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US-ROK Nuclear Nonproliferation Cooperation The Status of Global Nonproliferation Cooperation

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Speaking to reporters four months before leaving office, then-Secretary of State Condoleezza Rice defended the Bush administration's record on nonproliferation. She maintained that history would show that the administration had "left this situation or this issue in far better shape than we found it."¹ Critics of the President's nonproliferation policy immediately assailed this statement, pointing to incomplete work in securing nuclear weapons and materials in Russia and a growing nuclear threat in both Iran and North Korea as evidence of the administration's poor management of the issue. Opponents also saw a weakening of the formal denial regime and a concomitant growth in the unwillingness of even some like-minded states to fully partner in more rigorous preventive controls. Moreover, beyond the expanding number of nuclear armed states, intelligence agencies continued to warn of an enduring interest among terrorist groups in obtaining a weapon of mass destruction (WMD). A growing availability of WMD materials along with the know-how to fashion them into weapons left open a gaping window of opportunity for terrorists bent on perpetrating a catastrophic event. This occurred despite President Bush's regular assertions that preventing proliferation was a central focus of his administration.

Similarly, the Clinton administration struggled with many of the same challenges that prevented President Bush from meeting what the 9/11 Commissioners called the greatest danger confronting the world: the threat of a weapon of mass destruction falling into the hands of terrorists. Under President Clinton, no new agreement to reduce strategic arms was completed. India and Pakistan developed and tested nuclear weapons. North Korea and Libya expanded their offensive nuclear programs, with Pyongyang suspected of engaging in illicit sales of sensitive equipment. Pakistani nuclear hero A.Q. Khan developed and operated a black market nuclear network that spanned the globe and may have had direct contact with Osama bin Laden.² And while the first Clinton administration deserves considerable credit for building the existing network of cooperative programs to address the post-Soviet nuclear weapons legacy, his second administration presided over flat lined funding requests for those efforts and largely unimaginative responses to evolving proliferation threats.

In short, although the proliferation issue remains fodder for both political parties in Washington in their efforts to score political points, the inability of the United States to

¹ Glenn Kessler, "Rice: U.S. Has Aided in Nuclear Regulation," *The Washington Post*, September 8, 2008, <http://www.washingtonpost.com/wp-dyn/content/article/2008/09/07/AR2008090702490.html>.

² George Tenet and Bill Harlow, *At the Center of the Storm: My Years at the CIA*, HarperCollins: New York, 2007, 261.

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implement a more seamless prevention program against WMD proliferation has been, and continues to be, a thoroughly bipartisan failure. Furthermore, while other developed country governments have spoken forcibly in support of a more rigorous nonproliferation agenda, their responses have generally been lackluster, allowing the US to take the lead in both policy formulation and resources (See Table 1, page 11).

Like both of his predecessors, President Obama arrived in Washington vowing to rethink the role of nuclear weapons and to make the proliferation threat a top national security priority. Speaking in Prague in April of 2009, the President outlined an expansive agenda to address what he referred to as, “the most dangerous legacy of the Cold War.”³ That agenda included, *inter alia*:

- the negotiation of a follow-on to the US-Russia Strategic Arms Reduction Treaty;
- the ratification of the Comprehensive Nuclear Test Ban Treaty (CTBT);
- the conclusion of a new treaty that verifiably ends the production of fissile materials intended for use in nuclear weapons;
- a return to multilateralism through the strengthening of the global Nuclear Non-Proliferation Treaty;
- a Global Summit on Nuclear Security with the aim of eliminating all excess nuclear material by 2012;⁴ and perhaps most strikingly,
- a commitment to pursue a world without nuclear weapons.

Implicit within the President’s broader nonproliferation strategy was a formal linkage between strategic weapons reductions and wider global nonproliferation objectives—a linkage deliberately and forcefully denied over the previous eight years. By both reducing the number of weapons in the US and Russian arsenals and ultimately aiming for their complete abolition, the administration’s stated goal is to tighten global nonproliferation standards. The administration believes that tangible progress toward nuclear disarmament by the two remaining nuclear superpowers will foster a more receptive environment internationally for more rigorous enforcement of nonproliferation mechanisms. Greater willingness to participate in domestic enforcement of global nonproliferation standards by states with the means to develop or share nuclear technologies with a terrorist organization, according to this rationale, will decrease the likelihood of a WMD terrorist incident.

The President has seemingly wasted little time acting upon his rhetoric. Long moribund negotiations with Russia on cuts to Cold War strategic nuclear arsenals are underway—albeit haltingly. Plans to co-host with Moscow a global meeting on proliferation in Washington in April 2009 are progressing. The President’s legislative team has begun counting votes in the Senate with an eye toward ratification of the CTBT. New and experienced personnel with expanded responsibilities have been put in place at the White

³ White House Office of the Press Secretary, “Remarks by President Barack Obama,” Prague, Czech Republic, April 5, 2009, http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/.

⁴ White House Office of the Press Secretary, “Remarks by President Barack Obama,” Prague, Czech Republic.

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House and across the Departments of Energy, State, Defense, and Homeland Security with the stated goal of making nonproliferation a central element of the US—and indeed global—security strategy.

