Center for American Progress

AP PHOTO/LOAY HAMEED

An Ounce of Prevention

Building a Global Shield to Defeat Improvised Explosive Devices

By Mary Beth Goodman June 2015

Center for American Progress

An Ounce of Prevention

Building a Global Shield to Defeat Improvised Explosive Devices

By Mary Beth Goodman June 2015

Contents

Introduction and summary

Whether used by a suicide bomber, concealed on the ground, implanted in a vehicle, or remotely detonated, improvised explosive devices, or IEDs, are an enormous threat to both military and civilian populations. Their widespread use in conflict areas has resulted in innumerable deaths and injuries around the world.

Between May 2013 and April 2014, more than 15,000 IED events were tracked globally, ranging from cache finds to detonations. These events caused more than 40,000 casualties—deaths and injuries—in countries excluding Afghanistan and an additional 12,024 incidents and 11,167 casualties in Afghanistan alone.[1] As shocking as these numbers may be, experts believe that the number of IED events is underreported around the globe. IEDs are wreaking havoc around the world from the battlefields of Afghanistan, Iraq, and Syria to Columbia, India, Pakistan, Kenya and other locations where civilians are the primary targets.[2] The IED will continue to be copied, and rather than disappearing, it is proliferating.

All improvised explosive devices need basic components in order to function. While the type of explosive element might change, the vast majority of IEDs use commercial-grade materials such as fertilizer for the blast. In addition, all IEDs need some sort of detonator to trigger the explosion. Detonators and precursor chemicals are manufactured products with many legitimate and lawful uses and, therefore, are sold on the open market and shipped via normal commerce and international trade practices. Similarly, fertilizers are produced with chemicals and inputs that are manufactured and sold for justifiable and appropriate purposes every day.

While militant groups such as al-Shabaab, Boko Haram, and the Islamic State of Iraq and al-Sham, or ISIS, use IEDs to kill and maim, they do not manufacture detonators and blasting caps. Nor do they manufacture munitions, fertilizers—such as ammonium nitrate-based fertilizer[3]—or other chemicals needed to make explosives. Rather, these militant groups repurpose munitions and import these precursor chemicals and detonators through facilitators or by smuggling the goods across borders, as *The New York Times* recently reported.[4]

Clearly, limiting access to these ingredients restricts their use, and efforts must be made to limit the flow of these goods to militant groups. It is essential to apply the lessons learned from battlefield experiences in Afghanistan and Iraq to combat disparate groups of militants around the globe that seek to subjugate citizens through fear and to inflict maximum harm with cheap weapons. Yet from ISIS to Boko Haram to al-Shabaab, militant groups have a seemingly unfettered ability to import or smuggle the materials necessary to make IEDs.

The United States needs to rely on the considerable diplomatic tools available, as well as customs and law enforcement efforts, to stem the flow of IED components to militant groups. Despite significant military expenditures, the United States cannot defeat the threat of IEDs alone and needs to ensure that international coalitions and multilateral partnerships are utilized. Specifically, a multilateral partnership called Program Global Shield that is tasked with halting the illegal international flow of chemicals used for making IEDs should be reinforced and its mandate expanded in order to truly have a "comprehensive and sustained counterterrorism strategy," particularly against ISIS.[5] As part of a broader counter-IED effort, a global coalition of customs and law enforcement experts urgently needs to strengthen cooperation and enforcement of regulations in order to stem the flow of precursor chemicals and detonators to militants. Rapid action to quickly expand the mandate for Program Global Shield could draw upon information from the global trading system and provide an effective tool to help combat ISIS and other militant groups across the globe.

The United States will spend approximately $500 million from one portion of the U.S. Department of Defense budget in fiscal year 2016 to combat the threat of IEDs, yet the $5.9 million multiyear global project that counters the illicit diversion and trafficking of precursor chemicals used to manufacture IEDS is set to expire at the end of 2015. The United States and the international community must use all available tools to counter the immediate threat of militant groups. Together, they must recognize that nonmilitary efforts can be effectively deployed to counter the use of IEDs—as long as bureaucracy does not get in the way.

