COURIER

Provoking Thought and Encouraging Dialogue on World Affairs

THE STANLEY FOUNDATION | NUMBER 80 | SPRING 2014

Saving the World at Plutonium Mountain

INSIDE:

Floods and the Foundation's Future

By Jennifer Smyser, Editor

In September last year, a mass of moist air that had pushed north into Colorado collided with a cold front coming down from Canada, which meant that the Big Thompson Canyon area—where my mom and her husband live—got about 15 inches of rain over the span of a week. Living on the banks of a mountain river, they always understood there was a risk of flooding, but they weren't necessarily prepared to wake up one morning and find the river raging at the foot of their driveway and blocking any path they had out of the canyon.

From a brief, choppy cellphone call, my stepsiblings and I knew our parents were stranded with neighbors in the foothills near their home with no way out. As they worked together to stay warm and dry, some watched their homes wash down the canyon, losing everything. After nearly 48 hours, the 20 or so neighbors were airlifted out by Black Hawk and Chinook helicopters.

As the floodwaters were building outside of my mom's home, I was in a strategic planning retreat with Stanley Foundation colleagues and board members in Chicago. While waiting for news, I tried to stay focused on our discussion as we determined the direction of our work for the next five years. We were sifting through a set of global issues that we felt were profound threats to human survival and well-being. We were, of course, interested in identifying issues where multilateral action and improved global governance are needed. Finally, we wanted to be working on policy areas where the foundation can make a significant and needed contribution.

One of the issues we were considering was climate change. It certainly met the first two criteria—it's a profound threat to humanity and requires multilateral action—and we felt we could identify ways to make a significant and needed contribution on global climate policy. While I didn't make the connection at the time, the decision to include climate change as a new area of focus will have me and my colleagues working for the next five years on getting the world's leaders to change and adopt policies that will hopefully reduce the number of rare and significant weather events like the one my family was being impacted by.

The current and projected effects of climate change are daunting to say the least. Severe weather and drastic changes to agriculture are likely to lead to mass migration of populations and potentially to conflict as well. Only serious, concerted effort by world leaders will help to avoid catastrophe. We hope to help them take needed actions and improve climate governance.

Three and a half months after the flood, my mom and her husband were able to move back into their house. As much as they've suffered, I know they were lucky. The sad truth is there could be hundreds of thousands or even millions of others who aren't so fortunate in the future.

Devastation and destruction caused by the September 2013 flood in the Big Thompson Canyon near Drake, CO.

Cover: At Semipalatinsk in Kazakhstan, there were hundreds of Soviet nuclear tests. The cover photo, from the first test in 1949, shows the raw power of an atomic blast in its well-known shape of a mushroom cloud. (ITAR-TASS News Agency)

COURIER
Spring 2014 • ISSN 1044-5900
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Courier is published tri-annually and mailed without charge to interested readers within the United States. The views expressed here are not necessarily those of the foundation.

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A House Divided

By Ramesh Thakur

The United Nations is two things: an idea, and an actual organization with structures, procedures, and personnel. As an organization, the United Nations' performance shows both achievements and problems. It is an international bureaucracy with many failings and flaws, and a forum often used for finger pointing, not problem solving. Too often it fails to tackle urgent problems owing to timidity and political divisions.

As a house divided against itself, not surprisingly, it struggles sometimes to stand—for anything.

As a symbol—which is the most powerful element that explains the enduring attraction of the organization—the United Nations is the world's only body that houses the divided fragments of humanity. Transcending national borders and based on global solidarity, it symbolizes a world in which those condemned to die in fear are given the chance to live with hope again—want gives way to dignity, and apprehensions are turned into aspirations.

This symbolism finds expression in the three overarching normative mandates of security, development, and human rights. And of course the environment comes in through the notion of sustainability. As the Brundtland Commission said so evocatively, "the Earth is one but the world is not."

The power of symbolism helps explain why the organization remains indispensable.

UNITY-IN-DIVERSITY

The world is interdependent in areas as diverse as financial markets, infectious diseases, climate change, terrorism, nuclear peace and safety, product safety, food supply and water tables, fish stocks, and ecosystem resources. Any of these can provoke military conflict. They are all also drivers of human insecurity. All require joint action to enhance national and international human security, improve welfare, reduce costs, and bring order and regularity to international affairs.

At the center of this interdependent, globalized, and networked multilateral order is the United Nations. It remains our best hope for unity-in-diversity in a world in which global problems require multilateral answers.

A growing number of public policy decisions and practices have been transferred from the state to the international level, raising a number of pressing normative challenges to the Westphalian foundations of multilateralism as citizens become rights holders and states are deemed to have responsibilities of sovereignty.

In tackling these challenges, the United Nations does not always perform well, efficiently, cost-effectively, or in time. And yet, no other body can tackle the world's accumulating pathologies more effectively, with greater legitimacy, lower transaction and compliance costs, and higher comfort levels for most countries.

POWER, INFLUENCE, AND CONTROVERSY

The UN record on the authorization and use of force has to be considered within the broader context of changing systemic factors like the nature, location, and victims of war and armed conflict; the distribution of power; the nature of the state, of power, of security and threats to international

security; the actors who drive security and insecurity; and the global norms that regulate the international behavior of state and nonstate actors alike. Until the First World War, going to war when the fancy took them was an accepted attribute of the sovereignty of states.

The only deterrent was the military might of the opponent based on national strength and alliances with others, which increased both the risk of defeat and the cost of victory. Since 1945, the United Nations has spawned a robust norm against going to war except in self-defense against armed attack or when authorized by the United Nations itself.

In discharging this responsibility, the United Nations has functioned as a funnel for processing ideas on how best to limit the role and use of violence for settling disputes; a forum for debating the norms and rules to govern the use of force both within and across borders; and a font for authorizing the use of force in the name of the international community.

A particular twin challenge has been how to protect civilians and prevent mass atrocities in a system of sovereign states. An innovative and influential answer has been the principle-cum-norm of the Responsibility to Protect (R2P). Pillar one of R2P is uncontroversial, and pillar two is potentially slightly controversial. But the third pillar is politically and conceptually controversial, and its implementation will always be contentious in practice. And so it should be. The world would be a much less attractive place if people had become so desensitized that the use of international force was commonplace and uncontroversial.

The broader the shared understanding about the pillars—both conceptually and operationally—the more successful we will be in defusing the controversies, and, more importantly, in their implementation.

Professor Ramesh Thakur is the director of the Centre for Nuclear Non-Proliferation and Disarmament in the Crawford School at The Australian National University. He was assistant secretary-general of the United Nations from 1998–2007. Thakur was also a commissioner and one of the principal authors of the Responsibility to Protect doctrine in 2001. He is the author or editor of over 40 books and 400 articles and book chapters.

Responsibility to Protect

Pillar One. The State carries the primary responsibility for the protection of populations from genocide, war crimes, crimes against humanity, and ethnic cleansing.

Pillar Two. The international community has a responsibility to assist states in fulfilling this responsibility.

Pillar Three. The international community should use appropriate diplomatic, humanitarian, and other peaceful means to protect populations from these crimes. If a State fails to protect its populations or is in fact the perpetrator of crimes, the international community must be prepared to take stronger measures, including the collective use of force through the UN Security Council.

