly gain a grasp of what steps they can take to implement UNSCR 1540 and why their country is important to global nonproliferation efforts. Communicating efficiently and effectively is also important to gaining the high-level ministerial support needed to ensure that UNSCR 1540 is on the agenda and that personnel and resources are available to work on the issues.

Second, nonproliferation measures and resources must be delivered, put to efficient use, and sustained. In some countries, passing or amending legislation can be a long process. Thought must go into realistic action plans and short-term measures that can be taken in the interim to help implement UNSCR 1540 and consolidate nonproliferation gains. States seeking and needing assistance don't have years or decades to develop expertise. This is not to say there are easy or quick fixes, or that the hard work of legislation be overlooked. Instead, it is to suggest that time can be lost and resources squandered attempting to develop and implement systems, legal models, nonproliferation practices, and equipment that cannot be sustained. States need examples of other small states that have met their nonproliferation obligations effectively and with minimal resources. States such as Malta and Malaysia, which have moved to strengthen nonproliferation and export controls, constitute better examples for developing countries and small transit states than are large countries like the United States or Germany. In this respect, it would be useful for donor states to enlist smaller states that have put best practices in place to join the outreach effort.

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Nor is this solely a matter of drawing up laws, regulations, or procedures. Small states often request material help. But while equipment is often requested and willingly provided, recipients of material assistance may not use or maintain it. This is a lesson the United States learned the hard way when it supplied radiation portal monitors and other nuclear detection equipment to states of the former Soviet Union during the 1990s, only to see the new hardware gather dust. This lesson should not be lost.

LINKING 1540 OBJECTIVES TO NEEDS OF DEVELOPING STATES

If donor countries and international organizations are to make progress on nonproliferation and fulfill the objectives of UNSCR 1540 in developing countries and in small states with limited personnel, they will need to link those efforts to higher-priority issues such as human development and security. Analysts note that developing countries often display limited interest in investing scarce resources in WMD nonproliferation, which they see largely as a Western problem. Providing for basic human needs and tackling more visible security threats such as small-arms proliferation rank higher on their agendas. Developed small countries may understand the need, but still lack the human resources to combat proliferation.

Some donors and recipients have become innovative about linking nonproliferation assistance to higher-priority development and security concerns. They point out, for example, that the methods and tools used to prevent illicit trafficking in WMD components, such as targeting and risk management, also help governments interdict drugs, conventional arms, and other contraband. For example, the UN Office on Drug and Crime's and WCO's Container Control Program works to build container profiling units to identify high-risk containers. Such shipping containers could be used to transport not just strategic WMD-related goods, but also narcotics and other contraband. Profiling containers and trade to unearth illicit drugs or counterfeit currency may uncover other types of illicit trade. A case in point is the recent seizure of weapons on a North Korean vessel. Bound for the Panama Canal, the ship was targeted not because of illicit arms but because the Panamanian authorities suspected it was carrying narcotics. States, in short, can advance the cause of nonproliferation by advancing their own top priorities.

Developing states increasingly understand, moreover, that enhanced security measures can facilitate trade while attracting reputable business. Donors must be sure to ameliorate understandable concerns that the "controls" envisioned in UNSCR 1540—especially export, transit, and transshipment controls on WMD-related materials—will slow or inhibit trade or contravene international trade agreements.

Donor states and organizations may find it hard to portray their assistance as nonproliferation- or security-related assistance. To the extent possible, nevertheless, they must demonstrate that their offers of nonproliferation assistance help meet recipients' other security and development needs.

CONCLUSION

Traditionally, nonproliferation has been viewed as a preoccupation of large and developed states. Globalization, however, has ushered in a new era of technology production, transfer, and trade. Today, companies and persons in any country have the tools and abilities to transfer WMD technology or otherwise undermine nonproliferation by brokering or facilitating dangerous transfers. The A. Q. Khan network provided a wake-up call, showing how entities and persons in smaller and developing countries can facilitate nuclear-related trade.

Unfortunately, convincing leaders and officials in resource-challenged countries of all this will be no easy task. Other security and development issues will continue to dominate the policy agendas in these states. Donor states and international organizations seeking to support 1540 implementation and strengthen nonproliferation legal structures and institutions abroad should pause to reflect on how they can render assistance more strategically. They must also reflect on how they make offers of assistance and engage with foreign partners. Different audiences interpret the requirements of UNSCR 1540 and nonproliferation differently. Well-crafted messaging will enlighten rather than confuse.

Today, companies and persons in any country have the tools and abilities to transfer WMD technology or otherwise undermine nonproliferation by brokering or facilitating dangerous transfers.

The Center for International Trade and Security at the University of Georgia and the Center for Nonproliferation Studies at the Monterey Institute for International Studies are launching an experts group to explore these challenges further. Fulfilling the goals and objectives of UNSCR 1540 demands new approaches to engaging countries that have traditionally remained outside of the nonproliferation regime. It demands new thinking about how best to strengthen legal structures and nonproliferation practices in states with limited resources and competing agendas. And it requires new thinking about how existing nonproliferation regimes and institutions can reach outward to new states, connecting global purposes with local security and development needs. Small states must not be an afterthought. Overlooking them will heighten the risk of their becoming weak links, susceptible to exploitation by dangerous states or non-state actors. If that happens, all of our security will suffer.

A comprehensive approach to tackling WMD proliferation

The Belarus national framework document on 1540 implementation

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UNSCR 1540 represented the first attempt to ensure a comprehensive approach to counter the proliferation of WMD, their delivery systems, and related materials. It also provided an effective mechanism for preventing WMD and their delivery means from falling into the hands of non-state actors, including terrorist organizations.

The extension of the 1540 Committee's mandate for ten years by UNSCR 1977 (2011) was a tangible confirmation of the resolution's relevance in the modern security environment.

Paragraph 8 of resolution 1977 recommends that all states act on a voluntary basis with assistance from the 1540 Committee to adopt national action plans for implementing resolution 1540.

In this context, a pertinent question could be asked: if the majority of states have submitted national reports to the Committee, and if implementation efforts are proceeding well, what need is there to draft national implementation plans?

I would argue that the development of national implementation plans is quite significant in facilitating implementation because it contributes to:

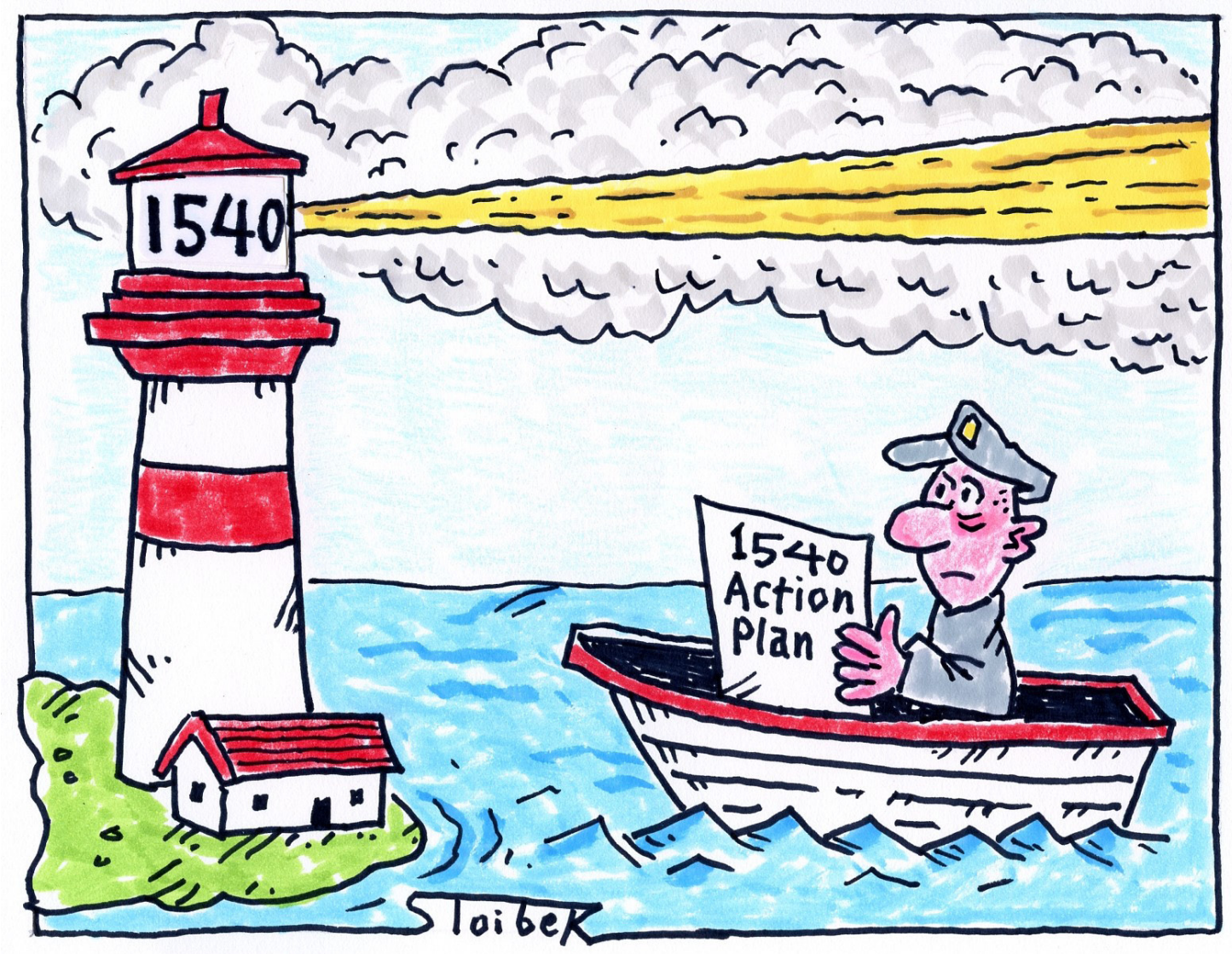
1. Identifying possible loopholes in national legislation in the sphere of physical protection, security, and safety of WMD-related materials, and in subsequently improving the relevant legislation;

2. Improving national export control legislation, policies, and practices, including relevant law-enforcement measures;

3. Mobilizing technical and expert assistance for state agencies involved in implementing resolution 1540;

4. Increasing the effectiveness of internal coordination on the implementation of resolution 1540, as well as strengthening regional and subregional cooperation on the resolution and other nonproliferation instruments.

Recognizing these benefits, the Republic of Belarus has elaborated a national framework document (NFD), or "roadmap," detailing additional measures to implement UNSCR 1540. The document was



developed by the Ministry of Foreign Affairs of the Republic of Belarus and other relevant ministries and agencies involved in resolution 1540 implementation, in cooperation with the Organization for Security and Cooperation in Europe (OSCE), the 1540 Committee, and the UNODA.

The document was approved by the Interagency Commission on Military-Technical Co-operation and Export Control, a body responsible to the Security Council of the Republic of Belarus, on May 30, 2012.

The Belarus NFD comprises four main parts: an introduction; a statement of how Belarus contributes to international nonproliferation efforts, including measures taken at the national level; "the roadmap" itself, which envisages further steps to implement resolution 1540; and a description of international assistance and cooperation.

The introductory part contains a reference to the key UN and OSCE documents that recommend drafting national plans and establish the basis necessary for elaborating such plans. It also includes the rationale for preparing a national framework document and outlines the NFD's main objectives.

The document envisages a step-by-step approach, and therefore focuses on two areas of UNSCR 1540: improvement of the national export control system to meet the standards outlined in the resolution, and strengthening of measures in the biological and bacteriological fields. The reasons we chose these two spheres rather than attempting to cover the whole spectrum of issues that resolution 1540 deals with are as follows.

Export controls are rather exhaustive. They encompass nuclear, biological, and chemical materials

as well as their delivery systems. Attempting to address this whole spectrum would be quite challenging. Furthermore, the biological domain is more of a niche area and falls under a less developed international legal framework. For instance, the Biological and Toxin Weapons Convention (BTWC) has no verification mechanism similar to that of the Chemical Weapons Convention (CWC). There is no international organization akin to the OPCW to oversee the implementation of the BTWC. Therefore, it would be useful to take a closer look at an area overshadowed by the previously more salient problems of nuclear and chemical weapons, and that consequently has not come under the same close scrutiny.

This focus notwithstanding, the NFD should be a lively and flexible tool. The document could be expanded to include provisions on physical protection, accounting for, and control and security of nuclear and chemical weapons.

The second part of the document reflects the contribution of the Republic of Belarus to international security, disarmament, and nonproliferation, as well as measures undertaken at the national level in the biological and export control spheres.

When describing national measures, we tried to establish a clear dividing line between measures taken after Belarus gained independence in 1991 and measures elaborated and implemented after the adoption of resolution 1540 in 2004. The point was to demonstrate that Belarus did not start its implementation efforts from scratch.