But even as the new administration vows to return the United States to its role of humble leader in the field of nonproliferation (and even push toward the goal of ultimate elimination of nuclear weapons), the White House and its most ardent supporters are realizing quickly that implementation of their agenda will be an inordinate challenge. As time passes it is clear that the nonproliferation failures of the past eight years are not solely attributable to George Bush's à la carte multilateralism. For instance, recognizing that the policy of isolation was not having its desired effect, in 2007, the Bush administration and four other countries agreed to provide North Korea with \$400 million in aid after the DPRK began dismantling its nuclear facilities. During the campaign, then-candidate Obama made the case for engaging North Korea with "aggressive, sustained, and direct bilateral and multilateral diplomacy" to resolve the nuclear issue.⁵ But early calls for détente in the Obama administration were met first with an April 2009 launch of a rocket over the Sea of Japan, and then by a nuclear test one month later. Meanwhile, the Iranian nuclear dialogue has shown even less promise. Seven years after public exposure of the A.Q. Khan black market nuclear network, illicit weapons shipments continue to be identified and seized as they transit the globe.⁶ A successor agreement to START II has yet to be concluded, and Russian intransigence in expanding cooperative threat reduction programs that isolate, secure, and eliminate excess weapons remains the principle obstacle to preventing that country from becoming what some experts term a "Home Depot" for terrorists bent on acquiring a nuclear weapon.⁷ Finally, one year into the Obama Administration, little appreciable acceleration of key international mandates and nonproliferation programs such as UN Security Council Resolution 1540 or the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction is thus far evident.

The lack of what some had hoped would be a revolutionary change in US nonproliferation policy in President Obama's first year in office should not be traced back to a lack of commitment in fulfilling the pledges of his campaign nor the ideas encapsulated in both his Prague speech and his Nobel acceptance speech last month in Oslo.⁸ Rather, in surveying the historical patterns of the last three administrations in the area of nonproliferation, two broad trend lines previously evident seem to be hampering the current President's more forward leaning agenda. The first is the simple reality all presidents must confront: making, much less legislating, change within the US political system is difficult—particularly in a bitterly partisan environment. Across the President's agenda, as described more completely below, the Administration is waging an uphill

⁵ Barack Obama, "Statement of Senator Barack Obama on the Agreement with North Korea," October 11, 2008, http://www.barackobama.com/2008/10/11/statement_of_senator_barack_ob_30.php.

⁶ Thomas Fuller, "Officials Seek Destination of North Korean Arms," *The New York Times*, Monday, December 14, 2009.

⁷ Graham Allison, "Nuclear Lessons," *The Boston Globe*, Wednesday, October 27, 1999.

⁸ See: The White House, "Remarks by the President at the Acceptance of the Nobel Peace Prize," Oslo, Norway, December 10, 2009, <http://www.whitehouse.gov/the-press-office/remarks-president-acceptance-nobel-peace-prize>.

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domestic political battle against both his detractors who accuse him of compromising US security in the name of international collaboration, and his proponents, who complain that he is not going far enough to push multilateral solutions to proliferation. The second challenge, as equally evident within the Obama administration as others, is the inevitable competition for attention and resources that invariably forces the nonproliferation agenda down the ladder of priorities. As the Obama administration has devoted considerable human, financial, and political resources to the ailing US economy, health care reform, financial sector reform, and other strategic priorities, an innovative, aggressive, and, most importantly, successful nonproliferation rewrite becomes increasingly unlikely.

Below is a brief outline of both the key treaty and non-treaty based tools of nonproliferation. As noted, the President has committed to expanding, strengthening, or accelerating virtually all of these mechanisms—a perhaps unprecedented series of proposed changes to the nonproliferation toolkit. Recognizing the challenges described above however, each has foundered to one extent or another amidst political opposition at home and an international environment where few have been willing to forcefully and pragmatically support the President’s agenda.

TREATY BASED TOOLS OF ARMS CONTROL AND PROLIFERATION PREVENTION

(i) *START Follow-On Treaty:*

On December 5, 2009, the Strategic Arms Reduction Treaty (START), a pact between the United States and Russia that limited strategic nuclear weapons and delivery systems, expired. Throughout his campaign for the White House, the President made clear that he intended to negotiate a new agreement that would help to redefine the role of nuclear weapons while maintaining key verification mechanisms to be lost with START’s expiration. The START follow-on treaty will reduce the number of deployed strategic warheads below the current limit of 1,700 to 2,200 (as mandated by the Strategic Offensive Reductions Treaty, or SORT) and lower limits on allowable strategic launchers. According to the President, successful completion of such an agreement would not only better align the superpower nuclear arsenals to today’s defense needs, but also demonstrate to other governments a reduced role for nuclear weapons in US and Russian security policy. Curtailing the role of nuclear weapons globally is a critical first step toward Obama’s ultimate goal of eliminating nuclear weapons. Negotiations on the new treaty have been ongoing since President Obama and Dmitri Medvedev’s first meeting in April 2009, and some US officials are voicing optimism that the countries will soon reach a deal.⁹

The follow-on treaty lacks full support in both countries. Some American critics believe that the START follow-on will limit the US conventional strike capability, and as such would make the US *more* dependent on its nuclear force.¹⁰ The Russian military has voiced some displeasure, noting that it will continue to develop nuclear weapons to

⁹ Steve Gutterman, “US Says Russia Arms Deal Close, Talks Resuming,” Reuters, January 13, 2010, <http://www.reuters.com/article/idUSTRE60C51W20100113>.