Famished residents of the besieged refugee camp of Yarmouk stand in line to receive food aid in Damascus, Syria. The United Nations has urged the Syrian government to authorize more humanitarian staff to work inside the country, devastated by its 3-year-old conflict. (AP Photo/UNRWA)

An explosion destroys the last part of what was once the world's largest Soviet-era nuclear bomb test site in the Degelen Mountains near Semipalatinsk in northeastern Kazakhstan. (Reuters/Shamil Zhumatov)

Saving the World at Plutonium Mountain

By David E. Hoffman and Eben Harrell

Last October, at the foot of a rocky hillside near Kurchatov City, Kazakhstan, at a spot known as Degelen Mountain, several dozen Kazakh, Russian, and American nuclear scientists and engineers gathered for a ceremony. After a few speeches, they unveiled a three-sided stone monument, etched in English, Russian, and Kazakh, which declared...

"1996–2012. The world has become safer."

The modest ribbon cutting marked the conclusion of one of the largest and most complex nuclear security operations since the Cold War. The secret mission was to secure plutonium—enough to build a dozen or more nuclear weapons—that Soviet authorities had buried at the testing site years before and forgotten, leaving it vulnerable to terrorists and rogue states.

The effort spanned 17 years, cost $150 million, and involved a complex mix of intelligence, science, engineering, politics, and sleuthing. This account is based on documents and interviews with Kazakh, Russian, and US participants, and reveals the scope of the operation for the first time. The effort was almost entirely conceived and implemented by scientists and government officials operating without formal agreements among the nations involved. Many of these scientists were veterans of Cold War nuclear testing programs, but they overcame their mistrust and joined forces to clean up and secure the Semipalatinsk testing site, a dangerous legacy of the nuclear arms race.

They succeeded, but what they accomplished may have to be done all over again if the walls of secrecy ever come down and reveal security vulnerabilities in other states that have developed the atomic bomb, including North Korea, Pakistan, China, India, and Israel, or in countries that may develop weapons in the future, such as Iran.

During the Cold War, the Soviet Union carried out more than 450 nuclear explosive tests at the Semipalatinsk site, which sprawls over a portion of the Kazakh plains slightly larger than Connecticut. Most of the tests involved atomic explosions, while others were carried out to improve weapons safety, in part by examining the impact of conventional explosives on plutonium metal. A network of tunnels built under Degelen Mountain became the epicenter of these tests.

After the Soviet Union collapsed in 1991, the Russians gradually abandoned the site. Economic conditions in the main city near the testing grounds grew desperate, and residents began to search the tunnels for metal to sell. They used mining equipment to steal copper from the electrical wiring and to scavenge rails that once carried nuclear devices far underground for explosive testing.

In the 1990s, the United States, through an agency in the Pentagon dealing with nuclear security, funded a program to close off the entrances to the tunnels at Semipalatinsk so they could never again be used for nuclear tests. The tunnels were sealed at the portals but not explored to any depth. Plutonium from the earlier safety tests lay deep inside.

In 1995, two scientists from the Los Alamos National Laboratory visited Degelen Mountain and came away convinced that the site was a potential plutonium "mine" for thieves and terrorists. Then, in January 1998, Siegfried S. Hecker, who had just retired as the laboratory's director, heard from a Kazakh scientist that the Degelen Mountain area was wide open, despite the US-led tunnel-closing effort, and scavengers were searching it.

In April of that year, Hecker and two Los Alamos specialists went to Kazakhstan for nine days. At Semipalatinsk, Hecker found a lone, meager guard gate and no guards. He saw long trenches in the brown, dry land that could have been dug only by powerful excavating machines. "People on the site—no way to keep them off," he wrote in his notes. In another location, Hecker saw one of the tunnels that had been closed. The front was still plugged, but scavengers broke in by drilling down from above and behind the barrier.

"I really thought these were guys digging a little bit of copper out. Instead, this was a major industrial enterprise," Hecker said in a recent interview.

SOVIET EXPERIMENTS

In a report he wrote after the trip, Hecker estimated that the total plutonium in the area could approach 440 pounds. A nuclear bomb would require only about 17 pounds, or even less in some designs. Hecker wrote that it was "material in reasonably concentrated form, easily picked up, completely open to whomever wants to come."

That summer, on a trip to Russia, Hecker met with Radi Ilkaev, the director of Arzamas-16, one of the two leading Soviet-era nuclear weapons labs, which continued to operate in Russia. One evening, Hecker quietly pressed Ilkaev about Semipalatinsk: Did the Soviet Union leave nuclear materials buried there? Ilkaev responded cautiously, Hecker recalled. He said Russia was finished at Semipalatinsk and never wanted to go back, but could not afford the environmental cleanup.

Scavengers rummage for copper wiring and steel to sell as scrap metal at the Semipalatinsk nuclear bomb testing site. (US Department of Defense Photo)

Hecker pulled out the photos he had taken at Semipalatinsk. He showed Ilkaev evidence that huge earth-cutting machines had sliced through the ground. "Radi, that's your test site. Those are the copper cable thieves," he said.

Ilkaev looked at the photos and finally said, according to Hecker, "I'll have someone to talk to you in the morning.'"

The next day, Ilkaev introduced Hecker to two scientists, Yuri Styazhkin and Viktor Stepanyuk, who had worked on the test site. Styazhkin knew the whole story, but he did not reveal it all at once. "There are a lot of things we did out there," he told Hecker.

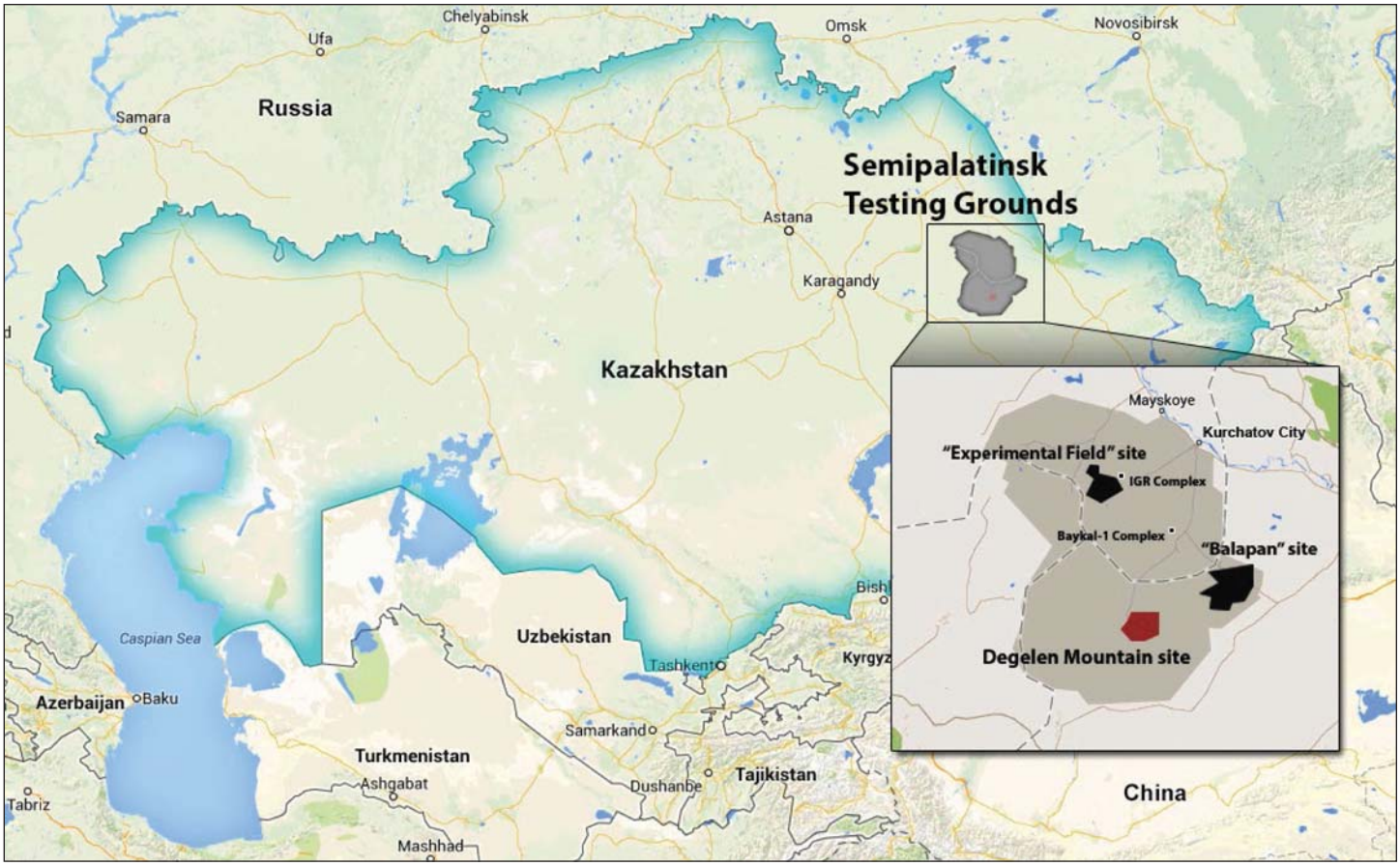
Once back in the United States, Hecker gave a series of briefings in Washington about what he had discovered. He showed the photographs of the trenches and warned officials at the departments of Energy and Defense that the amount of recoverable plutonium was perhaps enough for a dozen nuclear weapons. Maybe more.