Indeed, Belarus adopted a great many laws and regulations governing the biological area before the passage of resolution 1540. Following the resolution's adoption, Belarus has undertaken a number of concrete measures to improve the effectiveness of physical protection and security of biological/bacteriological materials, as well as to strengthen and improve the national scientific and technical potential for detection, diagnosis, and prevention of infectious diseases and other biological threats.

The same can be said for the export control realm. Since 1992, Belarus has established a multilevel export control system that underpins and complements global nonproliferation efforts.

In 2005, Belarus began taking additional efforts to meet international standards and requirements in this area. The importance and sensitivity of export control issues merited the development of a more stringent implementation mechanism for the Export Control Law, which is now set forth in a Presidential Decree instead of the Governmental Resolution.

The road map for improving the national system of export controls, as well as taking measures to secure and control materials that can be used to develop biological weapons, is the essence of the NFD.

The NFD identifies four main objectives within the border and export control domain:

1. Analysis and update of national export control legislation, with a view to adapting it to modern international standards and best practices;

2. Establishment of an educational basis to prepare experts to oversee export controls on behalf of government agencies;

3. Improvement of the efficiency of the in-house export control system to more effectively tackle WMD proliferation;

4. Strengthening of border protection capacity.

A number of concrete steps of a legislative, educational, and practical nature are envisioned to address each area identified. They include, inter alia, reviewing export control legislation, as well as reviewing and updating the list of controlled goods; introducing export control and nonproliferation courses into the curriculum and study programs of academic departments in universities and institutes; increasing the level of export control expertise among industrial partners, with a view to improving firms' in-house export control systems; and establishing customs and border checkpoint infrastructure that meets modern international requirements.

In the biological field, we intend to improve the legal framework and strengthen national capacity, as well as to increase the effectiveness of international cooperation to prevent the uncontrolled proliferation of dangerous biological materials and infectious diseases.

We plan to achieve these goals by reviewing and updating laws and regulations in the field of sanitary and epidemiological welfare to meet modern international requirements, including the recommendations of the 7th Review Conference of the Biological and Toxin Weapons Convention; establishing a register of institutions and professional experts available to give advice and practical assistance to member states of the Eurasian Economic Community on infectious diseases; and exploring the possibility of establishing an international network of national research centers and laboratories to control infectious diseases.

As a practical example of these activities, on January 1, 2013, Belarus created a single permit for the cross-border transport of goods, including biological materials and pathogenic microorganisms, whose cross-border transport is restricted. This form was developed pursuant to a decision taken by our colleagues in the Eurasian Economic Commission. It is in use in the territory of the member states of the Customs Union.

The NFD is currently being implemented. This process involves such ministries and agencies as the Ministry of Foreign Affairs, Ministry of Health, State Military-Industrial Committee, State Customs Committee, State Border Committee, and State Security Committee. To facilitate the implementation of the NFD, and to ensure smooth coordination of this process among the relevant ministries and agencies, an Interagency Working Group has been established under the auspices of the Ministry of Foreign Affairs.

Lastly, the NFD covers the issues of international assistance and international and regional cooperation. In accordance with Article 7 of resolution 1540, Belarus stands ready to provide expert advice to governments that are developing or updating the legal frameworks for their national export control systems. In 2006-2007, in cooperation with the OPCW, Belarusian experts provided Tajikistan with expert advice to fulfill its national obligations under the Chemical Weapons Convention.

On the other hand, Belarus requires international assistance. We are currently working on updating our 1540 matrix for submission to the 1540 Committee. Details about the assistance we require will be included in this matrix.

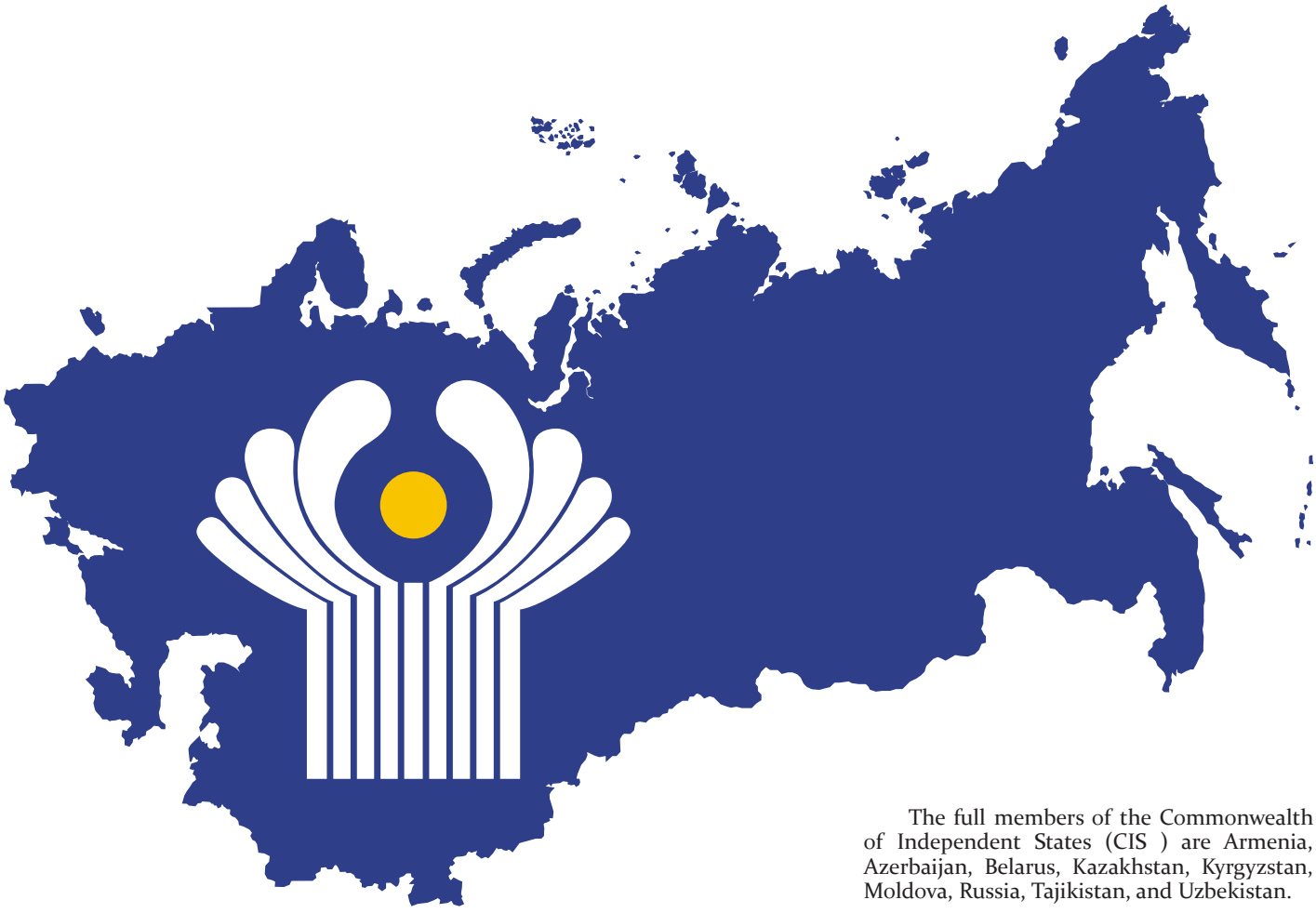
The implementation of resolution 1540 is a long-term process which requires significant efforts from all stakeholders, both nationally and internationally. For this reason, we decided to include international and regional cooperation as a discrete section of the NFD. This part of the document is the shortest one, but that fact does not diminish its importance. It will be developed and expanded, depending on how cooperation in the field unfolds.

A recent example of such collaboration was the January 2013 seminar on the implementation of resolution 1540. Member states of the Commonwealth of Independent States (CIS) convened in Minsk for the gathering. It was organized by the CIS Executive Committee, the UN Office for Disarmament Affairs, and the OSCE Conflict Prevention Center, with assistance from the Ministry of Foreign Affairs of the Republic of Belarus. Seminar discussions unearthed best practices for implementing specific provisions of resolution 1540. CIS representatives explored techniques for closer collaboration on export controls, and on counterproliferation against transfers of nuclear, chemical, and biological materials. They also outlined measures for enhancing tools and mechanisms for cooperation and information exchange, helping tighten enforcement of the resolution at the regional level.

In particular, the participants approved informal recommendations confirming the central role of the 1540 Committee in efforts to implement the resolution. They underscored the importance of international and regional organizations such as the United Nations, OSCE, and CIS in facilitating the implementation of the resolution at the national level.

The seminar laid the groundwork for continued cooperation among CIS member states on the implementation of resolution 1540, both on a bilateral basis and at the regional level. In its own way, the Minsk seminar represented the starting point for deeper coordination and action among the OSCE, the CIS, and the United Nations in this area.

Belarus stands ready to further promote the goals and objectives of resolution 1540 at the subregional and regional levels, with a view toward implementing the resolution more effectively and comprehensively. The national framework document stands as a useful tool toward this end.



The full members of the Commonwealth of Independent States (CIS) are Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Uzbekistan.

1540 implementation by CIS states

Petr Litavrin
EXPERT OF THE 1540 COMMITTEE

UN Security Council resolution 1540 (2004) laid down key principles for coordinated efforts against illicit trafficking in weapons of mass destruction related materials. Established to monitor the implementation of the resolution and assist states in this endeavor, the 1540 Committee has become an important tool for facilitating cooperation among member states in countering the global threat of WMD proliferation and the acquisition of such weapons by non-state actors, in particular for terrorist purposes.

Since the adoption of the resolution, its implementation has been improving, bringing the total number of national implementation reports submitted by states to 171. Twenty-two UN member states have yet to make their first submissions. The Committee continues to encourage UN member states to submit their initial reports, along with additional information on national practices.

The Commonwealth of Independent States (CIS) plays an important role in a global strategy against the potential nexus between proliferation and international terrorism that knows no borders. Some of its members produce WMD-related materials, including dual-use items, or produced them in the past. This makes them potential targets for non-state actors seeking these materials. Of no less importance is that nearly all Commonwealth states have suffered from terrorist attacks. This warrants a comprehensive, sustained struggle against this evil. In this regard, CIS states' active cooperation on strengthening nuclear security should be noted. For example, both fresh and spent HEU was repatriated from Uzbekistan to Russia in 2004 and 2006.

All CIS countries are parties to the most important treaties and conventions, such as the Nonproliferation Treaty (NPT), Chemical Weapons Convention (CWC), Biological Weapons Convention (BWC), Comprehensive Test Ban Treaty (CTBT), and International

Atomic Energy Agency (IAEA) safeguards agreements. Some of them are members of international export control regimes like the Nuclear Suppliers Group (NSG), Missile Technology Control Regime (MTCR), or Wassenaar Arrangement. It's noteworthy that the constitutions of CIS countries usually have an article that automatically integrates international law into domestic law, including international obligations in the sphere of nonproliferation. This can be regarded as a good practice that simplifies identification of measures taken to implement the resolution.

The CIS as an organization regularly informs UN bodies about measures taken to prevent terrorists from acquiring weapons of mass destruction. In May 2010 and in March 2012, relevant letters from the chairman of the Executive Committee of the CIS were sent to the UN High Representative for Disarmament Affairs. It was noted in the 2012 letter that efforts were being made:

- To suppress the illicit manufacture of and trafficking in potent chemical, biological, and radioactive substances;
- To protect facilities which pose an elevated technological and environmental hazard;
- To identify and shut down specialized laboratories and other facilities used by terrorist and extremist organizations to prepare the instruments of their criminal activity, including the components of weapons of mass destruction.

The letters concluded by stating that there was no evidence that terrorists had produced or acquired weapons of mass destruction or their components, or gained access to production technologies within the territory of the Commonwealth.

Another example of good practice is the CIS Inter-Parliamentary Assembly's adoption of several model laws that cover preventing and countering nuclear terrorism. Among them are model laws pertaining to Export Control (2001), the Criminal Code (2006), Counter-Terrorism (2004), Prevention of Financing Terrorism (2004), and Control of Radioactive Materials Trafficking (2004). Though model laws cannot be regarded as a universal instrument per se, their adoption can be useful for facilitating implementation of UNSCR 1540. They also illustrate the common interest of Commonwealth members in the fight against proliferation of WMD and terrorism, a fight that includes efforts to harmonize the relevant laws. For example, some states have aligned their laws on chemical and biological safety and security and revised their criminal codes to include penalties for smuggling or trafficking in WMD-related materials. It is important to report changes in criminal law to the 1540 Committee.