¹⁰ Baker Spring, “START Follow-On Treaty Could Interfere with Conventional Strike Systems,” Heritage WebMemo #2704, November 19, 2009, <http://www.heritage.org/Research/nationalsecurity/wm2704.cfm>.

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compensate for US/NATO conventional military superiority and to deter potential Chinese aggression.¹¹ When negotiators do agree to a deal, the treaty will still require support from two-thirds of the Senate to achieve ratification. Given the state of political discourse in Washington, a successful vote cannot be assumed. The failure to successfully negotiate and/or ratify a START follow-on agreement would present a serious blow to the forthcoming NPT Review Conference in May 2010, deeply complicating nonproliferation collaboration with governments around the globe—particularly those located in regions of growing proliferation concern.

(ii) *Comprehensive Test Ban Treaty (CTBT)*

In 1996, the Clinton administration signed the Comprehensive Nuclear Test Ban Treaty, which aims to ban all nuclear explosions (military or otherwise) in all environments. In 1999, an attempt to ratify the treaty failed in the Senate. In 2009, the Obama administration stated that it would “immediately and aggressively” seek ratification of the CTBT.¹² As noted, the President also made the test ban a plank in his April 2009 speech in Prague. Indicative of the administration’s enduring commitment to the agreement, Secretary of State Hillary Clinton stated during her confirmation hearings in January 2009 that the administration would ask Congress to fully fund the US contribution to the Comprehensive Test Ban Treaty Organization’s International Monitoring System. At present, several nations said they would be willing to ratify CTBT if the US achieves ratification. However, similar to the Senate debate in October 1999 that led to the rejection of the Treaty, CTBT critics continue to point out the potential inability of the United States to maintain the efficiency of its nuclear deterrent without testing. Moreover, they assert that a strong US nuclear deterrent force is essential for both maintaining security of the United States and for effective continued non-proliferation—an argument that directly contradicts the core of the President’s arms control/nonproliferation agenda. In the same vein, some believe that the verification and monitoring system within the CTBT is not adequate and open to evasion, and as such clandestine or rogue nuclear test would put the US at a serious disadvantage. Regardless of their veracity, these criticisms will make the ratification vote extremely difficult. Because of this, the “immediate and aggressive” characterization given the CTBT push early in the administration has given way to a longer term strategy—one that may become especially challenging as the mid-term elections in 2010 approach. Delay in US ratification of the test ban amidst growing expectations internationally will present a potentially harmful blow to global nonproliferation efforts across the board.

(iii) *Fissile Material Cut-off Treaty*

The Obama administration also has pledged to revive negotiations on a fissile material cutoff treaty (FMCT) that would outlaw the production of fissile material (plutonium and highly enriched uranium) for use in nuclear weapons. While India, China, and Pakistan have resisted the FMCT due to fears that they would not be able to produce nuclear

¹¹ Ariel Cohen, “A Nonstarter on Arms Control,” *New York Times*, January 8, 2010, <http://www.nytimes.com/2010/01/09/opinion/09iht-edacohen.html>; and Mikhail Tsyppkin, “The Russian Military: Today and Tomorrow,” presentation at The Hudson Institute, Washington, DC, August 24, 2009.

¹² White House Office of the Press Secretary, “Remarks by President Barack Obama,” Prague, Czech Republic.

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arsenals sufficient to deter their rivals, in May 2009 they finally agreed to begin negotiations at the Conference on Disarmament in Geneva. The breakthrough came on the heels of President Obama's landmark speech in Prague in which he called for a "new treaty that verifiably ends the production of fissile materials intended for use in state nuclear weapons."¹³ Concerns over North Korea's nuclear weapons and potential dangers of Pakistan's nuclear arsenal and/or fissile material falling into the hands of elements with ideologies hostile to Western interests helped revive discussion of the "Fissban." Enduring concern over monitoring and verification will continue to be an obstacle to ultimate agreement on a FMCT. Nonetheless, the agreement to proceed with negotiations was one of the few pragmatic bright spots on the President's nonproliferation agenda in 2009. However, Pakistan spent much of 2009 blocking progress on negotiations and has once again blocked the 2010 agenda at the Conference on Disarmament by proposing two additional items – conventional arms control at the regional and sub-regional level, and global regime on all missile aspects – thus forcing an adjournment for consultations.¹⁴ India is unlikely to accept Pakistan's proposals, thus placing the entire conference in doubt and casting an ominous shadow on the President's nonproliferation plans for 2010.

(iv) The Nuclear Nonproliferation Treaty (NPT)

The Treaty on Nuclear Non-Proliferation underwrites the majority of the international nonproliferation regime. Every five years, state parties meet to assess the progress of treaty implementation at the NPT Review Conference. The next conference is scheduled to be held in New York from May 3 to May 27, 2010. This review conference is widely seen as pivotal in consolidation of the nonproliferation regime, especially since President Obama made rejuvenation of the NPT one of his foreign policy priorities before and immediately after taking office—including a proposal to include penalties for withdrawal from the Treaty. The Obama administration sees the NPT as one of the cornerstones of its drive for complete nuclear disarmament. Because the NPT Review Conference in New York will be seen as a litmus test for the President's broader nonproliferation agenda, if the administration is unable to show pragmatic process on the array of international efforts described above, the Conference could well prove a catastrophic failure. Lack of US progress may provide the remaining nuclear powers with an opportunity to "slip the noose" of their own strategic reductions. Additionally, governments of the Global South, many of whom have long believed that the NPT is flawed at its core, may refuse further nonproliferation commitments while nuclear-armed nations continue to develop more advanced nuclear arsenals.