At a June 1999 seminar with US officials in Almaty, Kazakhstan's largest city, Ilkaev and other Russian scientists revealed that the problem at Semipalatinsk was bigger than just Degelen Mountain. In a field near the mountain, Soviet experiments in vertical shafts (or bore holes) had left plutonium residue in shallow holes. Kazakh scientists reported that scavenging was occurring there, as well.

DETERRING SCAVENGERS

At first, any cooperation seemed unlikely. Officials from the Russian Atomic Energy Agency, then known as Minatom, were suspicious that the United States was trying to collect intelligence about Russian nuclear weapons. Russia was also going through a tumultuous period after an economic collapse in 1998, the outbreak of a second war in Chechnya in 1999, and President Boris Yeltsin's sudden resignation that December, with Vladimir Putin ascending as his handpicked successor. At the time, Russian officials were making progress toward securing nuclear facilities and reducing weapons stockpiles, but resentments toward Washington lingered. Eventually, they agreed to move ahead on Semipalatinsk but, as a condition, refused to take back any nuclear material. All of it would have to be secured in place, in Kazakhstan.

By contrast, officials in Kazakhstan were eager to get started on the project. President Nursultan Nazarbayev, disturbed by the remnants of Cold War-era Soviet nuclear,



Map of the Soviet-era nuclear bomb test site of Semipalatinsk in Kazakhstan. (Autonavi/Basarsoft/Google)

biological, and chemical weapons programs that had been carried out in his country, actively backed nonproliferation efforts. All three countries agreed not to officially notify the International Atomic Energy Agency (IAEA) of the Semipalatinsk operation, in part because they feared leaks. As a nonnuclear weapon state, Kazakhstan is required to report all weapons-usable materials on its territory to the IAEA, but in the case of the plutonium, it did not.

To secure the plutonium at the bore holes, the scientists and engineers borrowed a method from the 1986 Chernobyl nuclear accident. The Soviet Union had built a concrete containment dome around the destroyed Chernobyl reactor. The Russians pointed out that such an approach could also work at Semipalatinsk; scavengers would be deterred from breaking into a giant concrete sarcophagus.

The project to build the dome was called Operation Groundhog. The funding came from a program approved by Congress in late 1991, sponsored by Senators Sam Nunn (D-Ga.) and Richard Lugar (R-Ind.), to cope with risks posed by nuclear weapons and materials in the former Soviet Union. With the operation, the effort shifted to official government cooperation: The United States would provide the money; Russia would provide the data; Kazakhstan would do most of the work.

Conceived in 2000, Operation Groundhog suffered repeated delays, including work stoppages during the frigid winters. But with the nuclear ambitions of Al Qaeda coming into clearer view in documents seized during the invasion of Afghanistan, US officials felt the urgency of preventing plutonium from falling into the wrong hands. The concrete dome over the bore holes was completed in August 2003.

CONCRETE TOMBS?

Just a few miles away, however, Degelen Mountain was still unattended, and scavengers continued to burrow in close proximity to weapons-grade plutonium. When a senior Pentagon official, Andy Weber, met with Russian and Kazakh officials in mid-2003 to discuss extending projects to the mountain, the Russians were still ambivalent and did not reveal all they knew. They offered the locations of three more experiments, at two sites. If work at these sample locales went well, and if the Russians felt confident that the Americans were not committing espionage, Minatom would consider sharing more information.

As it turned out, these sample locations weren't in Degelen Mountain but in a nearby bunker. They involved three kolbas, large metal cylinders, about 8 by 24 feet, insulated with Kevlar and fiberglass and designed to contain explosions equivalent to the force of 440 pounds of dynamite. They were most often placed deep within Degelen Mountain for plutonium tests, but three had been used above ground and were stored in the bunker.

The US Defense Threat Reduction Agency agreed to work on the three kolbas, one of which had been pried open by scavengers, and to defer action on Degelen Mountain.

Kazakhstan's President Nursultan Nazarbayev waves in front of the "Stronger Than Death" monument devoted to the closure of the Semipalatinsk nuclear test site. The memorial represents a mother sheltering her child from a nuclear explosion and stands as a memorial to victims of 40 years of nuclear testing. (Reuters/Shamil Zhumatov)

Operation Matchbox, begun in 2004, secured the kolbas by filling them with a concrete mixture.

In the spring of 2005, US scientists finally got the breakthrough they'd been waiting for when Russia released all the remaining information about Degelen Mountain. But it wasn't pretty. The mountain contained about 220 pounds of recoverable plutonium—enough for more than a dozen nuclear bombs. Even more surprising, Russia revealed that at one location, the Soviets had left behind some high-purity plutonium and equipment that could be used to build a nuclear weapon.

This disclosure alarmed US officials, but the Russians were extremely cautious. In their reports to the US side, they used code names for 16 sites in and around Degelen Mountain, ranking them according to proliferation risk. Three of the sites were found to present the "maximum risk" if they fell into the wrong hands and were given the code names X, Y, and Z. One day, while crews were drilling a hole at the Y site, a concrete retaining wall collapsed, exposing the plutonium and equipment. Eventually, material from two of the sites was sent back to Russia, and the third was entombed in concrete.

Scavengers continued to raid the tunnels until 2008, when Kazakhstan finally declared Degelen Mountain an "exclusion zone"—which allowed US officials to erect warning signs—and when Kazakh security forces got the authority to expel the scavengers. The following year, the United States funded and helped install an elaborate security system at the site.