The problems of nonproliferation and WMD-related terrorism are regularly discussed at meetings of the CIS Council of Foreign Ministers. Consultations on export controls and the implementation of resolution 1540 also take place regularly, another good practice relevant to the purposes of resolution 1540. All CIS states have submitted their reports to the 1540 Committee, and most of them have submitted additional information at the request of the Committee. All in all, members of the Commonwealth have a higher rate of response to the requests from the Committee than do other regional organizations.

In recent years CIS member states have activated their cooperation with the 1540 Committee. Belarus submitted its National Framework Document to implement resolution 1540, a document analogous to voluntary National Implementation Action Plans (NAPs). Kyrgyzstan submitted its NAP in April 2013. A number of other CIS states have announced plans to prepare voluntary NAPs.

UNSCR 1540 experts have participated in country-specific activities on the implementation of resolution 1540, working with Belarus, Kyrgyzstan, and the Republic of Moldova. In 2012, Kazakhstan, Tajikistan, and Uzbekistan held national roundtables, with participation from the Organization for Security and Cooperation in Europe (OSCE), on the implementation of resolution 1540. Two training workshops were organized in Turkmenistan and Ukraine.

In January 2013, a Workshop on the Implementation of UNSC Resolution 1540 was held in Minsk. This event proved to be a milestone on the way to cooperation among CIS states. For the first time, participants adopted Unofficial Recommendations for CIS-wide implementation of resolution 1540.

These positive movements cannot conceal the fact that some CIS countries still face challenges in implementing resolution 1540. They lack the resources, experience, and expertise necessary to meet its requirements fully. Thus the starting points for

implementation of the resolution have varied greatly from the very beginning, while some countries have to take more steps to fill gaps in their implementation of the resolution.

Some CIS states, for example, still do not have export control lists that cover the full scope of resolution 1540 as it relates to nuclear, chemical, and biological materials. Needless to say, such lists are a prerequisite to enable customs officers and officials concerned with trade and security to exercise effective controls.

Obstacles to CIS states' implementation of resolution 1540 could be adequately addressed by facilitating cooperation, especially in the areas of trade, border controls, and physical protection of sensitive materials, technologies, and sites. In its letters to the United Nations, the Executive Secretariat of the CIS notes that CIS member states regularly work on the major areas of international cooperation against terrorism, including operations to prevent the "illicit production of and trafficking in weapons of mass destruction and of materials and equipment that can be used to make them."

As for the legislative base relating to nonproliferation and counterterrorism, the laws of some states do not reflect fully what specific measures are being taken to keep non-state actors from gaining access to WMD. For example, a number of states do not have legal frameworks to penalize violations of prohibited or controlled activities relevant to resolution 1540. In particular, many fail to impose criminal penalties. Additionally, only a few countries have reported enacting legislation on accountability, security, and physical protection of materials related to chemical and biological weapons.

Fortunately, implementation of UNSCR 1540 is an ongoing process. Awareness of limitations in legislation and of emerging problems in capacity building and enforcement is the first step toward solidifying progress in fulfilling the resolution's obligations. At this stage of implementation, the global community is placing more stress not only on putting national laws and regulations in place, but on building capacity, enforcing accounting procedures, and erecting physical protection measures to secure WMD-related materials and technologies.

The need to develop and maintain appropriate border controls, including laws and regulations to control the transit, transshipment, transport, and financing of proscribed material, and to monitor every activity relevant to the proliferation of nuclear, chemical, or biological weapons and their means of delivery, also requires active international cooperation.

In recent years, cooperation among CIS countries has been on the upswing on issues related to implementation of resolution 1540. To a large extent, the cooperative impulse came from a September 2011 workshop in Astana, organized by the United Nations Office for Disarmament Affairs (UNODA) in cooperation with OSCE. Participants from all Central Asian states took part, along with experts from the CIS and the Collective Security Treaty Organization (CSTO). The forum offered a good opportunity for experts from the 1540 Committee to undertake informal consultations with representatives from the CIS.

Resolution 1540 acknowledges that some countries may need assistance in this regard. Accounting for potentially dangerous objects and sources, including orphan radioactive sources and disused chemical and biological laboratories, is an important task in some states. Many need to strengthen enforcement capacity and border controls. Some CIS countries could hardly achieve the abovementioned goals without external financial and technical assistance and expertise. The role of international and regional organizations dealing with nonproliferation and counterterrorism, like the IAEA, OPCW, the BWC Implementation Support Unit, or Interpol, is essential.

However, it should be noted that few CIS states actively apply for assistance. Though the 1540 Committee provides no assistance itself, it acts as a clearinghouse, matching offers of with requests for assistance and finding potential donors. The Committee's website currently lists only four assistance requests, from Armenia, Azerbaijan, Kyrgyzstan and Uzbekistan.

Cooperation between the 1540 Committee and the CIS encourages Commonwealth members to examine once again the status of their implementation of UNSCR 1540, to establish priorities for filling gaps, to identify areas where outside technical assistance is necessary, and to share this information with the Committee.

The views expressed in this article are those of the author and do not necessarily represent those of any United Nations entity or any other organization with which the author is associated.

A practical way to implement export control lists in developing countries

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Implementing the traditional control lists of the disarmament, nonproliferation, and arms control treaties and export control regimes, covering both weapons of mass destruction and conventional arms, poses a challenge for many countries, even more so for developing states.

This article explores ways and means to help developing countries implement UN Security Council resolution 1540 (2004), with specific reference to its operative paragraph 6, which "Recognizes the utility in implementing this resolution of effective national control lists and calls upon all Member States, when necessary, to pursue at the earliest opportunity the development of such lists."

Resolution 1540 prescribes what to achieve. States shall refrain from providing any form of support to non-state actors seeking nuclear, chemical, or biological weapons or their means of delivery. Governments shall adopt and enforce laws which forbid non-state actors to develop, acquire, manufacture, possess, transport, transfer, or use such weapons. States shall work to prevent proliferation, including by establishing appropriate controls over related materials.

However, the resolution outlines neither how this should be achieved nor which specific items should be controlled, beyond the broad description of the weapons, delivery systems, and related materials. The how and the specific items are left to each individual country to work out. Various approaches could be followed to manage this challenge and to tailor implementation of resolution 1540 for a specific country.

An important dimension of implementing export controls is identifying items to be placed under national control. The nature of the items included on the control lists should be taken into account. The relevance and the match with national needs should be considered. Given the volume of items on the control lists and the range of technologies covered, the content should be communicated to customs officers in a practical and understandable format to allow effective

border control. Targeted action or rules-based control could have a major impact on control activities without losing its effectiveness.

NATURE OF CONTROL LISTS

Customs officials at national borders identify items crossing the border using the Harmonized Commodity Description and Coding System (HS) of the World Customs Organization (WCO).

When experts debate nonproliferation export control lists at various export control regime fora, they use the following criteria to decide whether an item should be included on a control list:

- The item in question poses a high proliferation risk.
- The volume of trade: an item is designated only if very few items of this type are traded or no trade takes place at all.
- A unique technology is involved, and it is not widely available on the world market.

The specifications agreed on would be the most stringent set of parameters, excluding the bulk of generally traded items.

Sometimes the rules for the same item differ on different lists, owing to the unique requirements of each export control regime.

Therefore, based on the criteria used to determine an export control list, the reality is that the movement of controlled items is very limited, even in the developed economies.

WHICH CONTROL LISTS?

Since resolution 1540 is aimed at WMD and their delivery systems, its scope could be limited to the lists made available by the multilateral disarmament and nonproliferation treaties and the various export control regime areas.

Only the CWC has an agreed, negotiated list of controlled items. Although the BTWC was negotiated in a multilateral forum, no agreement could be reached on a list of items to be controlled. However, the AG reached agreement on a control list in the chemical and biological field.

Similarly, the NPT has no agreed negotiated list of controlled items. The Zangger Committee (ZC) developed the so-called trigger list of items, a document drawn from Article III (2) of the NPT, which refers only to "source and special fissionable material as well as equipment or material especially designed or prepared for the processing, use or production of special fissionable material." Building upon the work of the ZC, the Nuclear Suppliers Group (NSG) adopted Guidelines for Nuclear Transfers. The NSG later adopted Guidelines for Transfers of Nuclear-Related Dual-Use Equipment, Materials, Software and Related Technology. The IAEA circulated the latter as an information circular at the request of the NSG participating governments (INFCIRC/254/Rev.10/Part 1 and NFCIRC/254/Part 2). The UN Security Council used these control lists to identify (S/2006/814, 815, 816) items prohibited for export to North Korea under UNSCR 1718 (2006).

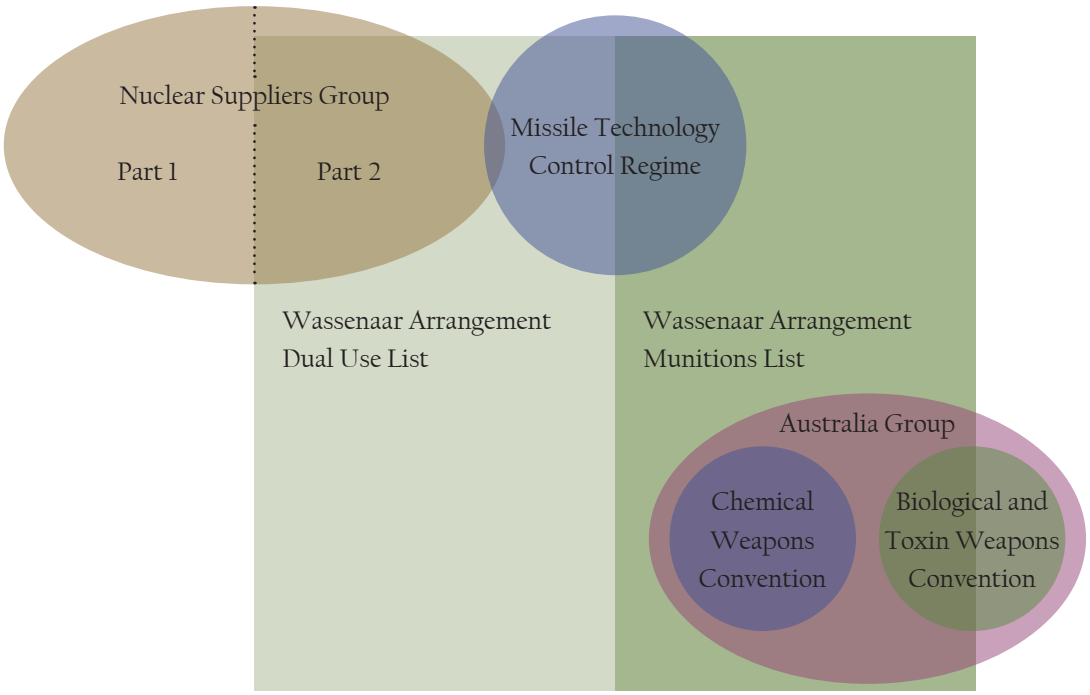
Conventional-arms export control lists could be considered if a country needs such lists or parts thereof, but conventional arms could be excluded if the objective is only to focus on WMD-related materials and delivery systems. Because of the very large number of items covered by the Wassenaar Arrangement (WA), whose control lists cover conventional arms (munitions list) and related dual-use goods and technologies, it may be imperative to limit the number of controlled items.

The various control lists also overlap each other (see Figure 1), and the accompanying graphic diagram attempts to illustrate the overlap between the various control lists.

COMMUNICATION TO CUSTOMS OFFICERS

The Harmonized Commodity Description and Coding System of tariff nomenclature is an internationally standardized system of names and numbers for classifying traded products developed and maintained by the World Customs Organization. Virtually all trade in the world is identified by HS codes. The HS codes are harmonized worldwide up to the six-digit

FIG 1. OVERLAP IN TREATY AND REGIME CONTROL LISTS



level, and trade statistics are internationally available at this level. Countries may increase the level to suit their own purposes. Eight-digit levels are common, but systems of up to ten digits exist.

Due to the complexity and structure of export control lists, a one-to-one relationship between the HS codes and the various control lists is impossible. To increase the complexity (digit level) of the HS system, to cater to all such control lists, is impractical.

The bottom line is that the HS codes are the language of customs officers all over the world, and any communication should use them as a basis.

HYBRID CONTROL LISTS

A reference list was developed in South Africa, with the assistance of various international partners, listing the export control regime-controlled items against the HS codes. This was done at an eight-digit level. It should be noted that these HS codes will also contain other items that are not covered by the regime lists.