Cheap weapons of choice

An improvised explosive device is defined by the United Nations as:

> *A device placed or fabricated in an improvised manner incorporating explosive material, destructive, lethal, noxious, incendiary, pyrotechnic materials or chemicals designed to destroy, disfigure, distract or harass. They may incorporate military stores, but are normally devised from non-military components.*[6]

Americans became far too familiar with the acronym IED during the course of the wars in Iraq and Afghanistan; while graphic images of IED attacks were beamed into Americans' homes daily, far too many military personnel encountered the threat directly. Not surprisingly, IEDs became the weapon of choice for Al Qaeda, the Taliban, and other militants groups battling coalition forces. More than 60 percent of American combat casualties in Afghanistan were caused by IEDs, with similar figures reported in Iraq.[7] IED attacks in Afghanistan increased 56 percent from 2009 to 2012, with the Pentagon reporting that 14,500 IED attacks corresponded with an increase in the availability of precursor chemicals, such as fertilizer from Pakistan and other countries.[8]

But the effects of IEDs are by no means limited to the military or war zones. The U.K.-based research and advocacy group Action on Armed Violence found that IEDs killed or injured 53,008 civilians in 66 countries and territories from 2011 to 2013.[9] Civilians made up 81 percent of the total number of IED casualties and a "staggering" 91 percent of those killed and injured when IEDs are used in populated areas.[10] The United States itself has suffered mass civilian causalities as a result of the misuse of precursor chemicals such as fertilizer. In 1995, Timothy McVeigh and Terry Nichols mixed these chemicals with fuel oil to create the bomb that destroyed the Alfred P. Murrah Federal Building in Oklahoma City, killing 168 people.[11]

IEDs are widely used because they can be made in the home and are cheap and easy to make. In addition, knowledge of how to make IEDs is collectively shared among militant groups, published in manuals, and taught through apprenticeships. Militants and armed actors can even find instructions detailing how to make IEDs on the Internet. Moreover, language is no barrier; Anders Behring Breivik, who killed 77 people in Norway, used Google Translate to understand the terror manuals he found online during preparation for his IED attack on Oslo.[12]

IEDs are typically the weapon of choice for militants in Afghanistan and many—if not most—have been made using chemicals found in fertilizers.[13] Militants boil the fertilizer to remove the components that keep it from being an effective explosive and then convert it into material that can be used in bombs. This is knowledge that both Al Qaeda and ISIS have made available via instruction manuals that show followers the manufacturing process using common household items.[14]

"Compounding the expanding IED global presence is that terrorist networks share information," Army Lt. Gen. John D. Johnson, the commander of the Joint Improvised Explosive Device Defeat Organization, or JIEDDO, recently stated. "The enemies are very innovative, and they share their ideas and innovations. If we see IEDs that have success in one place, we can guarantee you we're likely to see it elsewhere."[15]

Al-Shabaab in Somalia and Al Qaeda in the Islamic Maghreb in North Africa are major users of IEDs, targeting members of local and national governments, security forces, and civilians. Boko Haram in Nigeria and various Ansar al-Sharia groups in Libya and Tunisia share Al Qaeda's ideology and use IEDs heavily in their attacks.[16] The use of IEDs as a weapon of choice and a tactic to sow fear has expanded to new conflict zones outside of Afghanistan and Iraq, as well as to so-called safe places such as Norway, Thailand, Spain, and the United States.

Growing global threat

On May 4, *The New York Times* published an article that highlighted trade across a seemingly open, ungoverned border between Turkey and ISIS-controlled territory in Syria. It also documented the vast amounts of fertilizer taken across the Turkey-Syria border for use by ISIS militants in the manufacture of IEDs.[17]

Indeed the knowledge and use of IEDs is expanding, specifically in ISIS-held territory. On March 25, the U.S. Central Command said in a statement that Iraqi forces carried out multiple successful counterattacks against ISIS fighters near the cities of Kirkuk, Bayji, and Habbaniyah, including blunting two car bombs and 12 suicide bombers in an effort to retake the Habbaniyah bridge.[18] *Defense News* reported that the fighting in Tikrit and Mosul "promise to be tough slogs where Islamic State is expected to use the IED as one of its main weapons."[19] Noting that Iran, Iraq and the Shiite militias have cleared hundreds of IEDs around Tikrit, *Defense News* reported, "The Iraqis are struggling to keep up with the sheer number of buried bombs, which has stalled the expected operation to push into [Tikrit] and clear it of what is expected to be several hundred extremists."[20]

Large amounts of munitions were left unsecured following the collapse of government authority in Iraq, Libya, and Syria and have subsequently been used by militants to manufacture IEDs.[21] The majority of these stockpiles are in unsecure areas, making it impossible to safeguard them. However, as these wars continue to rage, those munitions stocks are depleting and militants are turning to precursor chemicals for the explosive charge in IEDs.