Still, the work remained slow. In a 2010 summit in Washington that included 47 nations, President Barack Obama arranged a personal meeting with Nazarbayev. Officials of the two nations then met with their Russian counterparts. The United States, Russia, and Kazakhstan agreed in confidence to complete the work at Semipalatinsk by the next summit, scheduled for March 2012 in Seoul.

This high-level commitment galvanized the operation. For the first time, Kazakh crews worked through the winters, and American officials stayed on site in Semipalatinsk with them, while increased US funding meant four crews could work simultaneously instead of one. Obama, Nazarbayev, and Russian President Dmitri Medvedev announced the completion of the work in Seoul, though the news was overshadowed by Obama's open-mike incident with Medvedev.

LABORIOUS UNDERTAKING

The Semipalatinsk operation succeeded: It secured the plutonium, reducing the threat that it could fall into the hands of scavengers, terrorists, or a state with malevolent intentions. The operation showed once again that funding for nuclear security can pay large dividends. But it was a close call. Had scientists not prodded the governments of the United States, Russia, and Kazakhstan, the cleanup might never have been launched, or traffickers might have arrived before the materials could be secured.

Questions also remain over the long term. Plutonium's half-life is 24,110 years. Will someone, someday attempt to recover the material from the cemented tunnels and holes? Will it ever pose an environmental risk? While Nazarbayev's commitment to nonproliferation has been strong, he is 73 years old and has not designated a successor. What kind of leadership will prevail in Kazakhstan a decade or a century from now? How will the US-Russian relationship evolve in the years ahead?

The operation highlighted the role of unofficial collaboration and contact among scientists and others who are devoted to getting results without cumbersome cross-government negotiations. But securing the plutonium in Kazakhstan proved to be a laborious undertaking spanning 17 years, an effort requiring scientists willing to work together across countries and time zones, united only by a determination to get results.

Such hidden repositories might be found elsewhere, wherever nations have tested nuclear weapons or carried out other research on fissile materials such as plutonium. Will all that scientific collaboration and goodwill be readily available? It is true, as the plaque at Degelen Mountain attests, that the world is safer thanks to this operation. But it is also true that the scars left by nuclear weapons testing during the Cold War will last for millennia.

This article originally appeared in The Washington Post *on August 17, 2013. The reporting was supported by the Pulitzer Center on Crisis Reporting.*

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Resource. "The Way Forward for Nuclear Security" video, a look at what the global nuclear security system needs to stop terrorists from acquiring enough fissile material to make a nuclear bomb. *www.stanleyfoundation.org*

A woman dons a mask as she does morning exercises in a curtain of smog in Fuyang, China. (Reuters/China Daily)

Everything You Wanted to Know About Climate Talks

Plus a Little Bit More Than You Ever Wanted to Know

The next two years will be critical for progress on climate change, particularly for global reductions of greenhouse gas emissions beyond 2020.

In September, world leaders will meet at the United Nations to consider what is perhaps the greatest threat to human survival...

... and hopefully bolster support for a robust agreement in further negotiations. The Paris talks next year will see an assortment of national measures from almost 200 countries.

The process, a series of meetings in locations from Mexico to Denmark to Poland to South Africa, has not been easy and will be less so in the coming months. Any agreement among the entire world community is bound to be fraught with difficulty, dissent, and diversions.

Until now, rich nations, which have emitted most of the greenhouse gases since the Industrial Revolution, have been expected to take the lead with commitments to cut emissions, while the poorer countries have been given more leeway.

The talks for a successor to the 1997 Kyoto Protocol, the first and only global deal to tackle climate change, have been disappointing to many. But the negotiations have the strongest claim to legitimacy, and despite the shortcomings, there are signs that the discussions will bring about significant greenhouse gas reductions.

In a Q&A with the Stanley Foundation, climate expert Joshua Busby, an associate professor at the University of Texas at Austin, talks about the current state of climate change negotiations and what's ahead.

TSF: Weren't negotiations for a new agreement supposed to be concluded in Copenhagen in 2009?

Joshua Busby: That is true, but we seem to have more urgency and energy to support more robust action on climate change this year. Moreover, action on climate change has now spread to more venues, creating a more complex landscape for tackling this problem but greater scope for progress.

The climate negotiations in 2009 in Copenhagen introduced an alternative model for global progress on climate change based on bottom-up political pledges by countries of what they are prepared to do on climate change accompanied by periodic review by other countries of progress. Discussions in Cancun in 2010 reaffirmed that new model of "pledge and review." That was a huge breakthrough, though media coverage failed to realize that Copenhagen broke a stalemate in the negotiations, because key developing countries like China and India made international commitments to address climate change for the first time.

In Copenhagen, leaders also affirmed their commitment to keep emissions concentrations of greenhouse gases below the level that would lead to a 2-degrees Centigrade increase in global average temperatures, the level beyond which scientists consider dangerous. The general sense is that long-term concentrations should not exceed 450 parts

A view of the Middelgruden offshore wind farm, which is off the Danish coast (UN Photo/Eskinder Debebe)

per million (ppm) of CO2. By December 2013, the world had already reached nearly 400 ppm, with concentrations perhaps likely to top 1,000 ppm by end of the century without aggressive action.

TSF: What is different in 2014 that makes progress more likely?

Busby: The worst of the global financial crisis appears to be over, which takes away one competing issue for resources and attention. In addition, parts of the Fifth Assessment Report from the Intergovernmental Panel on Climate Change have come out that reaffirm that the problem is getting worse.

TSF: Will a new agreement be concluded successfully in 2015?

Busby: It's hard to say. Some agreement is likely, but what form it will take is still very much in question. At the 2011 Durban climate negotiations, countries agreed that the new agreement will take the form of "a protocol, another legal instrument, or an agreed outcome with legal force."

This elastic language means different things to different actors, with some, like the European Union, probably more committed to a protocol. Others, like the United States, no doubt have something different in mind, that the "legal" form may reflect that a country has domestic legislation or regulations on the books. India and China may want to push for an even less stringent agreement. In the end, there may be some compromise that some elements, such as measuring and reporting emissions, may be binding while mitigation measures might not be.

One of the main reasons why a Kyoto-style protocol is unlikely is that some countries are reluctant to sign on to new, legally binding instruments. The requirement that two-thirds of US senators offer their advice and consent is a major hurdle in the United States. Other countries like China and India are also wary about taking on new legal commitments that they see as limiting their economic growth.

The issues going into 2015 revolve around, first, the nature and relative ambition of country commitments to address climate change; second, whether emerging economies like China and India are willing to take on commitments of some nature; third, what commitments countries like the United States are willing to make; and fourth, how to reconcile nationally derived commitments with what is required to meet global climate goals.

Beyond this, the big issues have to do with money to support developing countries, including mitigation to reduce greenhouse gas emissions as well as adaptation so countries can withstand climate change. Increasingly, developing countries are calling for so-called "loss and damage" to compensate them for the negative consequences of climate change. These demands for funding may be irreconcilable.

TSF: Tell us how we got to where we are today.

Busby: The first climate treaty, the UN Framework Convention on Climate Change, was negotiated in 1992 at the Rio Earth Summit. It had no legally binding commitments. Since 1992, parties to the Framework Convention meet annually to elaborate new measures to address the problem in negotiations that encompass almost all of the world's countries.