NON-TREATY BASED TOOLS OF PROLIFERATION PREVENTION

Of course, the multilateral treaty regime has not been the only element impeding unchecked proliferation of nuclear, biological, and chemical weapons, materials, and technologies. The latter half of the 20th century, when most treaty-based mechanisms were developed, was characterized by global trading patterns that were generally

¹³ White House Office of the Press Secretary, "Remarks by President Barack Obama," Prague, Czech Republic.

¹⁴ Jonathan Lynn, "Pakistan blocks agenda at U.N. disarmament conference," Reuters, Tuesday, January 19, 2010.

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predictable. Commerce, while international in scale, was relatively leisurely in pace. Although the forces of globalization and trade liberalization were gathering in the latter decades of the Cold War, they had not yet matured to a level where diverse networks of both licit and illicit middlemen facilitated access to the dual-use market for thousands of new and smaller independent producers, as is the case today.¹⁵ Regarding the nuclear threat, the scientific community capable of marrying weapon components to fissile material was limited in size and strictly governed by the P5. These factors both reinforced and strengthened an effective technology denial regime—much to the chagrin of some governments of the Non-Aligned Movement. Similarly, prior to the biotechnological revolution, the lion's share of advanced biological capabilities was found in the most industrialized states of the Northern hemisphere.

While each component of this treaty regime was designed to address a different point along the WMD prevention chain, each grew out of a central organizing principle—that the prevention of proliferation relied upon the denial of weapons, materials, and technologies. And for the most part, the regime worked.

By the 1980s, however, proliferation experts were sounding the same alarm as twenty years earlier—a mounting concern that led to the development of the modern nonproliferation regime. This time, the locus of concern was not proliferation among the developed states in the North, but on developing states in the Southern Hemisphere. Up to eighteen developing countries, assumed to be unstable or worrisome environments for nuclear development, were thought to be harboring nuclear ambitions.

Perhaps even more worrisome in the wake of the Cold War was the potential proliferation of WMD to the sub-state level. Terrorists' pursuit of a nuclear capability—and most notably that of al-Qaeda—has been well documented in the popular press. For years, the Central Intelligence Agency (CIA) in the United States tracked Al-Qaeda's fascination with weapons of mass destruction. The group's particular interest in chemical and biological weapons seemed to date back to Aum Shinrikyo's attack on the Tokyo subway system. Writing in 2007, former CIA Director George Tenet observed that Osama bin Laden and other leaders of the terrorist group viewed that attack as a model for achieving their own ambitions.¹⁶ A 2007 report by MI5's Joint Terrorism Analysis Center warns that one captured al Qaeda operative said that Osama bin Laden was planning an attack on “a par with Hiroshima and Nagasaki” in an attempt to “shake the Roman throne,” a clear reference to America and its allies.¹⁷ The following spring, the volume of “chatter” on a number of violent extremist websites suggested an impending al-Qaeda nuclear attack on the United States.¹⁸ In May 2008, al Qaeda posted a new video calling for the

¹⁵ For a compelling summary of the post-Cold War economic trends that facilitated proliferation, see: International Institute for Strategic Studies (IISS), Strategic Dossier, *Nuclear Black Markets: Pakistan, AQ Khan, and the Rise of Proliferation Networks*, 2007.

¹⁶ George Tenet, *At the Center of the Storm: My Years at the CIA*, (New York: HarperCollins: 2007): 260.

¹⁷ Dipesh Gadhre, “Al-Qaeda ‘Planning Big British Attack,’” *The Sunday Times*, April 22, 2007, <http://www.timesonline.co.uk/tol/news/uk/article1687360.ece>.

¹⁸ William McCants, “Going Nuclear,” *Jihadica*, May 27, 2008, <http://www.jihadica.com/going-nuclear/>.

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use of weapons of mass destruction against civilians.¹⁹ Last year alone, the International Atomic Energy Agency (IAEA) received reports of fifteen cases of illicit nuclear material possession or related incidents, and sixteen cases involving the theft or loss of substances.²⁰ The US government thus remains convinced that al Qaeda will continue its attempts to acquire chemical, biological, radiological, or nuclear material, and it would not hesitate to use them against the United States if it succeeds.²¹

In short, the changing nature of the proliferation threat and the growing challenge of building truly global agreement on the non-proliferation issue, particularly with the end of the Cold War, gave rise to new “extra-treaty” efforts to supplement a regime suffering under the strain of globalization, technology democratization, and the rise of catastrophic terrorism. Many of these efforts were developed and launched during the Clinton-Bush era, however, a rapidly changing global environment mandates that the Obama administration be aggressive in its continued evolution if the United States and other like-minded countries are to remain ahead of the proliferation threat. With these tools, the international community has the potential to create needed momentum in the non-proliferation arena.