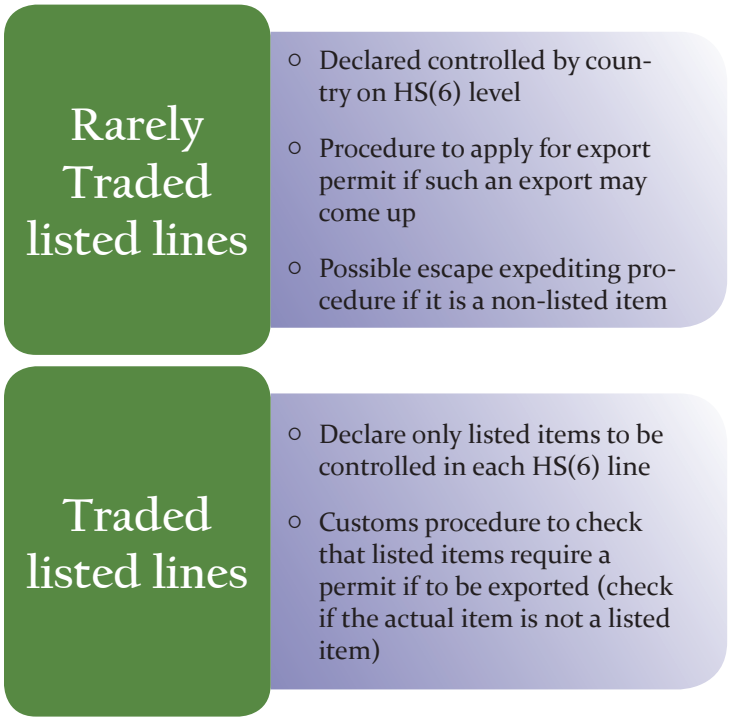
Given the presumed low volume of trade in control-listed goods, some exploratory research was done on trade statistics available on the internet (six-digit level).

Five developing countries were selected with different levels of economic activity. Only the Non-Agriculture Market Access (NAMA) codes were investigated. The amount of NAMA tariff codes at the six-digit level for these countries varies from 915 to 5,009. These NAMA codes contain 432 export control regime-listed items (NSG Part 2, Missile Technology Control Regime (MTCR), Chemical Weapons Convention (CWC), and AG (biological)) under 163 tariff lines. The trade statistics over one year indicated that the trade in the 163 tariff lines that may contain the 453 regime-listed codes for developing countries is limited to a small percentage.

The percentage of the tariff lines that may contain export control regime-listed items would be a guide to decide if there may be a benefit for a country to pursue the hybrid control-list route.

The hybrid approach could be followed, firstly, by controlling certain tariff lines by HS number on the non-traded or seldom-traded codes. This would have no practical (volume) impact on border control activities. However, a procedure needs to be introduced if

FIGURE 2. HYBRID CONTROL LISTS



such a code does present itself in an actual export. A national or an international backup support structure would be required to assist in decision-making (see Figure 2).

Secondly, the text of the export control regime list could be used where trade took place in tariff lines covered by the codes that could contain export control regime-listed items. Therefore, the export control regime-listed items should be declared controlled in terms of the relevant regime text, but structured in the HS six-digit format. If regular exports of goods not listed on the regime lists occur, such exports would not be impeded. However, customs officials would need training to distinguish the difference between these items and the regime-listed items. This would prompt the customs officer to ask about any deviations from normal exports that may in fact involve export control regime-listed items (see Figure 2).

CONCLUSIONS

Control lists could be reduced to the export control regime lists limited to WMD and their delivery systems.

Targeted or rule-based control could be employed in conjunction with hybrid control lists.

Trade statistics and analysis should guide a country as to whether the hybrid control-list concept may be viable.

The hybrid control list would be a fraction of the size of the export control regime lists, as the non-traded control list part would only contain HS codes.

The hybrid control-list concept would need national and international support.

Countries interested in the concept of hybrid control lists would need assistance to develop such an approach.

In order to understand the complexity and volume of proliferation-related controlled items that may be traded by a specific country, a proper evaluation must be done by experts who understand the relationship between the Customs HS Codes and the items on the various nonproliferation regime control lists.

REFERENCES

This article is based on a presentation made at the Workshop on the Implementation of UNSC Resolution 1540 for African States, held from November 21-22, 2012 in Pretoria, South Africa, entitled "South African Experience on the Implementation of Control Lists in the Context of UN SC Resolution 1540," by D. J. van Beek and E. Ncube.

Biosecurity and UNSCR 1540

The Role of the Biorisk Management Association of Kenya

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BIOSECURITY INSTRUMENTS IN KENYA

Addressing biological threats, whether from natural, accidental, or deliberate causes, requires governmental, professional, and institutional cooperation as well as formalized regional coordination. "Cooperation" and "coordination" are not just buzzwords when it comes to addressing biological threats, but a dire necessity in case of pandemics and other public-health events of potential international significance.

How a country integrates the three main international instruments for addressing biological risk management—the International Health Regulations (IHRs), the Biological Weapons Convention (BWC), and UNSCR 1540—into its national agenda represents a measure of its efforts to maximize the use of national resources to comply with internationally mandated requirements, and of the astuteness with which it uses capacity-building assistance mechanisms available under these instruments.

In December 2012, a report from the director-general of the World Health Organization (WHO) noted that states are making fair progress toward a number of IHRs core capacities (which reflect the operational meaning of the capacities to detect, assess, and report events, notify the relevant authorities, and respond to public-health risks and emergencies of national and international concern), notably those for surveillance (with a global average score of 81 percent), response (78 percent), and zoonotic events (81 percent). African states, however, had a lower average score on these areas (73 percent, 63 percent, and 76 percent, respectively). With regard to "coordination," the African states showed a much lower regional average (57 percent) compared to the global number (72 percent). Other core capacities such as "legislation" and "points of entry" (both of cross-cutting relevance to disarmament and nonproliferation instruments such as the BWC and UNSCR 1540) also showed significantly lower compliance in Africa than on the global scale

(38 percent versus 70 percent for legislation, and 33 percent versus 60 percent for points of entry). Kenya's scores of 50 percent for legislation and 55 percent for points of entry show progress toward implementation of core capacities since their entry into force in 2007. Nevertheless, the need remains to mobilize additional resources or reallocate resources to develop, strengthen, or maintain the IHRs core capacities. Similarly, Kenya's 65 percent score on laboratory core capacity (which is assessed by indicators such as the availability of laboratory services to test for priority health threats, and the implementation of biosafety and biosecurity practices) shows that much remains to be done in this area as well.

According to the WHO, while the IHRs (2005) mandate the rights and obligations for states, how these are to be implemented is up to each state in light of its own domestic legal and governance systems, sociopolitical contexts, and policies. Similarly, states need to have an adequate legal framework to support and enable them to fulfill their obligations under the BWC.

Kenya acceded to the BWC in January 1976 and established a BWC focal point in 2009, namely the National Council for Science and Technology (NCST), which coordinates the activities of the National Biological and Toxin Committee (NBTWC). The NBTWC is involved in the national implementation of the BWC, among other things by drafting relevant legislation, addressing matters pertaining to biosecurity and dual use, participating in the annual BWC Meetings of States Parties and Meetings of Experts, and

compiling and submitting the Confidence Building Measure (CBM) reports. In a statement by Professor Shaukat Abdulrazak, NCST secretary and CEO, at the 2012 BWC Meeting of States Parties, the following measures were highlighted toward national implementation of the Convention: (i) establishment of the NBTWC (2009); (ii) drafting of the National Biosecurity Policy and Biosecurity Bill (2011), which were merged with other policies and bills to constitute the draft National Biosciences Policy and Biosciences Bill (2012), with a view toward integrating biosecurity goals into national planning pertaining to socioeconomic development; (iii) development of the 2008-2012 Biotechnology Awareness Strategy (BioAWARE) to inform stakeholders of its uses; (iv) establishment of the National Biosafety Authority (2009) to ensure safe application and use of genetically modified organisms (GMOs) and develop national guidelines governing the safe use, transfer, import, and handling of biological agents; (v) development of regulations on safe handling, use, import, export, and transit of GMOs; (vi) establishment of biotechnology institutions; and (vii) conduct of a national survey on Kenya's biosecurity capacity.

The measures highlighted by the Kenyan officials at the BWC Meeting of States Parties toward the implementation of the Convention revealed significant overlap between BWC obligations and those of UNSCR 1540. In particular, operative paragraph 3 (a and b) of the latter, which pertains to the domestic control of biological-weapons-related materials and means of delivery, intersects with the BWC. Cross-referencing operative paragraph 3 with the 1540 matrix fields, states' responsibilities fall into the following categories: (i) measures to account for / secure production, use, storage, and transport of such materials; (ii) regulations for physical protection of facilities / materials / transports; (iii) licensing / registration of facilities / people handling biological materials; (iv) reliability check of personnel; (v) measures to account for / secure / physically protect means of delivery; (vi) regulations for genetic engineering work; and (vii) other legislation / regulations related to safety and security of biological materials.

The measures highlighted by the Kenyan officials at the BWC Meeting of States Parties ... revealed significant overlap between BWC obligations and those of UNSCR 1540.

The measures Kenya has instituted to establish a biosecurity framework (as reported in the BWC forum) are not reflected in the 1540 matrix developed by the 1540 Committee in 2010, or in Kenya's 2005 and 2007 reports to the 1540 Committee. The process of establishing an inter-ministerial council for the full implementation of BWC (similar to CWC) has been ongoing since 2007. These documents do not discuss the national measures instituted by Kenya toward implementation of UNSCR 1540 in the biological area. While UNSCR imposes no legal mandate in this area, periodic reporting to the 1540 Committee testifies to the government's long-term commitment to the resolution's nonproliferation goals and objectives. It also helps the Committee identify effective practices states have undertaken, as well as gaps that require additional focus by national stakeholders. Extra reporting thus helps the Committee target international assistance. Of note, while Kenya submitted a national report to the Committee in 2005 and an update in 2007, nineteen African states had yet to submit their first reports as of April 20, 2013.

The IHRs, BWC, and UNSCR 1540 contain many overlapping or synergistic requirements on strengthening national systems and frameworks for biological risk management, and on promoting international dialogue, cooperation, and capacity-building. In operative paragraph 7 of UNSCR 1540, the Security Council recognizes that some states may require assistance to implement the resolution, while others may offer assistance. Subsequent Security Council resolutions (UNSCRs 1810 (2008) and 1977 (2011)) reaffirmed the clearinghouse role of the 1540 Committee, and in 2010 the Committee adopted revised procedures to improve and accelerate its response to request for assistance and facilitate match-making. Similarly, BWC parties agreed at the 7th Review Conference "on the value of working together to promote capacity building in the fields of vaccine and drug production, disease surveillance, detection, diagnosis, and containment of infectious diseases as well as biological risk management," and decided to establish a database system to facilitate requests for and offers of exchange of assistance and cooperation. Last but not least, Article 44 of the