Following on the success of the ozone negotiations, the climate negotiations moved to develop legally binding agreements to reduce greenhouse gases. The Kyoto Protocol was negotiated in 1997 in Japan and created legal obligations for the advanced industrialized countries collectively to reduce their emissions five percent below 1990 levels by the period 2008–2012. Developing countries like China and India had no legally binding commitments.

Unfortunately, some countries that signed Kyoto never ratified, notably the United States. Canada ratified but ultimately withdrew. Japan ratified and tried to keep its commitments but found it difficult, all the more so after the Fukushima nuclear disaster in 2011. The European Union did the most to meet its commitments and was the only actor enthusiastic about a second commitment period under the Kyoto Protocol for the period after 2012.

With China's emissions rising rapidly, its greenhouse gas emissions overtook those of the United States, and it became the largest emitter of greenhouse gases in the late 2000s. Since the late 2000s, recognition of rising emissions by China and other countries has created demands for those countries to take on commitments of some sort. The climate negotiations in 2009 in Copenhagen were thus a breakthrough on multiple fronts—a recognition that treaties might be flawed instruments for progress, particularly if key states were not included.

Joshua Busby is an associate professor of public affairs at the University of Texas at Austin. He has held research fellowships at Princeton University's Woodrow Wilson School, Harvard University's Belfer Center for Science and International Affairs, and the Foreign Policy Studies program at the Brookings Institution. Busby is a life member in the Council on Foreign Relations. He served in the Peace Corps in Ecuador from 1997 to 1999.

In 2012, three protesters, including an octogenarian nun, broke into the Y-12 National Security Complex in Oak Ridge, Tennessee, and painted slogans on the outside wall of the uranium processing plant. The break-in underscored how nuclear material security is a problem for the whole world. (AP Photo/ Erik Schelzig)

On Pain and Visions

Making the World Safer From Nuclear Terrorism

By Ambassador Alfredo Labbé

Illness is the most heeded of doctors: to goodness and wisdom we only make promises; pain we obey.

—Marcel Proust

I could not help but recall Proust's haunting admonition while reading William Tobey's sober but incisive recounting of the July 2012 incursion by three peace activists headed by an 82-year-old nun into the innermost security perimeter of the at the Y-12 National Security Complex—the so-called "Fort Knox of Uranium" in Tennessee where most of the United States' stock of weapons-grade uranium is kept.

As Tobey argues in his policy analysis brief recently published by the Stanley Foundation, this spectacular breach of security, taken together with the more than 20 illicit nuclear trafficking incidents worldwide in the last two decades, confirm the plausibility of the nuclear terrorist threat. They also constitute factual evidence of the need for a continued, collective, and global effort to prevent nuclear terrorism.

The Y-12 intruders inflicted pain only on the establishment's pride. But this peaceful feat could have been infinitely more painful had the protagonists been motivated by criminal determination. This time we were lucky, and I emphasize "we" because every nuclear security threat concerns every nation and every conscious, responsible citizen.

SHALL WE KEEP RELYING ON GOOD LUCK?

Efforts to confront and prevent nuclear terrorism gained both political momentum and structure with the first Nuclear Security Summit (NSS), which installed a decidedly arcane issue high up on the international agenda. The NSS process renewed or deepened security cooperation among relevant powers—including middle powers—while galvanizing the International Atomic Energy Agency (IAEA) into action.

Both the NSS and the IAEA are needed to build credible prevention: the summits provide political dynamism while the agency contributes multilateral legitimacy and technical expertise.

Nuclear security and nuclear safety—political and technological twins—are presided over by the principle of national responsibility, meaning in practice that states engaged in significant nuclear activities keep them zealously in the sanctum of national sovereignty, including their security and safety conditions.

Thus, apart from a handful of legally binding instruments, most measures to reinforce nuclear security are voluntary, constituting at best political undertakings, including the action plans adopted by the NSS and the IAEA.

While soft-law mechanisms can serve well the normative needs of some important activities in our globalized world, voluntariness is patently insufficient to build an effective nuclear security architecture.

If the effects of a nuclear terrorist attack or a nuclear accident can reach well beyond national boundaries, the

populations at risk have every right to demand security and safety conditions commensurate with the risks they are unwillingly exposed to.

Nuclear terrorism is a collective threat that cannot be confronted in isolation from the international community: nuclear dangers affect us all; any effective and responsible answer has to be multilateral. As in any other security-related realms, confidence and confidence building are essential here, and they need global reach.

This necessity underpins the notion of assurances, provided by nuclear states, which is emerging from the NSS process as a response to human security imperatives. Such assurances require an environment of transparency and accountability sustained by a process of effective implementation and continuous improvement.

A firewall notion of sovereignty cannot keep countries from the demands of an interdependent world.

The nuclear security—and safety—architecture imposes a cooperative, multilaterally oriented understanding of sovereignty, where nuclear security assurances and other confidence-building measures are undertaken as an exercise in leadership. Under such a conception, adherence to and compliance with legally binding instruments are investments in a collective enterprise where every party grows richer and stronger with each new partner. This enterprise has many stakeholders: the nation state is but one of them.

The NSS process insists—and rightly so—in the need to foster and consolidate a global nuclear security culture. Such a culture will stem from political impetus, multilateral process, and good governance at all levels. To this recipe I would add legitimacy—a political category that provides a voluntary, noncoercive acceptance of norms and duties and that constitutes the cornerstone of modern, democratic societies. Thus, nuclear security culture necessitates the concerted and creative cooperation of governments, operators, regulators, industry, professional guilds, academia, and civil society.

Investigators of the Y-12 incident have concluded that complacency lies at the heart of the security failures at Oak Ridge on the night of July 28, 2012. The biological and psychological reality is that human beings are not built to endure continued levels of stress, excitement, or pain. Sustained alertness such as required from security and military personnel under threat conditions does not come naturally but results from indoctrination, training, and control. Even then, as experience shows, human beings will remain the weakest link in most security and safety chains.

Nuclear security culture, embedded in the conscience and behavior, will help to curtail the danger of nuclear terrorism, but risk elimination—for instance, through nuclear disarmament—will provide lasting assurance.

In his paper, Tobey identifies two breeds of advocates of nuclear security: transformationists and incrementalists. Nurtured in eclecticism and diplomatic flexibility, could I dare proclaim myself an incremental transformationist?

The menace we all want to confront calls for immediate action, fostering synergies and building upon the instruments and processes we already have. Such action still requires the political stimulus triggered by the NSS, and I am convinced that the summit process should continue until its urgent objectives are attained.

Yet, nuclear security is a chapter within the larger multilateral nuclear agenda, inserted into the fundamental objective of preserving peace and international security (a goal best served by the elimination of all nuclear weapons). Only a multilateral arrangement bestows the political legitimacy without which collective action is neither effective nor lasting. That is why the NSS will have to be followed—eventually—by an open-ended process leading to an all-encompassing, legally binding foundation for nuclear security architecture. The vision of a coherent, multilaterally sanctioned bulwark to prevent nuclear terrorism complements, naturally, that of a world without nuclear weapons.

Let us walk incrementally but surely toward the achievement of both.

Ambassador Alfredo Labbé is Chile's permanent representative to the United Nations Office and International Organisations in Vienna and ambassador to Austria, Slovakia, and Slovenia. He is the alternate sherpa of Chile to the 2014 Nuclear Security Summit in the Netherlands. He has also served as ambassador-deputy permanent representative of Chile to the United Nations in New York.