(i) *Cooperative Nonproliferation*

Following the collapse of the Soviet Union, the US instituted the Cooperative Threat Reduction (CTR) program at the Department of Defense to secure and eliminate former Soviet nuclear, chemical, and biological weapons, materials, and expertise. CTR, after almost two decades of work, has made impressive progress. The US has deactivated 7,514 nuclear warheads, destroyed 32 nuclear submarines, and built a chemical weapons destruction facility that has eliminated 843 metric tons of nerve gas.²² Today, with work on former Soviet nuclear arsenals slowing, the Department of Defense (DoD) has increased its focus on biological threat reduction and counterproliferation capacity-building. While the program remains politically popular, the *National Defense Authorization Act for Fiscal Year 2010* requires the Secretary of Defense to develop new metrics “to measure the impact and effectiveness of activities of the Cooperative Threat Reduction Program,” possibly signaling funding fatigue in Congress.²³ Additionally, Russia continues to limit opportunities for biological threat reduction, raising growing sentiment in the United States and other contributing states to begin looking beyond Russia and the FSU to wider proliferation challenges around the globe.

¹⁹ Pierre Thomas and Theresa Cook, “Al Qaeda Supporters’ Tape to Call for Use of WMDs,” *ABC News*, May 27, 2008, <http://abcnews.go.com/TheLaw/FedCrimes/story?id=4941724>.

²⁰ See: International Atomic Energy Agency, Annual Report 2008, GC(53)/7 accessed online at: http://www.iaea.org/Publications/Reports/Anrep2008/anrep2008_full.pdf and Global Security Newswire, “IAEA Tracks Illicit Possession of Nuclear Materials,” 17 August, 2009.

²¹ National Intelligence Council, “National Intelligence Estimate: The Terrorist Threat to the US Homeland,” July 2007, http://www.dni.gov/press_releases/20070717_release.pdf.

²² Defense Threat Reduction Agency, “CTR Scorecard,” November 10, 2009, <http://www.dtra.mil/documents/oe/ctr/scorecard.pdf>.

²³ US Congress, *National Defense Authorization Act for Fiscal Year 2010*, Public Law 111-84, October 28, 2009, <http://thomas.loc.gov/cgi-bin/bdquery/z?d111:h.r.02647:>.

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Soon after CTR's inception, cooperative nonproliferation expanded to include complementary programs within the Departments of Energy and State. The Office of Defense Nuclear Nonproliferation in the National Nuclear Security Administration (NNSA) operates Energy's threat reduction programs. Like DoD, NNSA has achieved significant success in reducing WMD proliferation threats. Various programs have completed security upgrades at 93 percent of Russian sites of concern, installed radiation detection equipment at twenty-three "Megaports" and hundreds of border crossing, and engaged more than 16,000 personnel with weapons expertise in the former Soviet Union, Libya, and Iraq.²⁴ Arguments about liability and disposition methods have delayed significantly efforts to eliminate 34 metric tons of Russia's excess plutonium stocks.²⁵

The State Department also operates several threat reduction programs, including the Nonproliferation and Disarmament Fund (NDF) which reacts to unforeseen opportunities globally in an effort to stymie proliferation. The Global Threat Reduction Program has a heavy focus on scientist redirection, while the Export Control and Related Border Security (EXBS) program builds partner country capacity to detect and interdict illicit trafficking. Acting early in his administration, President Obama appointed an Ambassador-level appointee as the coordinator for threat reduction at the State Department. Her role is to reduce duplication of effort and to better coordinate with the interagency in order to accelerate these critical programs and ensure that weapons, materials, and relevant weapons expertise do not fall into the hands of proliferant states or terrorist organizations. It is this subset of programs that will play a central role in meeting President Obama's pledge to secure all nuclear material globally by 2013. Unfortunately, progress toward that goal has proven lackluster. No new efforts have been announced that would dramatically accelerate the current pace of threat reduction work, and the President's 2010 budget reflected only modest changes to President Bush's much maligned efforts in the CTR space. Indeed, while President Obama's Fiscal Year 2010 request for these programs (\$1.782 billion) constitutes a 15 percent increase over President Bush's Fiscal Year 2009 request (\$1.542 billion), Obama's request would generate a 3 percent *decline* when compared to the actual FY09 appropriation (\$1.847 billion).²⁶

(ii) *Global Initiative to Combat Nuclear Terrorism*

Founded in 2006 at the G8 Summit in St. Petersburg, Russia, the Global Initiative to Combat Nuclear Terrorism serves as a forum for collaboration on nonproliferation, counterproliferation, and counterterrorism. The Global Initiative aims to integrate the various capabilities of different governments into "the overall global architecture to

²⁴ National Nuclear Security Administration Office of Defense Nuclear Nonproliferation, "Detect, Secure, and Dispose of Dangerous Nuclear Material," October 2009, http://nnsa.energy.gov/nuclear_nonproliferation/documents/DNN_Brochure%28printer_friendly%29_9-10-09.pdf.

²⁵ Matthew Bunn, "Troubled Disposition: Next Steps in Dealing With Excess Plutonium," *Arms Control Today* 37.3, April 2007, http://www.armscontrol.org/act/2007_04/Bunn.

²⁶ Michelle Marchesano and Raphael Della Ratta with Kenneth N. Luongo, "UPDATED: Funding Analysis of the Fiscal Year 2010 Budget Request for International WMD Security Programs," Partnership for Global Security, July 2009, http://www.partnershipforglobalsecurity.org/PDFFrameset.asp?PDF=updated_analysis_of_fy10_budget_request.pdf.