The *New York Times* article documents the unchecked flow of ammonium nitrate fertilizer across the Turkey-Syria border with firsthand accounts of the growing scale of the trade. The volume of this trade is not known. However, parties on all sides of the conflict in Iraq and Syria have used IEDs on an unprecedented scale.[22] Conflict Armament Research reports that ISIS is using IEDs on a scale never used before for fertilizer-based explosives, noting that "it is unprecedented and a revolution in their use and deployment."[23]

Yet, after years of civil war in Syria, the amount of domestic manufacturing is vastly reduced if occurring at all,[24] and manufacturing is also vastly disrupted in significant portions of Iraq, including fertilizer production. Even prior to the fighting, Iraq and Syria's fertilizer needs outstripped domestic fertilizer production capacity.[25] Agricultural output and licit fertilizer needs are also significantly reduced due to the violence and ongoing drought, with some reports indicating that Syria's wheat production could fall to the lowest levels in 40 years.[26]

The *New York Times* article sounds the alarm on the need to draw Turkey into better cross-border management for trade flows in goods that ISIS can use for illicit purposes. Unfortunately, the *New York Times* article also demonstrates the U.S. government's failure to internalize lessons from recent wartime experiences in Afghanistan and highlights the need for enhanced coordination among U.S. civilian government agencies and the U.S. Department of Defense, or DOD, to stem the flow of precursor chemicals into the hands of ISIS.

This is not new. The smuggling and importation of fertilizer by militants in Afghanistan from neighboring countries directly contributed to the increased use of such materials in IEDs, which killed and injured thousands of civilians and military personnel. The flow of trade must be monitored and targeted to minimize the impact and use of IEDs by ISIS. There is an urgent need for the international community to quickly draw upon established networks of customs and law enforcement officials that can act as force multipliers to military channels in countering the threat of ISIS and other extremists groups around the globe.

Upstream versus downstream

In order to combat the threat posed to U.S. and coalition military personnel on the battlefields of Iraq and Afghanistan, the U.S. Department of Defense established the Joint Improvised Explosive Device Defeat Organization in 2006. The department directed JIEDDO to lead, advocate for, and coordinate all DOD actions in support of the combatant commanders and their respective joint task forces' efforts to defeat IEDs as weapons of strategic influence. One of JIEDDO's primary roles is to provide funding to the military services and DOD agencies to rapidly develop and field counter-IED solutions.[27] JIEDDO's efforts to stop or minimize IED attacks have consisted of developing new approaches such as jamming electronic detonators, implementing new intelligence gathering techniques, improving armor protection for vehicles and soldiers, and offering training for both military bomb squads and regular troops. By 2008, JIEDDO had expanded its operations, with its budget increasing to $4 billion annually.[28] Total funding has exceeded $24 billion over the span of the wars in Iraq and Afghanistan.[29]

JIEDDO was given special authority to purchase new equipment quickly and outside of normal acquisition rules.[30] While there have been criticisms of JIEDDO's mission creep and procurement policies that continue to be debated, there is no doubt that the work of JIEDDO saved lives.[31] In March, the DOD announced that JIEDDO will be reclassified as a combat-support agency—which will make JIEDDO's mission permanent, extending well beyond the combat zones of Iraq and Afghanistan—with a new yet-to-be-announced name.[32]

As noted in *Politico,* JIEDDO "is working on a new concept to 'institutionalize' both the wartime mission and develop plans to tackle other emerging battlefield threats," according to its director, Army Lt. Gen. John Johnson. And the organization is thinking big—in Johnson's words, it is considering issues ranging from "globally associated threat networks not confined to any one particular geographic area to potentially other disruptive technologies."[33]

The vast majority of the work that JIEDDO has done thus far and continues to do is focused on dismantling IEDs on the battlefield—known as the "upstream"—and improving armor and protection for soldiers that could help them survive an IED attack. While these are extremely notable efforts, the focus on technologies to dismantle an IED after it is constructed does little to disrupt the "downstream"—or the network of trade that allows militant groups to purchase the materials needed to manufacture an IED in the first place. In order to stem the flow of IEDs, efforts must be made to stop the flow of precursor chemicals and detonators that are used to manufacture IEDs.