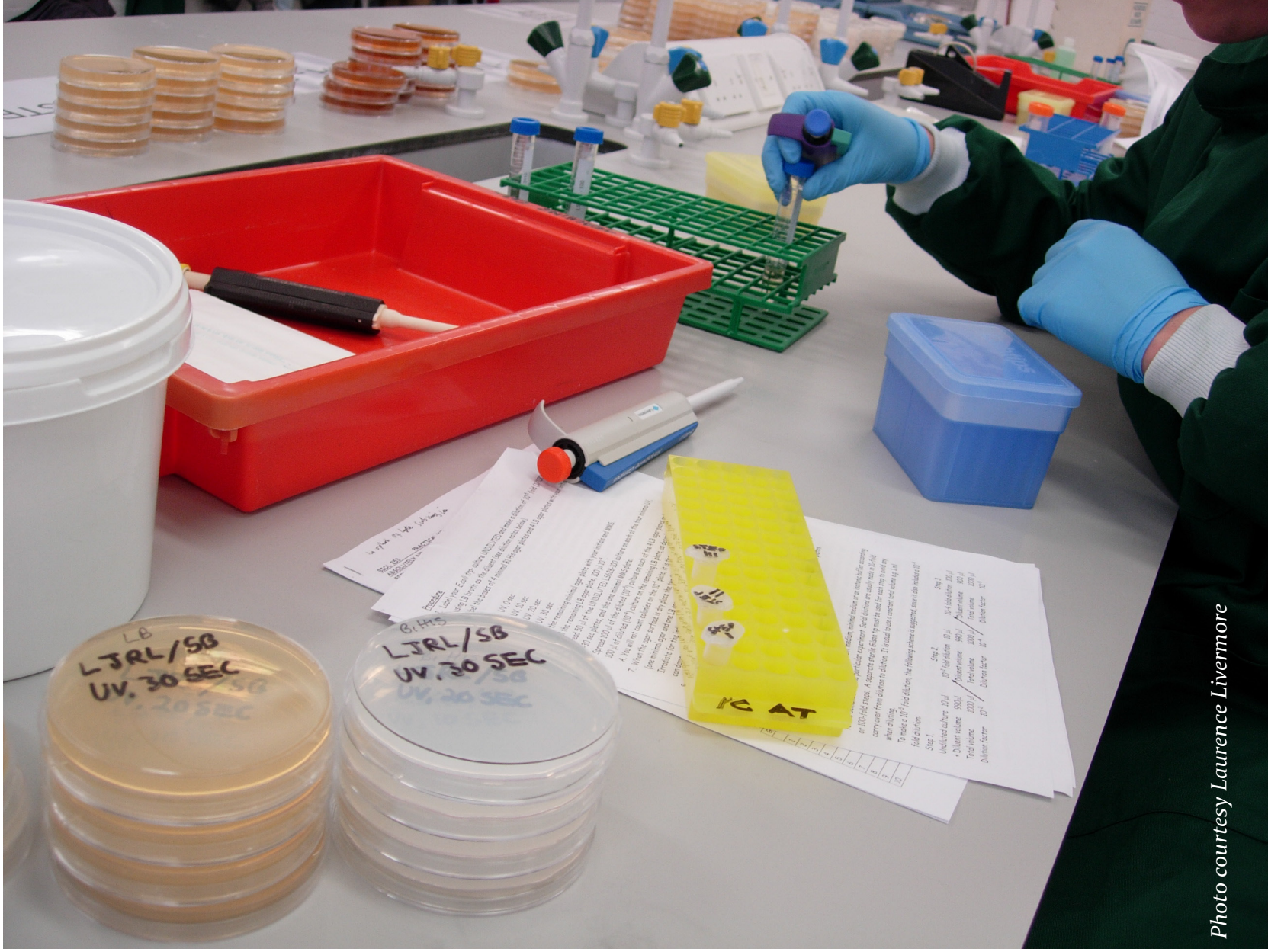

Photo courtesy Laurence Livermore

IHRs notes that "States Parties shall undertake to collaborate with each other... bilaterally, through regional networks and the WHO regional offices, and through intergovernmental organizations and international bodies." In 2012 the World Health Assembly urged states to "reconfirm their support to developing countries and countries with economies in transition upon their request in the building, strengthening and maintenance of the core public health capacities required under the IHRs (2005)," and requested the director-general "to promote the engagement with relevant international organizations and stakeholders to strengthen their contribution towards effective implementation."

In this context, to paraphrase an African proverb, it seems that it takes a "village" to effectively address biosecurity. The proverbial village, however, is populated with entities willing to help, should the need arise and the request be made. But as UN Secretary-General Ban Ki-moon stated in 2008, "governments alone cannot confront the risks posed by biological weapons... to manage the full spectrum of biological risks — from naturally occurring diseases, accidents and negligence to terrorism and the deliberate use of biological weapons — you need a cohesive, coordinated network of activities and resources. Such a network will help to ensure that biological science and technology can be safely and securely developed for the benefit of all." So, what will be the role of nongovernmental organizations in this process, specifically the role of the Biorisk Management Association of Kenya (BMAK)?

THE BIORISK MANAGEMENT ASSOCIATION OF KENYA AND ITS POTENTIAL ROLE IN STRENGTHENING THE UNSCR 1540 IMPLEMENTATION

The BMAK is a nongovernmental organization registered with the Registrar of Societies, Government of Kenya. According to its charter, BMAK:

A. Strives to establish best practices, communicate these practices to its members, and encourage dialogue and discussions on emerging biosafety and biosecurity issues;

B. Seeks to influence and support the development of legislation and standards in the areas of biosafety, biosecurity, biotechnology, bioresource, bioinformatics, transportation security, and associated activities, and to act as a focal point for the consolidation of views on these issues;

C. Represents the interests of its members in all areas relating to biorisk management, with the objective of preventing accidental or deliberate harm to humans, animals, plants, or the environment from biological substances or materials;

D. Encourages relevant government institutions to meet their reporting and implementation obligations under the BWC, UNSCR 1540, and IHRs;

E. Uses its knowledge and skills in biosafety and biosecurity to help design and implement biosurveillance and molecular diagnostic systems and laboratory practices that strengthen infectious disease detection and responses in the country.

Any serious attempt to reduce the risks associated with biotechnology must ultimately be international in scope, because the technologies that could be misused are widely available and accessible worldwide. At the international and regional levels, BMAK has elaborate plans to raise awareness and engage in education and training related to biosecurity obligations found in the BWC, UNSCR 1540, and the IHRs. Toward that end the Association intends to establish partnerships with the International Federation of Biosafety Associations, African Biosafety Association, Biological Weapons Implementation Support Unit, and 1540 Committee Group of Experts.

BMAK will also strive to position itself at the forefront of educational outreach to the scientific community in Kenya. It will do so by devising educational programs on the dual-use dilemma in biotechnology, and on scientists' responsibility to mitigate dual-use risks. BMAK plans to urge the government of Kenya to establish an oversight body, the Biosecurity Authority (BSA). The BSA will consist, inter alia, of public (and animal) health, law-enforcement, defense, intelligence, and national security experts. It will serve a number of important functions, both for the government and for the life-sciences community. The BSA should also include representatives from relevant ministries such as the Ministry of Transport, Ministry of Foreign Affairs, Ministry of Public Health, Ministry of Agriculture and Veterinary Services, and Ministry of Science and Technology. It may be tasked with developing new channels of sustained communication between the security services and the life-sciences community about how to mitigate the risks of bioterrorism. Such communication is essential in the early phases of a biological incident, since establishing whether the event was intentional or not may be difficult to ascertain.

CONCLUSIONS

International nonproliferation, disarmament conventions, and threat-reduction initiatives serve as the principal means to prevent illicit trafficking of dual-use biological materials and technologies. They also have a dual benefit, in that they may provide the tools and assistance mechanisms for strengthening the national health systems that minimize the vulnerability of populations against high-impact public health risks and emergencies while mitigating the consequences of biological incidents that endanger public health, affect multiple sectors of society, and may impact national (and global) security.

As a newly established organization, BMAK aims to support the government of Kenya's efforts to implement UNSCR 1540. It will propose the enactment of a broad but inter-related range of strategies and legislative, regulatory, and policy implementation measures designed to minimize the risk—both inside and outside the laboratory—that science and technology, biological materials, and research-related information will be misused for hostile purposes, or that individuals or the environment could be accidentally exposed to hazardous biological agents.

Since the adoption of UNSCR there have been only two international outreach events specifically focused on the implementation of UNSCR 1540 in the biological area. The first was held in 2005 in Geneva.

Photo courtesy Nicola Sapiens

Participants explored "Implementing UN Security Council Resolution 1540 to combat the Proliferation of Biological Weapons." The second was held in Nairobi in 2010. This Kenyan-sponsored event was titled "Africa Regional Biosafety and Biosecurity Workshop on Implementation of UN Security Council Resolution 1540."

The workshop's objective was to promote capacity-building to advance implementation of measures to prevent the proliferation of biological-weapons-related materials to non-state actors. It was hosted by the Government of Kenya with support and funding from the United States and in cooperation with the 1540 Committee and the UN Office for Disarmament Affairs. The workshop was tailored to help African states meet the unique challenges they confront as they work to meet their obligations under UNSCR 1540 in the biological area. Participants focused on mitigation of the bioterrorism threat, pathogen security measures, and other measures related to accounting, securing, and physical protection of biological materials. Participants saw the workshop as holding great value, since it encouraged states to share experiences and helped identify capacity-building measures suitable for participating African states. Unfortunately, the organizers missed the opportunity to capture the lessons learned, and the effective practices unearthed, in a workshop report to the 1540 Committee.

Since UNSCR 1977 requests the 1540 Committee to promote the refinement of its outreach efforts to focus on specific thematic and regional issues related to implementation, BMAK will work toward securing international funding to continue organizing regional workshops in the future. If successful at garnering funds, it will submit initial or additional reports to the 1540 Committee on UNSCR 1540 implementation and sharing of effective practices.

The views expressed in this article are those of the authors and do not necessarily represent those of any United Nations entity or any other organization with which the authors are associated.

Indonesia's pioneering effort to self-assess nuclear security culture

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Indonesia is a vocal supporter of global efforts against terrorism, particularly those involving nuclear weapons or materials. Indonesia's Foreign Minister, Marty Natalegawa, emphasized in his UN address on September 28, 2012 that in the face of the threat of nuclear terrorism and the catastrophe that it could bring about, we must always be on the alert and vigilant in our common efforts to anticipate it. In order to address these threats, the Indonesian National Nuclear Energy Agency (BATAN) has consistently promoted high standards of nuclear security at its facilities as a matter of high priority. Cooperation with the IAEA is a major vehicle for achieving these goals. BATAN invited the IAEA's International Physical Protection Advisory Service (IPPAS) mission to evaluate nuclear-security arrangements at its three nuclear research reactors in 2001. This initial visit was followed by another IPPAS mission in 2007.

THREAT ENVIRONMENT AND LEGAL FRAMEWORK

In 2003, Indonesia enacted Law No. 15 on Countering Terrorism, which covers such crimes as using chemical, biological, and radioactive substances for terrorist purposes. Efforts are underway to develop comprehensive legislation on nuclear security. The draft legislation will not replace the existing legal framework, but rather will fill out existing gaps in the area of nuclear security and safeguards, strengthen the preventive capacity of law-enforcement agencies, and enhance the power of Indonesia's Regulatory Agency. In 2010, Indonesia set up the National Counter-Terrorism Agency, which collaborates with

national counterterrorism stakeholders and coordinates counterterrorist efforts countrywide.

On the regional level, Indonesia keeps enhancing regional cooperation against nuclear terrorism within the framework of the Jakarta Center for Law Enforcement Cooperation, a body established in 2004. Another important instrument is the Asia-Pacific Safeguards Network, which has monitored the operation of nuclear safeguards in the region since 2009.

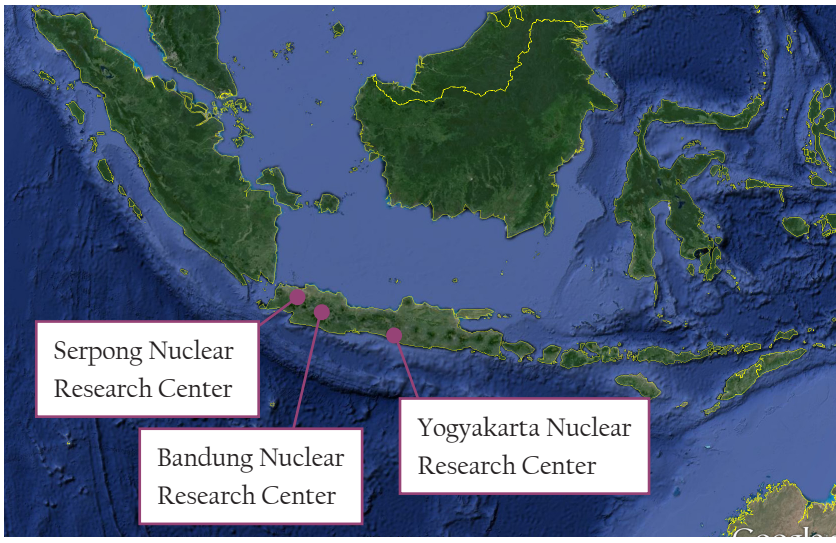
In the international realm, Indonesia proposed at the 2012 Seoul Nuclear Security Summit that the IAEA coordinate efforts to draw up a single, user-friendly "National Legislation Implementation Kit on Nuclear Security." This implementation kit will be designed as a one-stop, comprehensive legal framework that states can use to make the enforcement of their laws on nuclear terrorism more coherent.

With so many ongoing programs in place and several agencies involved, one highly important missing element was an understanding of the human factor's reliability, and of security culture throughout Indonesia's nuclear-security infrastructure.

In 2010, the chairman of BATAN formally recognized the importance of nuclear security culture and demonstrated BATAN's commitment to its enhancement at the facility level. To support the dissemination of the IAEA Implementing Guide, BATAN held a "Regional Workshop on Nuclear Security Culture" in Yogyakarta in December 2011. It convened the workshop in cooperation with the IAEA.

Both the human factor and security culture are critical components in ensuring the security of nuclear facilities, infrastructure, and transport. Their importance cannot be overestimated. To reflect that, the IAEA and international experts have developed the concept of nuclear security culture and compiled the Implementing Guide. The Implementing Guide was published by the IAEA in 2008 as Nuclear Security Series no. 7. The importance of nuclear security culture was also recognized by the two nuclear security summits in 2010 and 2012. It was included in the final communiques and summit recommendations as one of the most important factors.

As the next step in promoting and improving nuclear security culture, the IAEA has been working



with a group of international experts to develop and implement a robust methodology for self-assessment at nuclear facilities. This methodology is designed to provide national authorities and facility management with benchmark information on the status of nuclear security culture. It constitutes the baseline for subsequent development of a set of measures to fill any gaps identified. The methodology is currently in the final stages of development, and will be presented for IAEA member-state review and finalization.