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combat nuclear terrorism.” States also use plenary meetings and training exercises to share lessons learned. As of August 25, 2009, the Global Initiative includes 76 member states and 4 observer organizations (the IAEA, the European Union, Interpol, and the UN Office on Drugs and Crime). Membership includes such states of proliferation concern as Russia, Pakistan, and Libya. In his Prague speech, President Obama noted that he wants the Global Initiative to become a “durable international institution” but, as of yet, little progress has been made now one-quarter of the way through the President’s first administration. However, the US, the European Union, and the International Atomic Energy Agency are expected to use the 2010 Global Initiative Plenary Meeting to push for nuclear “libraries” that would aid nuclear forensics efforts.²⁷ The decision to use the Global Initiative as the forum for this discussion may signal increased effort toward its institutionalization.

(iii) G8 Global Partnership

Launched in 2002 at the G8 Summit in Kananaskis, Canada, the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction aims to secure and eliminate nuclear, chemical, and biological weapons and related materials. The G8, in conjunction with several other countries, pledged to provide \$20 billion in nonproliferation funding over 10 years. Eight years after the Global Partnership’s founding, governments have committed approximately \$18.5 billion; however, much of that money has yet to be expended (See Table 1, p.11). While the vast majority of the work has taken place in Russia and Ukraine, the G8 has called for expanding the Global Partnership outside states of the former Soviet Union “on a case-by-case basis.” At the 2009 G8 Summit in L’Aquila, Italy, participating governments agreed to focus more strongly on the proliferation of weapons-relevant know-how. Nevertheless, the Global Partnership’s work in securing nuclear materials will contribute to fulfilling President Obama’s pledge to secure all nuclear material by 2013. Canada, Germany, and the United Kingdom, among other Global Partnership participants, have been particularly active in securing nuclear materials.²⁸

(iii) Proliferation Security Initiative

The Proliferation Security Initiative (PSI) is an activity created by the Bush Administration to enhance global counterproliferation through interdiction. Participating countries (those that accept PSI’s Statement of Interdiction Principles) agree to streamline cooperation and strengthen resolve to prevent shipments of proliferation-sensitive technology and materials. As of May 2009, PSI has 95 participants. To operationalize PSI, the US has signed nine bilateral ship-boarding agreements, which allow American authorities to more quickly board and inspect vessels, registered under those nine countries, suspected of carrying illicit materials. President Obama has expressed his support for PSI. However, he wants to make PSI a “durable international institution” with legal interdiction authorities. PSI, as an activity, currently lacks a

²⁷ Rachel Oswald, “Distrust Mires Effort to Develop International Nuclear Forensics Database,” *Global Security Newswire*, December 24, 2009, http://gsn.nti.org/gsn/nw_20091223_9450.php.

²⁸ Global Partnership Working Group, “GPWG Annual Report 2009 - Consolidated Report Data, ANNEX A,” July 2009, http://www.g8italia2009.it/static/G8_Allegato/GPWG-Report-2009-AnnexA-Consolidated-Data-Sheets,2.pdf.

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secretariat and distinct funding, as well as a specific legal mandate for interdiction. Participants must receive clearance from a vessel’s host country before boarding, yet many countries of proliferation concern, such as Pakistan, Malaysia, China, and South Africa, are not PSI participants. Furthermore, government vehicles are exempt from interdiction. In response, President Obama is likely to push for PSI institutionalization at this year’s Global Nuclear Security Summit.²⁹

TABLE 1 – G8 GLOBAL PARTNERSHIP CONTRIBUTIONS³⁰

Country	Funds Pledged (USD)	Funds Expended (USD)
Australia	\$9,226,840	\$9,226,840
Belgium	\$11,857,575	\$11,857,575
Canada	\$968,490,000	\$500,636,039
Czech Republic	\$2,631,370	\$1,966,662
Denmark	\$26,446,121	\$26,446,121
European Union	\$1,488,179,450	\$908,200,845
Finland	\$32,027,920	\$24,637,895
France	\$298,834,420	\$152,021,817
Germany	\$1,231,912,624	\$957,173,700
Ireland	\$5,113,940	\$3,823,286
Italy	\$1,448,760,000	\$46,081,430
Japan	\$112,378,900	\$82,536,029
Netherlands	\$49,774,152	\$40,333,624
New Zealand	\$2,560,000	\$2,015,000
Norway	\$144,876,000	\$113,545,330
ROK	\$3,000,000	\$3,000,000
Russia	\$2,000,000,000	\$4,472,750,000
Sweden	\$9,327,075	\$8,661,020
Switzerland	\$16,073,140	\$15,301,891
UK	\$750,000,000	\$441,967,695
Ukraine	\$436,129	\$436,129
USA	\$10,000,000,000	\$6,725,321
TOTAL	\$18,611,905,656	\$7,829,344,249

(iv) UN Security Council Resolution 1540

In April 2004, the UN Security Council unanimously passed Resolution 1540, which mandates that all Member States implement a set of supply-side controls related to the nonproliferation of nuclear, biological, and chemical weapons, and to criminalize proliferant activities within their territories. In the face of what was seen as an urgent

²⁹ Andrew Riedy, “Fact Sheet: 2010 Global Nuclear Security Summit,” Center for Arms Control and Non-proliferation, December 9, 2009, http://www.armscontrolcenter.org/policy/nonproliferation/articles/120909_global_nuclear_security_summit/.