Generally, IEDs contain four components: a main charge, a smaller explosive initiator, an initiating mechanism—a switch or trigger—and a container.[34] The main charge consists of commercial-grade explosives as a mechanism for initiating the explosion. Typically, "readily available precursor chemicals are the most prevalent form of explosive employed in the bombings around the world. … Fourteen chemicals have been identified as the most widespread precursors," according to the World Customs Organization, or WCO, "Illicit Trade Report."[35] The 14 precursor chemicals most often used in IEDs are ammonium nitrate, nitromethane, sodium nitrate, potassium nitrate, sodium chlorate, potassium chlorate, potassium perchlorate, acetone, hydrogen peroxide, nitric acid, urea, aluminum powder, calcium ammonium nitrate, and acetic anhydride.[36] These precursors are used to produce dual-use goods such as fertilizers, fireworks, pesticides, and other items for legitimate use.

Each of these dual-use goods is assigned a specific six-digit numerical code within the international customs nomenclature called the Harmonized Tariff Schedule. Customs authorities around the globe use the same harmonized schedule and harmonized tariff codes to impose duties and to monitor the flow of imports and exports. The World Customs Organization is a global intergovernmental organization with 179 members, three-quarters of which are developing countries. The WCO's membership processes more than 98 percent of all international trade.[37] The organization serves as the global forum to enact changes to the Harmonized Tariff Schedule and as the focal point for training and consistency in the implementation of customs trade rules for countries around the world.

In addition to precursor chemicals, detonators are a critical component of IEDs that are frequently diverted for illegitimate use. Detonators are one of four main parts of an IED and are that hardest to make from scratch.[38] As Roger Davies, a counter-IED specialist, notes, "If you gave a terrorist a choice, he'd always use a

commercial detonator, and it's only when the supply of commercial detonators gets tricky that they'd produce their own."[39] Although detonators can be improvised, the process is dangerous and difficult. Information sharing, increased awareness, and enhanced enforcement of marking requirements and industry oversight of the manufacture and shipment of detonators could significantly affect their illicit use in IEDs.

Without detonators, IEDs are essentially inert, and therefore, detonators must be included in future customs and law enforcement monitoring of IED components.[40] It must be noted, however, that the production of commercial detonators is licit and a necessary business interest for many industries globally. North America—the United States, Canada, and Mexico combined—represents 8 percent and China accounts for 62 percent of the estimated global production of detonators.[41]

China is also the world's largest producer of potassium chlorate, which is legally used in the production of safety matches, fireworks, pesticides, and other products. Potassium chlorate is also currently an ingredient favored by militants in Afghanistan for IED production.[42] Additionally, China is a major shipper of other precursor chemicals used in IEDs and a significant player in all international commerce. Therefore, it is essential to engage with China to ensure that efforts are made to monitor the recipients of precursors and detonators in order to guard against illicit use of these components in IEDs. Monitoring sales, collecting data, and imposing strict regulations on both commercial detonators and precursors could help prevent the manufacture of IEDs.

Program Global Shield

In order to combat the illicit use of precursor chemicals by terrorist and other criminal organizations for the manufacture of IEDs, the United States initiated an effort dubbed Program Global Shield in 2010. Initially proposed by the U.S. Department of Homeland Security, or DHS, and funded by the U.S. Department of State, Program Global Shield represents an unprecedented multilateral law enforcement effort aimed at combating the illicit diversion and trafficking of precursor chemicals for making explosives by monitoring their cross-border movements.

The program now has 94 countries and international organizations participating and brings together the expertise of the World Customs Organization, Interpol, and the U.N. Office on Drugs and Crime to monitor the trade flows of the 14 precursor chemicals in an effort to raise global awareness about these products.[43] The ultimate goal of Program Global Shield is to identify and interdict falsely declared precursor chemicals, initiate investigations, and uncover smuggling networks. In doing so, the WCO aims to build capacity among strategic partners to detect illicit shipments of explosive precursors and to promote cooperation among customs and law enforcement administrations in combating the illicit diversion of explosives precursors along the global supply chain.

Program Global Shield was originally conceived to counter the detrimental impact of IEDs on coalition troops in Afghanistan and to improve the ability of customs and border officials in Afghanistan, Pakistan, and Central Asian states to identify and seize precursor materials smuggled across the Afghan border. While the conception of the program was aimed specifically at this geographic region, the effort focused on building a much broader global coalition of monitoring through customs administrations around the world.