INDONESIA'S SELF-ASSESSMENT INITIATIVE

In the autumn of 2012, BATAN initiated a pilot project to implement the IAEA draft self-assessment methodology at BATAN research reactor facilities. The project unfolded in coordination with the Center for International Trade and Security at the University of Georgia (CITS/UGA), USA, and the IAEA Office of Nuclear Security. The results were expected to pay off in several ways, for instance by improving understanding of employees' concerns, needs, aspirations, and motivations; clarifying employees' opinions about key management issues; and building a link to safety-culture assessment and synergizing mutual benefits. Indonesia operates three nuclear research centers for a wide variety of peaceful purposes. BATAN operates these three research reactors in addition to another radioactive source facility. BATAN's nuclear research centers are located in Bandung, Yogyakarta, and Serpong. The source facility is located at Pasar Jum'at Jakarta. A Secondary Standards Dosimetry Laboratory is at the BATAN Head Office in Jakarta. Three self-assessment teams were selected from each facil-

ity and participated in a series of briefings with CITS/UGA and IAEA experts to become acquainted with the methodology and prepare for the self-assessment. These specially designated teams implemented the pilot self-assessment during the December 2012-January 2013 time period, with final results summarized and discussed in February-March 2013, presented at the IAEA Technical Meeting on April 8-12, 2013, and outlined at the IAEA International Conference on Enhancing Global Efforts on July 1-5, 2013.

BATAN's self-assessment of nuclear security culture at its three nuclear research reactors was the first attempt to test the emerging IAEA methodology. To this end, BATAN used its internal resources with input from the IAEA and CITS/UGA. In October 2012, international experts briefed self-assessment teams at three nuclear research reactors in Serpong, Bandung, and Yogyakarta on the draft methodology for performing self-assessments. The IAEA was present and played a critically important role. In this process, the self-assessment teams (composed of 41 people) surveyed 624 employees and interviewed 128. They developed and analyzed 87 histograms and accumulated more than 500 pages of data.

LESSONS LEARNED AND FOLLOW-UP

The self-assessment pilot project has yielded significant and tangible results for BATAN. It offered not only an assessment of the status of security culture at three research reactors, but also a learning experience for management and the workforce. This project opened up a new, important dimension of nuclear security, namely the role of the human factor and its impact on the overall security regime. In this sense, the draft guidance is a well-written and balanced document that is vital for all those who intend to build up an effective nuclear security culture at different types of facilities throughout the nuclear infrastructure. BATAN has provided its comments and suggestions to the IAEA to further improve the draft self-assessment methodology and is prepared to help with further refinements.

BATAN's pilot project to establish a baseline for evaluating nuclear security culture is just the first step forward. BATAN is revising the chairman's regulations on security management to reflect its new experience and is determined to expand cooperation with the IAEA. Also, BATAN is planning to share its self-assessment experience at several international forums. The

next step is to work with other government agencies to establish a center for security culture and assessment, supplying an expert and training hub in the region. Its scope is expected to encompass the following tasks:

- Finalize the self-assessment results and use the data for sharing with the IAEA and training BATAN officials on the security-culture assessment methodology, periodic evaluation of security culture at BATAN facilities, analysis and evaluation of the findings, and a series of outreach activities that enlist BATAN and international experts to help raise nuclear-security awareness and culture standards where they are deficient.

- Apply the concept of nuclear security culture and its self-assessment methodology to radioactive-source users, including hospitals, and adjust its implementation to local needs and national culture.

- Extend outreach activities within the ASEAN region, including cooperating with the IAEA to train nuclear-security professionals from Vietnam, Thailand, Malaysia, the Philippines, and Singapore in the evaluation methodology, helping conduct evaluations, and helping interpret the results.

- Facilitate and support the promotion of new IAEA methodologies for nuclear security culture, including the two forthcoming guidance documents for self-assessment and enhancement.

- Establish and maintain a dedicated website focusing on nuclear security culture, to be launched by BATAN in cooperation with other countries and the IAEA. The site will feature reports, assessments, scholarly articles, and other information to support nuclear professionals and scholars in the ASEAN region and beyond. It may include translations of key materials and IAEA documents for the convenience of ASEAN stakeholders.

The new center will focus on its unique niche, and in this sense will not duplicate the activity of other centers worldwide. Moreover, it will attempt to establish cooperative relations with these centers, working alongside the IAEA to share its expertise and achieve universal standards of security-culture implementation. One long-term objective is to apply this innovative approach to domains beyond the nuclear sector. The human factor and security culture are not confined to the nuclear world.

The self-assessment project was a unique and exciting experience. It established a baseline for all future nuclear-security-culture evaluations throughout the national infrastructure, and raised security awareness among staff members by sending a clear message that the threat of nuclear terrorism is real and the nuclear security system is important. The project identified several gaps and deficiencies, helping senior leadership immediately revise existing procedures and regulations. Further refinements will be fully addressed at a later stage, in a follow-up action plan to improve nuclear security culture. Most importantly, BATAN's newly acquired expertise has reinforced relations with the IAEA, opened the possibility of sharing best practices with other countries, and laid the groundwork for a valuable Indonesian contribution to the 2014 Nuclear Security Summit at The Hague.

Improving capacity, communication, and civil society engagement in 1540

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A number of civil-society groups—think tanks, academia, and private foundations—have embraced the goals of UNSCR 1540 since its inception in 2004. They first became awareness-raising agents of the resolution, brainstormed implementation paths and reporting requirements, delivered training programs, and performed assessments of national 1540 reports. The variety of forms and contributions spans from organizing international and regional conferences and seminars, to helping draft national export control legislation, to producing a documentary to promote UNSCR 1540.

In his message to the Vienna Forum on UN Security Council Resolution 1540 (2004) and Civil Society: Opportunities for Engagement, held on January 8-10, 2013, UN secretary-general Ban Ki-moon noted the significance of the civil-society contribution to the activities of the United Nations in disarmament and many other critical areas. He expressed confidence that "the positive impact of civil society will move the world closer to meeting the objectives of resolution 1540 and a world without weapons of mass destruction." A number of international organizations and national governments share an understanding and expectation that civil society has a much greater and broader role to play, working with national and international stakeholders in support of 1540.

The understanding that civil society must strengthen and expand its engagement guided the decision to organize the first-ever international forum dedicated to the role of civil society in UNSCR 1540 implementation. As noted before, the gathering convened in Vienna in January 2013. Discussions at the Vienna Forum, along with almost ten years of civil-society engagement in support of UNSCR 1540, provide abundant material to reflect on the lessons learned from past experience and assess future directions, address concerns, and highlight opportunities.

This approach requires an assessment of the current status, scope, and capacity of civil-society groups in various regions; examination of challenges such as national governments' reluctance to acknowledge the role of civil society in 1540 implementation; and funding and communication shortfalls. Another important challenge is to align civil-society contributions in support of UNSCR 1540 more closely with national and international needs. At the same time, this work must go beyond the needs already recognized. Neglected or overlooked issues must also be addressed, and civil society can bring them to the attention of fellow stakeholders.

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Bryan Finlay of the Stimson Center undertook a thorough analysis of how civil society supports 1540 goals. Finlay entitled his report "Meeting the Objectives of UN Security Council Resolution 1540: The Role of Civil Society." The Stimson report provides an excellent overview of various avenues whereby civil-society groups already advance the efforts of national governments and international organizations. A summary of key areas of civil-society engagement in 1540 issues is provided below. It provides a canvas for further discussion, and as a good starting point to examine areas that require additional attention from civil-society groups.

KEY ROLES OF CIVIL SOCIETY ENGAGEMENT IN UNSCR 1540:

1. Awareness raising, advocacy, and outreach directed at national governments, legislators, educational institutions, other civil-society groups, and the public at large;

2. Providing legal, policy, technical, and scientific expertise across many issue areas, countries, and stakeholders;

3. Delivering or facilitating implementation assistance, from specific projects to helping with reporting requirements and development of 1540 national action plans;

4. Bringing emerging CBRN issues to the attention of the international community and the 1540 Committee and identifying gaps;

5. Developing and conducting educational and training activities and programs aimed at a variety of audiences, including but not limited to practitioners, diplomats, legislators, government officials, law enforcement, students, and the general public;

6. Collecting, analyzing, and disseminating best practices and developing implementation guides and tools;

7. Monitoring and conducting assessment of national implementation efforts, holding governments accountable for non-compliance or slow implementation

8. Fostering better communication, coordination, and networking among 1540 stakeholders.

The discussion below examines several categories that require additional attention from civil-society groups and from other stakeholders. It also offers a number of observations and recommendations that cut across these broad categories and underpin the overall effectiveness of civil-society engagement in 1540 matters.

RESPONDING TO NEEDS

In all likelihood, civil society can contribute most effectively in areas national governments and international organizations have identified as priorities, and on which they have sought external input. At the Vienna Forum, for example, experts from the 1540 Committee pointed out that drawing up training programs, compiling effective practices, and developing templates and implementation guides are some areas in which civil-society involvement is highly desirable. The "Guide to National Implementation of UN Security Council Resolution 1540 (2004)" published by VERTIC and the "Africa Guide to UNSCR 1540" issued by the Institute of Strategic Studies are illustrations of prior work in this area.

Additional possible areas for engagement include preparing for the next UNSCR 1540 Comprehensive Review (2016), further developing the 1540 matrix, and executing implementation assessments that go beyond legislative actions reported by national governments to provide analysis of actual implementation efforts. The 1540 Committee has identified these and similar needs in its program of work for 2013-2014. Nongovernmental experts, academia, and industry could also help member states and international organizations by contributing to areas that have received less attention from governments in the 1540 context, such as biological weapons, means of delivery, and national export control lists. This list is not exhaustive, but it does indicate certain opportunities and real demands that civil society could meet.

MAKING 1540 RELEVANT

As part of efforts to bring all countries into full compliance with UNSCR 1540, civil-society groups can promote the resolution and its goals in regions where other priorities take precedence. They can demonstrate the benefits of aligning 1540 implementation with developmental goals and socioeconomic objectives, and also in relating 1540 issues to the larger picture of safety and security, preparedness for incidents involving hazardous materials, and efforts to enhance border security, human and animal health, agricultural security, and industry development.

TRAINING AND CAPACITY BUILDING

Capacity building in the UNSCR 1540 context generally involves civil-society bodies' providing national governments or private groups with training or similar programs on CBRN matters. This is an important and significant part of civil-society contribution to 1540 work, and it should be continued and strengthened. However, there is also ample room for capacity building within civil society itself. Training programs for international civil-society representatives can be extremely useful for strengthening the capacity of local civil-society groups in Africa, the Middle East, and other regions where such expertise is still wanting.

As part of efforts to bring all countries into full compliance with UNSCR 1540, civil-society groups can promote the resolution and its goals in regions where other priorities take precedence.

In this regard, more could be done to pool expertise, know-how, and tools among civil-society groups. Newcomers to the field could learn through train-the-trainer programs presented by those who already have experience. Such training could be offered in a number of areas, from legislative assistance, to efforts to promote the relevant treaties and conventions, to export controls, biosafety and biosecurity, security culture, and ethics.

Train-the-trainer workshops and programs for university professors and researchers could propagate national expertise in regions and countries where few cadres specialize in CRBN and 1540 issues. These programs could also include preparing and sharing training materials and curricula, discussing emerging issues, and refining methodology.

Critical to capacity building aimed at civil-society groups and other 1540 stakeholders are quality training materials, including online resources on CBRN threats, security culture, and other 1540-relevant topics. With effectiveness and sustainability in mind, these programs and materials must be customized to specific regions and translated into stakeholders' languages. Civil-society organizations can help translate

such materials and adjust them to particular national and regional circumstances.

FOSTERING SECURITY CULTURE AND SOCIAL RESPONSIBILITY

In science and research, strong ethics and security culture are the best insurance against threats from new, overlooked, or emerging technologies, particularly in the biological and chemical fields. Civil society has already pioneered critical work on fostering security culture as it pertains to nuclear materials and technologies. In the chemical and biological domains, nongovernmental groups have fostered codes of conduct and stronger ethics for scientists and researchers. Technical, scientific, and academic groups are critical to promoting CBRN security culture and ethics, the further development, promotion, and adoption of codes of conduct, and self-regulatory mechanisms. This role is widely recognized and warrants continued support and reinforcement.

NURTURING CONSTRUCTIVE DIALOGUE WITH GOVERNMENTS

In addressing the capacity of various civil-society groups and their relationship with national governments and international organizations, one cannot avoid discussing the relationship between governments and civil society. This relationship defines the spectrum and the scope of civil society's involvement in 1540-related matters to a major degree. In some countries, think tanks, academia, or charitable organizations are already integral to the community of 1540 stakeholders. Other governments choose not to involve civil society in national initiatives as standard procedure owing to mistrust of nongovernmental actors. Still others view 1540-related activities as part of national security strictly defined. Governments of such leanings exclude civil society from the process as a precautionary measure.