³⁰ See: Global Partnership Working Group, “GPWG Annual Report 2009 - Consolidated Report Data, ANNEX A.” Additional data from Global Partnership Working Group, “GPWG Annual Report 2008 - Consolidated Report Data, ANNEX A,” July 2008, http://www.mofa.go.jp/policy/economy/summit/2008/doc/pdf/0708_12_02_en.pdf. Exchange rates as of January 19, 2010 from XE (<http://www.xe.com/ucc/>).

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need for action, and eschewing the time intensive process of negotiating a new international treaty, the Security Council invoked its Chapter VII authority for only the second time in its history. Occurring in the immediate wake of the US-led invasion of Iraq, seven months of contentious negotiations led to the development of an initial draft of the Resolution. Some Member States objected strongly to the imposition of economic or even military sanctions for noncompliance. Others were insistent that the Committee formed to oversee implementation of the Resolution not be given deliberative power to evaluate State compliance with the terms of the Resolution. Still others questioned the legitimacy of the Security Council's action which was seen as a direct circumvention of the traditional treaty-making process. Despite this acrimony, in April of 2004 a final Resolution was unanimously adopted by the Security Council. To date, at least 83 per cent of countries have issued their first report to the UN 1540 Committee—the first step toward compliance with the terms of the Resolution. Much effort has been exerted in raising the necessary awareness to encourage both the mandated reporting on the status of national implementation of 1540, as well as national action plans that fulfill the mandate of the Resolution. Yet despite the opportunities afforded by this Resolution to promote the nonproliferation agenda elucidated by the President himself, little appreciable progress has been taken to maximize the impact of 1540. Although the United States has led an international call to develop a voluntary fund to support the efforts of the UN Committee in New York, practical international support has been lacking. For its part, the US government has dedicated a single individual—without a full time staff or dedicated budget—to coordinate this effort. And little evidence of “outside the box thinking” has been witnessed as US and other industrialized governments seek to promote nonproliferation activities across governments of the Global South.

CONCLUSION: THE NEED FOR INNOVATION

A commission chartered by the U.S. Congress recently asserted that the world is imperiled by a new era of WMD proliferation and faces a greater than even chance of a nuclear or biological weapons incident within the next five years.³¹ This finding is consistent with the near constant barrage of warnings from world leaders, intelligence agencies, experts, and the media regarding the market opportunities available to determined proliferators. In many ways, these dire predictions are reminiscent of the 1950s and 1960s—an era that led to the development of the existing patchwork of treaties and verification measures designed to curb the spread, and promote the elimination, of nuclear, biological and chemical weapons. Although the current efficacy of each of these instruments varies dramatically, the common thread connecting them to the WMD nonproliferation regime is a strategy of “technology denial” based on this premise: Provided that the components of a weapon can be locked away or otherwise controlled, proliferation is presumed to be manageable.

While the apocalyptic predictions of the last 50 years regarding WMD proliferation and use have not been realized, evidence suggests that the proliferation challenge in this

³¹ Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, *World at Risk: Report of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism* (New York: Vintage Books, 2008): xi.

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century will be dramatically different than it was in the last. A diverse set of seemingly unrelated forces is gathering, presenting a growing challenge to the practicality of the existing regime and to governments' ability to prevent proliferation without a far more nuanced and innovative approach.³²

By the 1990s, an array of powerful economic and political forces began converging to revolutionize the global security environment by pushing dual-use knowledge and equipment into more hands in more countries than ever before, and expanding and accelerating the pace of transshipment and financial transactions. These trends were fostered by:

- *A growth in foreign direct investment:* While foreign direct investment (FDI) had long been viewed with suspicion by governments around the world, by the 1980's many concluded that it yielded not only short-term financial gains, but also long-term economic benefits. The global development community joined economists and state development agencies in promoting models of export-oriented growth to the governments of less-developed countries. As a result, FDI jumped from US\$14 billion in 1970 to an astonishing US\$1.2 trillion by 2007.³³
- *Increases in global trade:* Greater trade openness emerged with lowered barriers to imports and exports around the world. In 1981, the worldwide average tariff on imports was 29.7 percent by 2006, that figure had dropped to 9.5 percent.³⁴ The unprecedented growth in both FDI and trade meant that capital flows and the movement of goods became a regulatory nightmare for governments seeking to prevent the spread of illicit items.
- *Cold War demobilization:* The end of the Cold War touched off an unprecedented transfer of a growing menu of sophisticated—and potentially dangerous—technologies from government to private hands. Former Soviet bioweaponeers, for instance, left their cloistered institutes to open legitimate biotech companies taking with them their dual-use knowledge. In the United States and in other Western countries, defense conversion efforts in the 1990s sought to remake the

³² For an overview of WMD proliferation predications see: Dwight D. Eisenhower, "Address by Dwight D. Eisenhower, President of the United States, to the 470th Plenary Meeting of the United Nations General Assembly," presented in New York, NY (December 8, 1953), accessed at: http://www.iaea.org/About/history_speech.html; "Face-to-Face, Nixon-Kennedy: Vice President Richard M. Nixon and Senator John F. Kennedy, Third Joint Television-Radio Broadcast," transcript provided by John F. Kennedy Presidential Library and Museum (originally aired October 3, 1960), accessed at: <http://www.jfklibrary.org>; Lewis A. Dunn, *Controlling the Bomb: Nuclear Proliferation in the 1980s* (New Haven, CT: Yale University Press, 1982): 1-94; Leonard S. Spector, *Nuclear Ambitions: The Spread of Nuclear Weapons* (Boulder, CO: Westview Press, 1990): 6-9; Office of the Secretary of Defense, *Proliferation: Threat and Response* (Washington: US Department of Defense, 2001): 1, accessed at: <http://www.fas.org/irp/threat/prolif00.pdf>.