Resources. The Stanley Foundation policy analysis brief "Planning for Success at the 2014 Nuclear Security Summit" by William Tobey is available at *www.stanleyfoundation.org*.

"The Way Forward for Nuclear Security" video, a look at what the global nuclear security system needs to stop terrorists from acquiring enough fissile material to make a nuclear bomb. *www.stanleyfoundation.org*

A Gathering in the City of Peace and Justice

Making the World Safer From Nuclear Terrorism

By Ambassador Piet de Klerk

The March 2014 gathering of world leaders for the Nuclear Security Summit will be the largest the Netherlands has ever seen, outsizing the Hague Peace Conference of 1907—when the first stone was laid at the Peace Palace (pictured). The Hague Peace conferences are what led to the capital being referred to as an "international city of peace and justice."

The March 2014 Nuclear Security Summit in The Hague is the third in a row since President Barack Obama's call in 2009 for a new international effort to secure all vulnerable nuclear material around the world. Like the previous meetings in Washington, DC, in 2010 and Seoul in 2012, the summit in The Hague will focus on preventing nuclear terrorism.

At the gathering world leaders will concentrate on eliminating from vulnerable places nuclear material that can be used for weapons purposes; on better protecting the remaining material; and on strengthening the international architecture for nuclear security. The Dutch chairmanship has also invested in improving the efficiency and the effectiveness of the relationship between governments and industry.

Industry—including shipping and storage companies—has a primary responsibility for protecting nuclear material. States are responsible for issuing laws and regulations and ensuring that these are implemented, but they also have a responsibility to do it in such a way that the system works in practice.

The simplest yardstick for success is the number of states that have removed all or most of their weapons-usable nuclear material from their territories. The number of states with that material has fallen from 32 to 25 since the Seoul summit. And it is not the whole story. The Netherlands, for example, has decided to store its remaining highly enriched uranium, once used or destined for use in a research reactor, in a well-protected storage facility. So, to the extent it could be called vulnerable before, it isn't any longer. That box can be ticked as well.

PROGRESS

I am convinced that the summit process has led to better protection of the remaining nuclear material around the globe.

This analysis follows, first and foremost, from the nature of the summit process. In the preparatory phase, the personal representatives of heads of state and government and other civil servants involved need to be able to answer questions from their political leaders about the actual implementation of international conventions and recommendations. With such scrutiny, bureaucracies simply run faster, at least for a while.

Second, the summit process has led, by its very nature, to a greater receptivity for international peer review mechanisms, in particular for International Physical Protection Advisory Service and other review services of the International Atomic Energy Agency (IAEA). The Netherlands, one of the forerunners in this area, has had excellent experiences in cooperating with the IAEA, and I note with satisfaction that many other countries request such services as well.

What is measurable here is the commitment of states to better nuclear security.

Considerably more states have now ratified the amended Convention on the Physical Protection of Nuclear Material (73, up from 34 at the time of the Washington summit), which gives protection levels that should apply to the different categories of nuclear material. However, the required number of ratifications is not yet sufficient for the entry into force of the amended convention. Considerably more states now subscribe to the code of conduct on the safety and security of radioactive sources, 120 instead of around 100 in 2010.

BREAKING THROUGH LETHARGY

The summit in The Hague will have a variety of outcomes. The communiqué—or consensus statement—will be the central one, and the one to watch most closely. Many themes will come back that have been dealt with in the previous summits in Washington and Seoul. This should not come as a surprise.

The center of gravity of the community of states participating in the summit process is moving slowly, and continuity is the norm. Nevertheless, one can expect progress in a number of areas.

A string of paragraphs will define better than before the international nuclear security architecture: what we need, where we have made progress, and where we need to do more. As to the relationship between governments, industry, and regulatory bodies, the communiqué offers some useful language for progress in that area.

Nuclear security measures have sometimes been described as guards, guns, and gates. That approach is too simple and militaristic for my taste, but the fact of the matter is that most arrangements in the nuclear security realm are confidential matters. Thus the question arises, How can states, together with companies, build the confidence of others that their nuclear security measures form an effective whole? The communiqué will probably offer a set of measures that can be used to enhance such confidence.

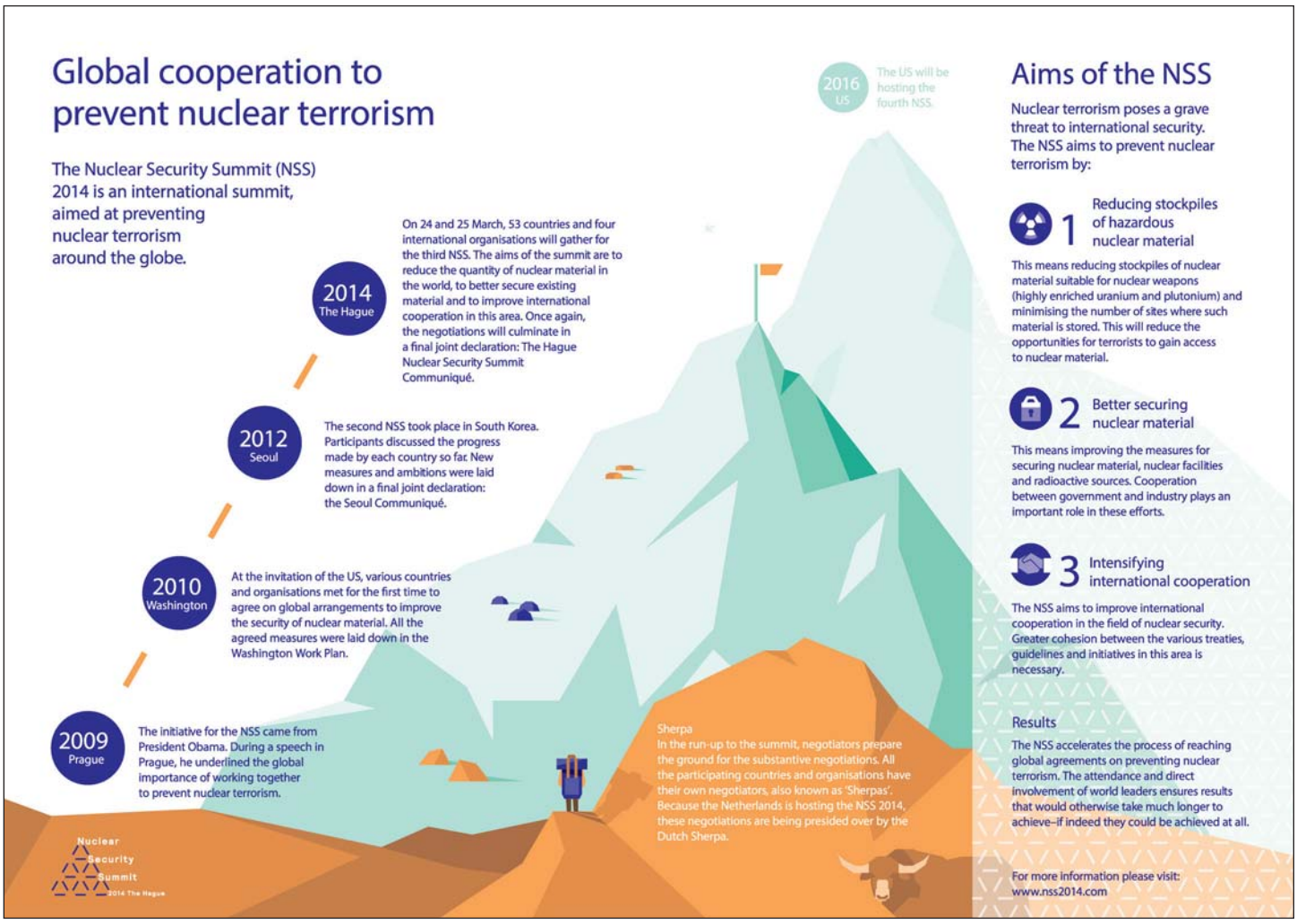
One can also expect a variety of joint statements by groups of countries that have cooperated in a particular area. These are statements that for one reason or another are not a product of the summit group as a whole, but of groups of nations that found themselves to be in mostly practical agreement.