The 1540 Committee work program for 2013-2014 notes that the Committee will "consider and seize opportunities, as appropriate, for direct interaction, with their States' consent, with relevant industry groups, academia and civil society." This statement recognizes that civil-society involvement varies from state to state, and that different governments take different approaches to civil-society engagement. Widening the circle of countries that accept counsel and help from civil society is extremely important. UN Secretary-General Ban Ki-moon, UN High Representative for Disarmament Angela Cane, and other key figures have used their bully pulpit to raise the credibility of civil-society groups and facilitate their constructive impact.

NETWORKING AND PARTNERSHIPS

In some countries, attitudes toward cooperation might be favorable, but civil society is underdeveloped or has limited expertise and capacity. In such cases the capacity-building efforts discussed above play a crucial part in strengthening expertise and skills. This approach is particularly important for broadening the geographic diversity of civil-society actors. In addition to training programs, support from civil-society networks—including networks at the regional and subregional levels—could measurably improve the practices of civil-society organizations while buttressing their individual and collective capacity. It could also help build lasting relationships based on trust and recognition with their respective governments.

Successful models of such coalitions and networks in the WMD area include the CWC Coalition, which formed around CWC implementation, and the Fissile Materials Working Group, a coalition of nongovernmental organizations, think tanks, and experts established in 2009 to promote the nuclear-security agenda. Both organizations have a strong record of setting the agenda, providing critical analysis of governments' policies and implementation records, facilitating implementation, and ensuring transparency and accountability.

COMMUNICATION AND COORDINATION

Establishing regular communication among international organizations, national governments, and civil society groups is of the utmost importance. Such communication should encompass consistent and reliable means for providing and finding information about activities, needs, and modes of civil-society involvement. This is relevant for communication and information-sharing between civil-society groups and other stakeholders, as well as among civil-society groups themselves. Designating a point of contact—for example, an expert from the 1540 Committee—for communication and coordination with civil-society groups is one possible solution. Establishing a 1540

civil-society working group or coalition that represents the larger civil community and serves as a coordinating body and interlocutor with other stakeholders should be considered as well.

Communication among civil-society groups and other stakeholders could be facilitated by a number of means, including web-based platforms or social media. Traditional means of information dissemination and sharing, such as printed media and workshops, should also continue to be employed. Publications such as the 1540 Compass represent a welcome development. At the same time, periodicals and reports that cover a broader set of issues related to WMD security and nonproliferation, including the Nonproliferation Review and BioWeapons Prevention Project Monitor, need to be better utilized to promote 1540-related issues and goals.

FINANCIAL ISSUES

An often-cited limiting factor on expanding civil-society involvement in 1540 matters is insufficient funding. The global economic situation remains unfavorable, particularly in countries that have traditionally provided the bulk of financial support to civil-society groups. Still, several international organizations, including the European Union, the 1540 Committee, and the OPCW note that funding often is not the major roadblock to financing civil society work. Rather, the problem is a mismatch between governments' needs and offers of help. Civil-society groups and organizations must communicate their expertise and capabilities to organizations and governments more clearly, focus their proposals on concrete, specific ideas and initiatives that are directly linked to 1540 issues, and be proactive about learning about funding opportunities and implementation priorities.

RECOMMENDATIONS

A comprehensive and successful response to WMD threats, including those UNSCR 1540 is designed to combat, requires a whole-society approach, including more robust contributions from civil society. This could be achieved through steps and strategies taken by civil-society groups themselves, as well as by other stakeholders. Several recommendations below could prove useful:

A comprehensive and successful response to WMD threats, including those 1540 is designed to combat, requires a whole-society approach, including more robust contributions from civil society.

- Focus on capacity building via training, networking, and communication. Strengthening capacity and expertise among civil-society groups active across an array of geographical regions and issue areas is critical to building overall national and regional capacity.

- Civil-society groups should be proactive about offering their expertise to relevant international organizations and governmental actors, align their offers more closely with governments' current priorities and long-term goals, and take the initiative in communicating with the 1540 Committee, with other stakeholders, and among themselves.

- Civil-society groups should also consider establishing a working group or coalition of groups working on 1540-related topics to facilitate networking, communication, and coordination efforts. They should also coordinate and cooperate with existing networks engaged in WMD security and other relevant fields.

- Civil-society groups should also promote UNSCR 1540 and their role in implementing the resolution when they take part in gatherings dealing with WMD threats. For example, they could deliver a "gift basket" from civil society on 1540 implementation issues at the 2014 Nuclear Security Summit in The Hague.

- The 1540 Committee and its experts should take full advantage of civil-society groups' expertise, experience, and interest in 1540 issues. It would be beneficial to regularize interaction and coordination between the Committee and civil society, including appointing a Committee expert as a liaison with civil society and inviting representatives from civil society to working-group meetings and other forums.

Partnerships with the private sector to prevent proliferation

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Business has a key role to play in preventing the proliferation of WMD, but the question is how to mobilize business when the short-term financial interests and worldview of individuals and companies may run counter to nonproliferation objectives. Project Alpha's partnership approach is one solution that can complement a strong national legal framework.

National implementation of export controls and related measures is improving. As a result, the likelihood of overt WMD proliferation is reducing. Nonetheless, it is clear that, even if all countries implemented effective export controls, proliferation could still continue through illicit trade. At the same time as it addresses the inadequate implementation of export controls at the national level, the international community must also take steps to address the proliferation challenges posed by international supply chains.

There are reasons to be optimistic about the overall prospects for reducing proliferation. Few companies make the items of highest concern, and, for the reasons detailed below, such firms are unlikely to sell goods directly to end users of concern. Nonetheless, sensitive technologies too often find their way into programs of concern after shipment to customers or business partners in third world countries.

Since 2011, in response, Project Alpha has sought to mobilize the private sector to counter proliferation. Alpha's approach, termed anti-proliferation, supplements national implementation of export controls by building resistance to proliferation into the supply chain. Exactly what this entails depends on the supply chain of the business and the nature of the company's goods. For many firms, compliance with the law will be sufficient to prevent their goods from ending up in programs of concern. Few would seek their goods illicitly. It is imperative to take additional measures for manufacturers whose technology is more sensitive and may be sought illicitly.

To this end, the British government has worked with experts from industry and experts associated with Project Alpha to draft good practices for corporate standards to support nonproliferation. The resulting measures (see below), which form the basis of Alpha's Partners against Proliferation Initiative, were recognized by the Nuclear Suppliers Group (NSG) as a good national practice and are available via the NSG website.

WHAT SHOULD FIRMS DO?

Business clearly must comply with the law. Failure to do so can result in export bans, fines, imprisonment, and more. However, as highlighted above, since proliferation usually occurs indirectly through a third party or country, it is relatively rare that the manufacturer of a sensitive item will supply it directly to a program of concern and, in so doing, breach export controls. An intermediary may, of course, breach such controls to send the goods on to the program of concern. Depending on the strength of the export controls in the country, this may or may not result in prosecution. To prevent proliferation business must therefore go beyond compliance, but businesses need help in understanding what this means in practice.

To this end, the purpose of the measures set forth in the box below is twofold. First, by conducting due diligence, screening inquiries for sensitive goods for abnormalities, and maintaining a systematic approach to export compliance, the risks that any one firm's products can be diverted will be much reduced. Second, by publicly adopting such measures, it is hoped that other firms will be motivated to adopt similar practices. Alpha has seen this work in practice. For example, Siemens in the United Kingdom, an Alpha Partner, has worked to educate not only its distributors but also its suppliers about the implementation of nonproliferation measures. It is notable that while Alpha's core activities have related to manufacturers and exporters, the guidelines are almost directly transferable to other sectors, including the insurance industry, shipping industry, and finance industry. Therefore, Alpha has launched initiatives intended to

ensure that companies in these sectors do not contribute to proliferation. This includes drafting good-practice guidelines on nonproliferation for the insurance industry.

Alpha's Partners Initiative builds upon these measures. It is not sufficient simply to ask companies to adhere to these good practices. Instead, Alpha has put in place a range of guidance, information, and training to enable firms to adhere to them more easily. Alpha's guidance includes country profiles on proliferation and diversion risks, so that company officials can understand when additional due diligence should be undertaken. It includes guidance on how to conduct due diligence, since the type of due diligence required may vary depending on the type of trade proposed.

Beyond this, Alpha has also sought to raise awareness and to build a community of practitioners through which to share good practices. Sector-specific outreach events have been held for hundreds of firms trading in technologies of potential proliferation concern. Alpha's nongovernmental approach has enabled the project to work with companies around the world, with workshops being held for metals and composites firms in China, manufacturers in the United States, and firms in Europe from all sectors.

WHY SHOULD COMPANIES CARE?

It was suggested at the beginning of this article that few companies manufacture the items of highest proliferation concern, and that these firms are unlikely to knowingly supply their goods to programs of concern in defiance of export controls. It could be argued, however, that the exercise of social responsibility within these firms can only go so far toward preventing proliferation. After all, there have been well-documented cases in which proliferation occurred through the supply chain, even when the manufacturer had in place a strong export control system.

The good news is that there are grounds for optimism not only about general trends in nonproliferation, as set out above, but also about the risks of diversion in the supply chain. The primary reason for this is that market forces can converge to make proliferation unattractive from a business perspective, not only for manufacturers but also for the other elements of a supply chain.

To illustrate this point, it is helpful to consider two examples. The first is a large Chinese state-owned entity that manufactures a wide range of advanced technologies for use in the aerospace, defense, space, or electronics sector, or some other sector. This entity is likely to wish to export to and import from the international marketplace. For example, Chinese manufacturers of carbon fiber continue to lag behind international manufacturers in terms of performance characteristics and hence are dependent on imports. Since the U.S. government designated such entities as complicit in proliferation during the last decade, such entities have demonstrated, at least publicly, a willingness to comply fully with export controls and sanctions measures.

The second type of entity is a distributor in a third country that wishes to supply proliferation-sensitive products on behalf of one of the handful of manufacturers of these items. The distributor may be aware that it could charge a premium price for selling these items to a prohibited end user. However, should this transaction come to light, the distributor would risk losing its contract to sell not only these manufacturers' goods, but potentially goods from other suppliers. Note, however, that for the most sensitive goods, the company may opt not to use a distributor at all, because of the risk posed by the distributor.

A false front company could claim to be a legitimate entity operating in either of these categories. For obvious reasons, however, front companies tend to be unattractive business partners. They are unlikely to have significant assets, given that they could be closed down rapidly. They also may find it difficult to get credit because they lack established records of aboveboard trading. The measures outlined in the box below should ensure that exporters identify such firms and take steps to ensure their goods are not diverted.

This potential alignment between nonproliferation interests and market forces is a powerful one. Alpha's Partners Initiative seeks to capitalize upon it by ensuring that manufacturers and exports are aware of the long-term risks to a business that could result from failing to implement the measures set out below.

CONCLUSIONS AND RECOMMENDATIONS

The private sector's potential role in preventing proliferation is well understood. However, compliance

with export controls alone is insufficient to prevent the illicit trade. Instead, businesses should take steps to ensure that they do not trade with entities of concern and should solicit support to construct supply chains that are resistant to proliferation. Through a variety of levers, businesses can be encouraged to take action to avoid proliferation. For this to happen, however, the international community must understand what it is that business can offer, set clear expectations for businesses as to what measures should be taken, and ensure that gaps in information and training are filled. Now that most states have in place a system of export controls and are showing restraint with regard to transfers destined for possible use in proliferation, getting the relationship with business right is perhaps the single biggest change that could be made to prevent future proliferation.

UNSCR1540 calls on states to find appropriate ways to work with industry, but, in so doing, explicitly recognizes that outreach to individual firms is a national rather than an international competence. There are, however, aspects of private-sector engagement that can be coordinated at the international level. The good-practice guidelines recently recognized by the NSG provide a case in point. While such guidelines cannot be binding, they do provide a basis for coordinated efforts to reach out to industry. Similarly, while training and information must always be tailored to the laws of the jurisdiction in which a business operates, it is entirely feasible to adopt an export compliance competence framework at the international level against which training can be delivered. Industry engagement must be based on lasting partnerships and open dialogue. A further recommendation, therefore, is that thought be given to establishing an industry-engagement working group or similar forum where practitioners can come together to share experiences and good practices on how to engage industry on nonproliferation issues. The final recommendation is reserved for national authorities, which should develop a private-sector outreach strategy that brings together not only manufacturers and exporters but also shippers, insurers, and financiers. Market forces can align to decrease the risks of proliferation, but business must first understand the risks proliferation poses to its long-term interests.