³³ UNCTAD FDI Online Database, Foreign Investment Database, accessed online at: <http://www.unctad.org/Templates/Page.asp?intItemID=1923&lang=1>

³⁴ The World Bank, *Table 1: Trends in Average Applied Tariff Rates in Developing and Industrial Countries, 1981-2006 (Unweighted in %)*, accessed at: <http://siteresources.worldbank.org/INTRES/Resources/469232-1107449512766/tar2006.xls>.

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defense industrial base into a national technology and industrial base with a high degree of civil-military integration that would continue to serve an ongoing, albeit presumably diminished, security need.³⁵ The result would effectively transition critical dual-use WMD knowledge and capacity from state-governed institutions and a limited number of highly regulated partners to a broader swath of private sector entities.

- *Globalized business practices:* As private companies, initially in the developed world, gained access to new technologies, they sought to maximize profit and efficiency through outsourcing, off-shoring, supply-chaining, and other activities that drove intellectual and manufacturing capacity well beyond Western shores. The corresponding transfer of information, processes, and technology led to the generation of new local enterprises, including subsidiary operations, that collaborated with or competed for global market share. Soon, states that were thought to have lacked the indigenous expertise to perform complex R&D and manufacturing operations began to develop competitive industrial sectors.³⁶
- *Spread of innovative and manufacturing capacities:* The Global Innovation Index 2008 notes that while knowledge creation, competitiveness, and wealth creation all continue to be dominated by the United States, Germany, the United Kingdom, and Japan, leading indicators also suggest an emerging innovation capacity among newly industrialized and even developing world economies. The biological sciences are particularly telling. Cuba, for example, was one of the first countries to have developed a vaccine against the group B meningococcus. Egypt has developed several innovative diagnostic and therapeutic products for hepatitis C. India developed and now produces a recombinant hepatitis B vaccine and is one of several developing countries, including Brazil, which has launched a major nanotechnology initiative.³⁷
- *Accelerated movement of goods and services:* Advanced transportation technologies have enhanced the capacity of companies—including dual-use technology manufacturers—to ship products around the globe in an unhampered, undetected manner. Larger and more efficient boats, roll-on/roll-off cargo container vessels, new loading and unloading tools, more efficient port management, improved logistics, and satellite navigation and tracking have accelerated the pace at which goods could flow around the world.³⁸ The United Arab Emirates (UAE) alone invested billions of dollars during the 1990s to become a global trading hub. By 2007, more than \$12 billion worth of U.S. goods

³⁵ Linda Brandt, “Defense Conversion and Dual-Use Technology: The Push Toward Civil-Military Integration,” *Policy Studies Journal* 22.2 (1994): 359, accessed through ProQuest.

³⁶ Fitzpatrick, ed., *Nuclear Black Markets*, 12.

³⁷ Committee on Advances in Technology and the Prevention of Their Application to Next Generation Biowarfare Threats, National Research Council, *Globalization, Biosecurity, and the Future of the Life Sciences* (Washington: National Academies Press, 2006): 112-129.

³⁸ Moisés Naim, *Illicit: How Smugglers, Traffickers and Copycats are Hijacking the Global Economy* (New York: Doubleday, 2005).

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were flowing through the UAE annually.³⁹ The sheer volume of trade through many of these ports imposed practical limitations to oversight, regulation and the strategy of technology denial.

While almost every government has and will continue to speak to the need for rigorous nonproliferation standards, no country sees itself more likely to be victimized by a catastrophic WMD event than does the United States. For this reason, and despite the practical investments being made by other leading industrialized governments, leadership on global nonproliferation issues has more often than not fallen to Washington DC.

President Obama has seized this leadership role with enthusiasm and laid out a pragmatic agenda to strengthen the technology denial regime with the ultimate goal of the global elimination of nuclear weapons. Nonetheless, progress on enacting that agenda has been halting because of an array of domestic political obstacles as well as a series of unexpected exigencies abroad that threaten to derail the President's efforts.

Yet even the full implementation of the President's nearer term goals are unlikely to dramatically improve the ability of the international community to prevent wholesale the leakage of materials and sensitive technologies and know-how to states and sub-state actors committed to their acquisition. The forces of globalization have increasingly come to challenge the traditional tools of technology denial, and call for a complementary and innovative approach to proliferation prevention that encompasses regions of the globe never before thought to have a role in the proliferation supply chain. As US policy continues to be challenged by both domestic politics and a lack of innovation, other advanced governments around the globe have the opportunity, the interest, and the responsibility to develop and implement new efforts as part of a layered strategy against proliferation.

³⁹ Eric Lipton, "US Alarmed as Some Exports Veer Off Course," *The New York Times* (April 2, 2008), accessed at: <http://www.nytimes.com/2008/04/02/washington/02UAE.html>.