Two examples of such statements that are particularly important for the Netherlands include one that launches a number of basic tools for the rapidly evolving field of nuclear forensics. The other example is an initiative that started with the three summit chairs—the United States, South Korea, and the Netherlands—and grew into a large group of nations, which all committed to implementing the recommendations of the IAEA, both in the field of nuclear material security and in the security of radioactive sources. It seems self-evident that recommendations of the best technical experts coming together in Vienna should be implemented at the national level, but there are many reasons for countries not to do that, or at least not now but maybe later. The strengthening initiative tries—with success—to break through such lethargy.

A SAFER WORLD

There will be many other joint statements, probably more than ever before, including one on nuclear disarmament. In my view, this mosaic shows what nations are actively working on and what is important to them. They contain conclusions that are not, or not yet, agreeable to all, but nevertheless they are useful additions to what we already have.

It is a bit early to say how much progress participating countries have made nationally. As I am writing this, many national progress reports haven't come in yet. Only when that is the case do we have the complete picture and can we assess how far we have come in the last four years. At



The graphic explains the Nuclear Security Summits which began as a call by US President Barack Obama for the world to lock down the global supply of weapons-usable nuclear materials. (Graphic by the 2014 NSS media team)

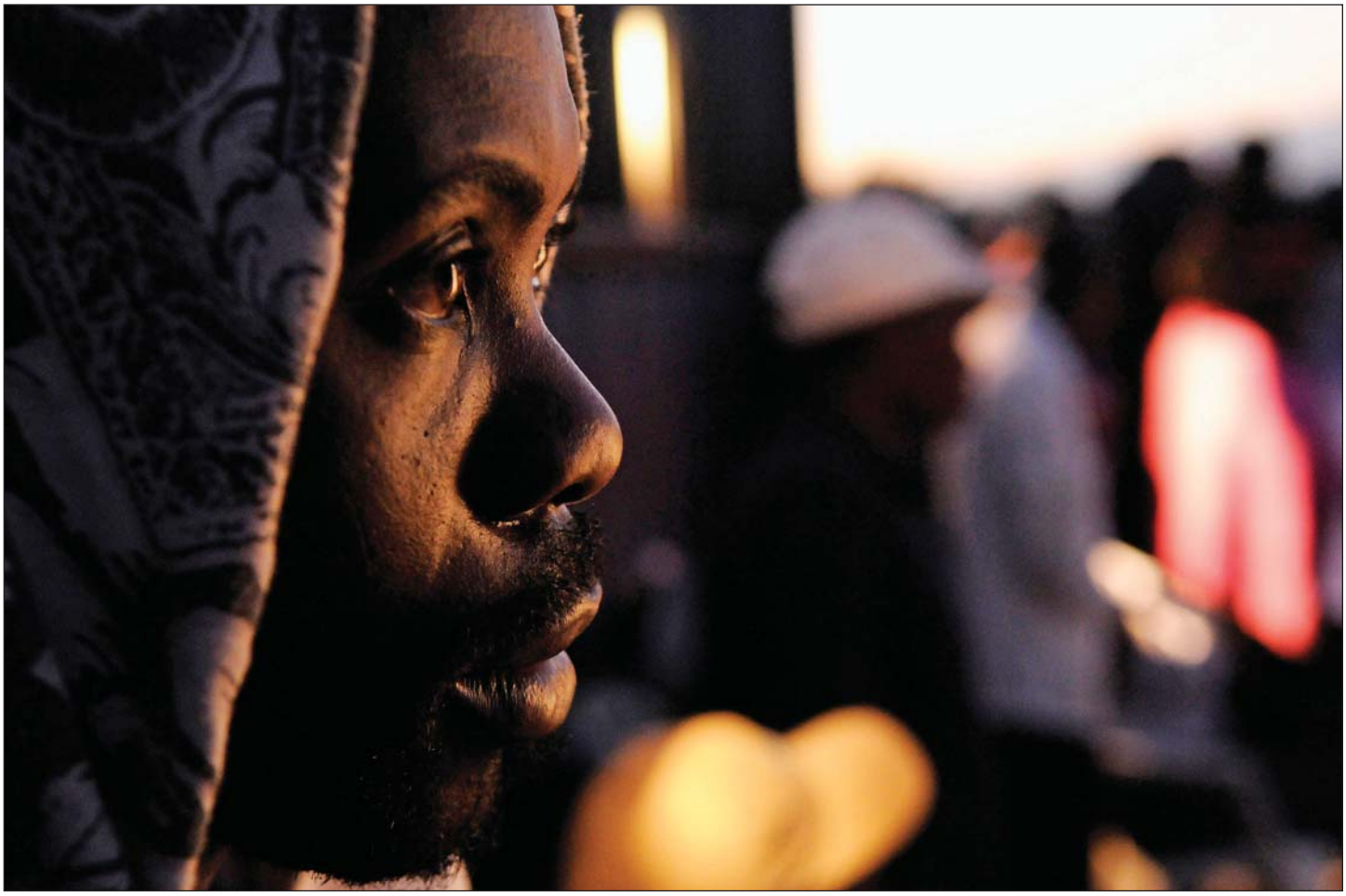
the same time, we should be clear: This is a dynamic area, and the work will never be finished.

The Netherlands has tried to get more attention for the security of nuclear material in military use. We did that knowing very well that such material cannot be part of an international architecture in the same way that material used in the civil sector is. Nevertheless, the security of military material in nations is important as well, and we don't see a reason why they could not declare that their military material is equally well protected, if not better, than their civil material and that they would take international good practices and agreed recommendations into account in protecting that material. It is clear we have a long way to go on this score, but the step forward is that countries have agreed on the need for the evolving nuclear security architecture to be comprehensive.

It is too early to say for sure what political leaders will discuss when they meet in The Hague. To some extent that will depend on the crisis du jour. The fact of the matter is that the gathering of leaders is the biggest the Netherlands has ever seen, bigger than The Hague Peace Conference of 1907, when the first stone was laid at the Peace Palace. But the comparison also points to continuity: The leaders will meet in The Hague, city of Peace and Justice. It can then be expected that the outcome of the meeting should help to make the world a safer place.

Ambassador Piet de Klerk is the Netherlands sherpa for the 2014 Nuclear Security Summit. He has held various senior level diplomatic positions such as ambassador to Jordan and deputy permanent representative at the United Nations in New York. From 1998 until 2003, De Klerk was the director of the Office of External Relations and Policy Coordination at the International Atomic Energy Agency in Vienna.