1. Implement internal systems to ensure due-diligence checks are carried out on potential customers and business partners and the goods, software, and technology that they wish to acquire, utilizing public information such as early-warning lists, red-flag checklists, and questionnaires provided by the United Nations, states, and other parties with an interest in supporting the multilateral nonproliferation effort, and consulting with the relevant government authorities as necessary;

2. Monitor, collate, and vet inquiries within the scope of due diligence, relating to the acquisition of proliferation-sensitive goods, software, and technology;

3. Consult government export control authorities before having any dealings with entities identified as being of proliferation concern, either by public sources, by corporate monitoring systems, or through contact with competent authorities in states themselves;

4. Implement aggressive efforts to share information about illicit attempts to procure items for WMD programs with security and other relevant agencies in the state where they are established, and with business partners and others in instances where the state judges that broader publicity would be appropriate;

5. Promote the adoption of due diligence and information-sharing within the supply chain and with other business partners within the boundaries of legitimate protection of business and company information;

6. Incorporate nonproliferation measures and export control compliance into existing Corporate Social Responsibility statements;

7. Encourage relevant industry-wide trade and professional bodies to recognize the importance of supporting and encouraging the nonproliferation effort and the measures set out herein; and

8. Foster an open and transparent relationship with appropriate government and regulatory authorities.

Evolving efforts of the 1540 Experts

Terence Taylor
COORDINATOR, 1540 GROUP OF EXPERTS

As we go around the world, my colleagues and I often find that many people do not fully understand the relationship between the experts, the 1540 Committee, states, and the UN Secretariat. To begin with, it might be helpful to explain this relationship briefly. The experts are appointed directly by the UN secretary-general, now under the terms of UN Security Council resolution 1977 (2011) (as amended by resolution 2055 (2012)). The secretary-general selects them, with advice from the 1540 Committee, from candidates proposed by member states. The experts are not representatives of the states from which they are drawn. Rather, they are independent consultants chosen to provide objective technical advice that helps the 1540 Committee work toward implementation of the resolution. Still, they bring with them a wealth of regional experience and technical expertise that covers the full span of resolution 1540 (2004). As a group, they provide support directly to the chair and members of the Committee. A key element of this support is working directly with national government officials, regional organizations, and international professional organizations such as the International Atomic Energy Agency, the Organization for the Prohibition of Chemical Weapons, the World Customs Organization, and Interpol. Naturally, these activities require close cooperation with the UN Secretariat, in particular the UN Departments for Disarmament and Political Affairs (UNODA and UNDPA).

Now that most of the group has been in place for a little over six months, it is clear to us that one of the biggest challenges facing governments is the need for continuous attention to achieve effective implementation of the resolution. The nature of terrorism, the scientific and technological environment, and the political context are constantly changing, as are the strategies and tactics of non-state actors engaging in terrorism and related criminal activities. Like a living organism, therefore, methods for implementation and reporting under the resolution must constantly evolve and adapt to match this dynamic environment. Resolution 1540 was drafted precisely to allow for this. For example, there is no prescribed format for reporting national data or the development of voluntary national implementation action plans. States can take stock of local conditions and capacity, then report relevant information in ways that suit them best. We have noticed that within regions, states sometimes collaborate and develop similar formats. These formats will undoubtedly change in response to scientific, technological, and political changes. If these evolutionary changes come from states themselves, they are all the more likely to be adhered to, and thus more effective. We expect to see growth in what can be described as effective practices that can be shared between states and with the 1540 Committee. An important task for the experts will be to record these effective practices to facilitate sharing them.

Regional and subregional organizations play an important role in promoting the development of national implementation plans and the sharing of effec-

Amb. Kim Sook, Chair of the 1540 Committee (center), delivers an address at a meeting of the OSCE Forum for Security Cooperation on 22 May 2013. Amb. Giedrius Čekuolis of Lithuania (left) is the Chair of the FSC.

tive practices. For example, the Organization for Security and Cooperation in Europe, working through its Conflict Prevention Center (CPC), has developed a network of points of contacts. It organizes and hosts meetings, with support from UNODA, to help states meet their obligations under resolution 1540. The 1540 group of experts participates in these endeavours. The group has taken part, for example, in meetings with partners from the Commonwealth of Independent States in Minsk, Belarus. Officials from Bosnia and Herzegovina have conferred with CPC staff in Vienna and at a subregional meeting of Balkan states in Belgrade, Serbia. In the Caribbean region, two experts accompanied by the 1540 chair, Ambassador Kim Sook, conducted a formal visit to Trinidad and Tobago. Attendees undertook detailed and practical discussions of 1540 implementation. A representative from the Caribbean Community helped make the regional connection while facilitating the sharing of effective practices with other members of this regional organization. Engagement and support on the part of regional organizations remains a key element in promoting the implementation of the resolution.

Finally, I would like to stress that the essence of the resolution lies less in procedures than at the sharp end of policy execution—namely the practical impact of national plans and regulation on mitigating the risk that adversaries will put WMD-related materials, technology, and knowledge to terrorist or criminal uses. The breadth of the scientific disciplines is a challenge, as is the broad range of agencies that needs to be involved in the process. This is a key reason for engaging with a wide range of stakeholders and tapping expertise from the government, academic, and industrial sectors.

The group of experts is greatly encouraged by the gathering momentum of invitations to visit states and work with them as they develop implementation plans. The challenge confronting us and other key partners in this endeavour—in particular UNODA—will be to garner sufficient resources to meet these requests.

The views expressed in this article are those of the author and do not necessarily represent those of any United Nations entity or any other organization with which the author is associated.

Ukraine roundtable on WMDs and dual-use technologies

Organized under the joint auspices of the UNODA and the Science and Technology Center in Ukraine (STCU), the Roundtable was a "first cut" attempt at exploring novel and effective approaches to building security cultures in countries that are members of the STCU agreement.

The Science and Technology Center in Ukraine began operations in 1993 with the mission of helping former Soviet WMD scientists and engineers make the transition to self-supporting, peaceful research activities. In so doing the STCU helps stop the spread of WMD expertise. STCU is governed by Canada, the European Union, Ukraine, and the United States, and also includes in its membership Azerbaijan, Georgia, Moldova, and Uzbekistan. Over time the STCU Conversion Program, an initiative developed to target former weapons scientists and redirect their knowledge to peaceful activities became a successful tool that has supported 18,000 scientists from Azerbaijan, Georgia, Moldova, and Ukraine. The program has funded 1,700 projects worth over U.S. $250 million. This is an example for UNODA as it develops linkages and promotes best practices relating to nonproliferation. Additionally, it provides an opportunity to examine the prospects of and problems confronting more specific strategies undertaken by the 1540 Committee and Global Partnership Program to promote exchanges of experiences on nonproliferation.

The Roundtable itself emphasized the practices of governments, international organizations, and WMD experts can employ to facilitate exchanges of experience and development of a platform for collaboration that can be incrementally expanded from the regional to the international level. This approach demands

joint effort, of which the STCU/UNODA collaboration is a good example. UNODA promotes practices to prevent non-state actors from gaining access to nuclear, chemical, and biological weapons and their means of delivery, and STCU works to develop and implement these practices. Events of the past decade certainly necessitate significant improvements on the part of both governments and international organizations. Revelations about illicit nuclear-material smuggling, as well as the public-health risks from radiation emergencies and intentional or unintentional biological and chemical threats, are just a few of the contemporary security concerns that call for this kind of multilateral S&T solution.

The Roundtable began with opening remarks from the STCU executive director, Ambassador M. Michael Einik; the U.S. ambassador to Ukraine, John Tefft; the ambassador of Canada to Ukraine, Troy Lulashnyk; the chief of UNODA's WMD Branch, Dr. Gabriele Kraatz-Wadsack; and the director of the Directorate for International Security and Disarmament, Ministry of Foreign Affairs of Ukraine, Mr. Oleksandr Aleksandrovich.

Ambassador Einik noted that the two organizations share extensive experience in WMD expertise, and that this experience can be shared among the participants. It is important to reevaluate where we are now and decide where we need to go as CBRN threats continue to arise. The STCU evolved in collaboration with the Global Partnership Program and the Closed Nuclear City Program and expanded to many new areas like biological and nuclear forensics. Now is the time for new evolution and transformation through partnership with UNODA.

Ambassador John Tefft emphasized that the nonproliferation regime is a responsibility not just of nuclear weapon states but of non-nuclear weapon states. A reduction in the number of deployed and stored nuclear weapons is one of the key objectives to be pursued. Many agreed on the need to promote a culture of security among former weapons scientists and young experts via training, workshops, and other educational means. Speakers emphasized the achievements of the STCU Conversion Program. They also noted its importance, given the past size of the former Soviet Union's weapons complex. The need for such measures cannot be overstated.

The representatives from STCU recipient countries maintained that more efforts must be undertaken to interdict WMD transfers, improve nuclear security, and live up to requirements to control the transfer of technology. The surest way to achieve such improvements is through ongoing dialogue between governments and academic and educational entities. Centers of excellence that gather expertise from these fields will help raise people's awareness of CBRN threats while facilitating the development of partnership mechanisms and linkages in the region.

Indeed, the feedback from the Roundtable suggests that such collaboration will enable governments, academia, and scientists to take advantage of the opportunities offered by joint UNODA/STCU activities. The diversity of entities represented at the Roundtable is a testament to the universal interest in pursuing these opportunities. It is clear that governments have a significant role in the process, and that UNODA and the STCU are keen to examine what this means in the context of nonproliferation strategy, and in the context of new patterns of collaboration. As noted by Dr. Igor Khripunov in his presentation: "Each government must contribute to a more stable international, regional, and national environment as a precondition for combating CBRN threats, and the role of outreach events and initiatives is crucial to advance good practices at all levels. It's crucial to optimize the role of the human factor in dealing with CBRN risks and complying with their international obligations, including those under UNSCR 1540." Optimizing the human factor will require strategies for collaboration, as well as exploration of the benefits and possible drawbacks of implementing these strategies.

The Roundtable featured a well-balanced, formal and informal exchange of views. As a follow-up to this event, UNODA and the STCU plan to hold a "GUAM [Georgia, Ukraine, Azerbaijan, and Moldova] Round Table on building Security Culture" in November 2013 in Baku, Azerbaijan. The event will focus on developing a platform for cooperation and defining practical steps that will help build a security culture in the region that encompasses all relevant stakeholders. Building a culture of security will beget greater internal and external transparency and easier compliance with laws and regulations, among other benefits. Events of this kind thus represent a pathway to achieving and preserving UNSCR 1540's main objectives.

Events of Interest

DATE	EVENT	LOCATION
28 Oct - 1 Nov	"Workshop on Communication with the Public in a Nuclear or Radiological Emergency: Training course on first response to radiation emergencies: procedures for ports and customs offices (RAPTER for customs offices)"	Brussels, Belgium
29-31 Oct	"CBRNe Convergence 2013: Covers dealing with contaminated remains and company exhibitions"	San Diego, USA
29 Oct – 1 Nov	"3rd Association of Biosafety for Australia & New Zealand (ABSANZ) Biosafety Conference: To promote biosafety, facilitate networking between biosafety/security professionals, and provide access to expertise"	Auckland, New Zealand
5-6 Nov	"International CBRN Symposium: Furthering the Global Partnership in Nuclear Security, Biological Security, and Scientific Engagement in the WMD field"	Shrivenham, UK
11-15 Nov	"Training Course on the application of the Requirements (GS-R-2), guidance on general aspects (GS-G-2.1) and generic criteria (GS-G-2): focusing on emergency preparedness and operational levels"	Vienna, Austria
11-12 Nov	"Seventh Conference of the High Contracting Parties to Protocol V on Explosive Remnants of War of the CCW"	Geneva, Switzerland
12-14 Nov	"Workshop on Notification, Reporting and Requesting Assistance (Reaching Critical Will)"	Vienna, Austria
13 Nov	"Fifteenth Annual Conference of the High Contracting Parties to Amended Protocol II of the CCW"	Geneva, Switzerland
14-15 Nov	"2013 Meeting of the High Contracting Parties to the Convention on Certain Conventional Weapons"	Geneva, Switzerland
25-29 Nov	"Regional Training Course on New Technologies for Individual Monitoring and the results for the Inter-Comparison Exercise"	Rabat, Morocco
2-6 Dec	"Conference of States Parties to the Chemical Weapons Convention, 18th Session: Annual report on performance of activities; OPCW program in Africa"	The Hague, The Netherlands
1-3 Jan 2014	"International Preparedness & Responses to Emergencies & Disasters led by CATO"	Tel-Aviv, Israel
3-6 Mar	"NCT CBRNe EurAsia"	Kiev, Ukraine
29-30 Apr	"International Conference on Disaster and Emergency Management: Brings together leading academic scientists, researchers and scholars to exchange and share their experiences and research results about all aspects of disaster and emergency management, and discuss the practical challenges encountered and the solutions adopted"	Paris, France
5-9 May	"SPIE DSS 2014: Includes symposiums on mine/chemical detection (CBRNE) and industry exhibitions"	Maryland, USA

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