Resource. "The Way Forward for Nuclear Security" video, a look at what the global nuclear security system needs to stop terrorists from acquiring enough fissile material to make a nuclear bomb. *www.stanleyfoundation.org*



A Haitian man, who has been living and working undocumented in the Dominican Republic, waits for Dominican immigration officials to allow him back into the country. (Reuters/Ricardo Rojas)

Rivalry, Vengeance, and Hope

Neighbors or Foes on the Island of Hispaniola?

By Andrei Serbin Pont

In 1822—a year after Haiti's independence—Haitian dictator Jean Pierre Boyer invaded the eastern part of Hispaniola island, what is today the Dominican Republic. Fearing a repeat of past Haitian-led massacres, the eastern islanders—who already called themselves Dominicans—posed no resistance. The occupying Haitian forces lived off the land, commandeering or taking whatever they wanted, for 22 years until being ousted by Dominican revolutionaries.

A century later, the fascist-leaning Dominican dictator Rafael Trujillo, who had his own designs on controlling all of Hispaniola, added his bloody stamp to the island's violent history when he ordered the murder of almost 35,000 Haitians in the 1930s, turning the border into a scorched no-man's land.

Today, the memories of the brutality persist, along with a legacy of ultranationalist and racist propaganda, and are mixing together with a recent set of laws stripping citizenship from around 200,000 Dominicans of Haitian origin—pointing to a new tragic chapter in the violent history of the island neighbors.

Late last year, the Dominican constitutional court ruled that the children of undocumented foreign immigrants born in the Dominican Republic since 1929 cannot be citizens.

The decision was the latest in a series of laws and reforms in recent years aimed at chipping away at and eventually denying the right of Dominican nationality to Dominicans of Haitian descent. Until 2010, anyone born on Dominican soil was granted citizenship.

Dominican President Danilo Medina of the Dominican Republic further polarized the situation in November by establishing a plan to deport all foreigners living in the Dominican Republic who do not qualify for the normalization of their migratory status.

The approval and implementation of these laws is not only a violation of the rights of a large portion of Dominican citizens but a worrying indicator of the persistence of racist ideology that may lead to an escalation of violence and the eventual perpetration of mass atrocities.

Two United Nations human rights experts have said that the Dominican Republic has a "profound and entrenched problem of racism and discrimination" against blacks in general and Haitians in particular.

There have been troublesome signs that government actions or inactions condone violations of human rights. Several bloody incidents between Dominicans and others suspected to be of Haitian descent have led to the death of at least one person and serious injuries to several others. Countries in the region and intergovernmental organizations have been quick to react and push the Dominican Republic and Haiti into talks to defuse tensions.

Civil society played a key role in mobilizing organizations like the Caribbean Community and Common Market and the Organization of Eastern Caribbean States to condemn the Dominican government's actions.

And there have been signs that the pressure is working.

In early 2014, Haiti agreed to provide its immigrant workers with national identification cards—which had been a key gripe of the Dominican Republic—and a few weeks later, the Dominican government decided not deport Haitians with so-called "irregular" migratory status.

The results so far represent a first step in the dialogue process and hopefully will translate into further agreements that protect the rights of all the people and prevent any more violence on the Island of Hispaniola.

Andrei Serbin Pont is the research coordinator for Argentian-based CRIES (Regional Coordinator for Economic and Social Research) and a member of The Nexus Fund's Global Advisory Council. He holds a bachelor of arts in humanities with a concentration in public policy from the Universidad Nacional San Martín, is a graduate of the National Defense College in Argentina, and is carrying out graduate studies in international relations at the San Tiago Dantas Program in Brazil.

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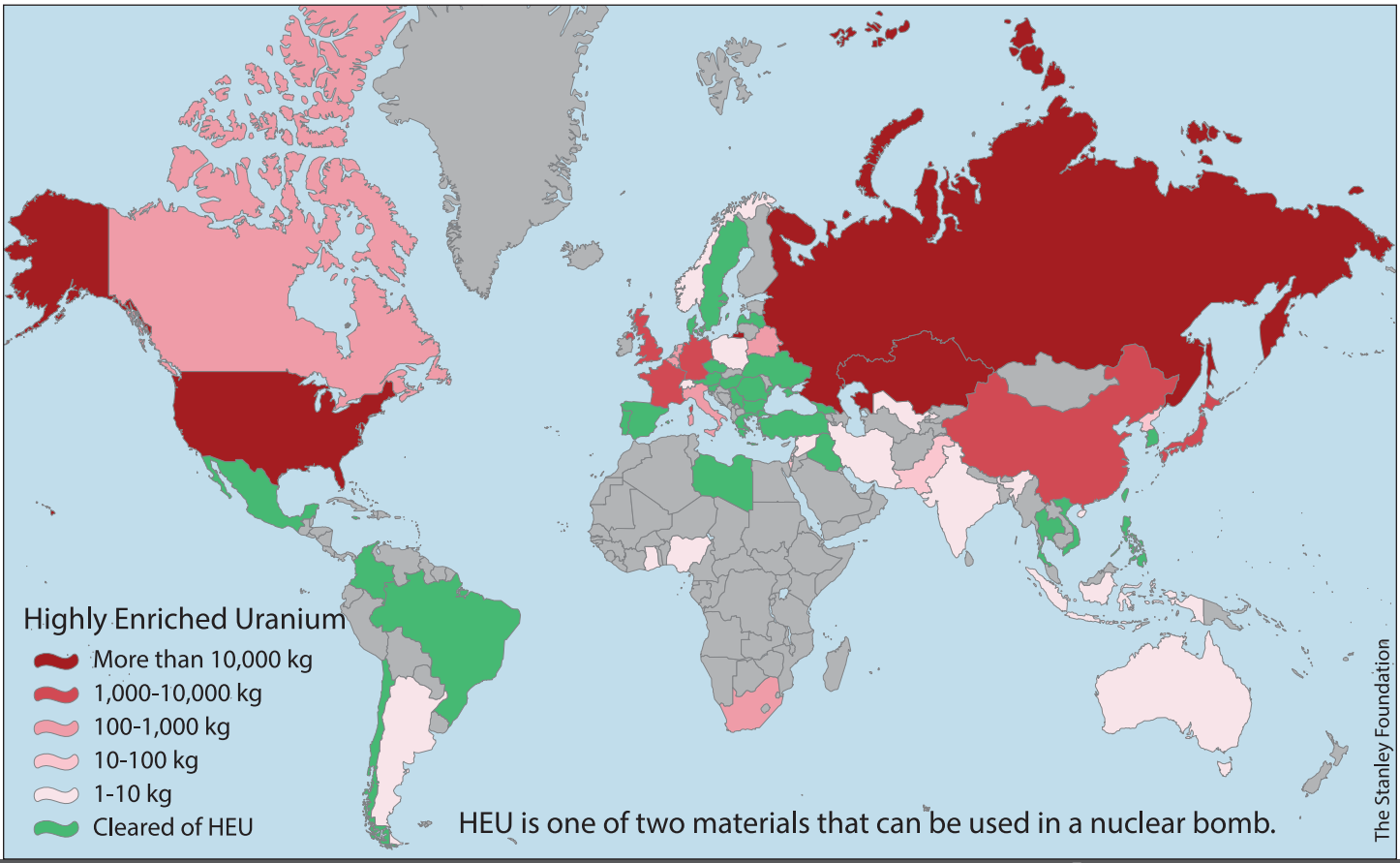

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