Given that these precursor chemicals are dual use—meaning that the chemicals have both legitimate and illicit uses—regulations and oversight are necessary to monitor the markets and report shipments that officials suspect are intended for illicit use, such as IED manufacturing. Goods move freely in international commerce between a buyer and seller, but a paperwork trail exists to document the shipping orders and cargo transported from port to port. It is essential to monitor bomb-making materials in a controlled manner in order to contain the use of these deadly IEDs. "Customs administrations have the task of identifying the high-risk shipments and warning each other regarding the potential need for additional, in-depth controls," according to the WCO.[44] Countries can also use domestic regulations to monitor internal controls and the production of dual-use goods.[45]

Program Global Shield is unquestionably necessary as it combines the reporting and monitoring capabilities of 94 countries around the world. There simply is no other platform that connects customs administrations and law enforcement globally in a coordinated effort to stem the flow of precursor chemicals used in IEDs. While many seizures are not fully reported for statistical purposes due to issues with developing countries' connectivity to the official WCO computer system, more than 114 metric tons of solid chemicals and nearly 13,000 liters of liquid precursors were seized within the framework of Program Global Shield by customs and law enforcement in 2013 alone. [46] Ammonium nitrate and potassium chlorate accounted for the bulk of the seizures during 2013, representing 92 percent of all precursors seized.[47] In 2013, 80 percent of seizures were reported by Afghanistan and the remaining 20 percent were in Kyrgyzstan, Mali, Montenegro, and Thailand.[48] Furthermore, 20 already produced IEDs were seized, 28 individuals connected to the seizures were arrested, and 120 warning messages on suspicious shipments were sent through the secure information exchange used by the 94 participating customs administrations in Program Global Shield.[49]

Defeating the threat of IEDs must be viewed as a marathon rather than a sprint. Program Global Shield is based both on a platform of sharing trade intelligence and, just as importantly, on ensuring that customs and law enforcement officials on the front lines are sufficiently trained to know about the threat of precursor chemicals and detonators being used for illicit purposes. A "train the trainer" curriculum has been developed to ensure that expanded numbers of customs officials are trained in each country and that this training methodology can be quickly deployed in other countries. Training thus far has been largely limited to Afghanistan and surrounding border states, but there is enormous potential to expand the network of those contributing to seizures of precursor chemicals and detonators.

At the October 2014 WCO seminar in Brussels, Kumar C. Kibble, a senior DHS official, noted:

> *Developing working relationships takes time and effort. … We have to learn each other's capabilities and limitations, languages and acronyms, techniques and procedures. We have to shift attitudes from acceptance of routine bureaucratic constraints, to a can-do determination to go over, under, around or if necessary, break through obstacles – while at the same time, respecting our varied laws and sovereign concerns.*[50]

Program Global Shield provides the necessary framework for this type of collaboration and enhanced monitoring.

Looking forward to enhanced counter-IED efforts

A 2014 report to the U.N. Security Council from the United Nation's Al-Qaida Sanctions Committee stated that "at least 90 countries are affected by IEDs."[51] In particular, use in Africa is on the rise, but countries have very limited capacity to deal with the underreported threat. Between May 2013 and April 2014, JIEDDO tracked 851 incidents that caused 3,216 casualties across 10 African countries, with the largest share in Somalia.[52]

To reflect the expanded use of IEDs and the global nature of the threat, the mandate of Program Global Shield needs to be expanded beyond Afghanistan and the Central Asia region. Specifically, Program Global Shield should reflect the growing threats in Africa and respond to the current conflict against ISIS. The full impact of what could be a global monitoring effort to prevent ISIS, al-Shabaab, and other militant groups from obtaining detonators and precursor chemicals for IEDs has simply not been harnessed.

Of equally great concern, the current mandate of Program Global Shield is set to expire in December 2015. Moreover, a bureaucratic quagmire in the United States has resulted in no clear plan to ensure the continuation of this essential customs framework. While WCO officials are keen to continue this effort, working-level U.S. officials have expressed concern that the program would not receive sufficient high-level attention from decision-makers to ensure continuation.[53] While the WCO needs to secure additional funding from other countries for the long-term sustainability of the program, the short-term reality is that the United States is the most likely contributor to maintain the established network. Furthermore, Program Global Shield is not likely to continue without U.S. support, let alone expand to reach its full potential.

Given the threat of foreign fighters returning from the ISIS battlefields and the very real possibility that many have acquired experience in making IEDs, European countries should see Program Global Shield as a viable option to help protect citizens. Collective efforts are essential to ensure that borders and, more

importantly, people are secure. Europe has already seen deadly attacks from IEDs. Both the London bombings in 2005 and the Madrid train bombing in 2004 used IEDs made from dual-use precursor chemicals.[54] Amazingly, Anders Behring Breivik's purchase of precursor chemicals four months before his attack that killed 77 people in Oslo was reported to Norwegian officials through Program Global Shield, but Norwegian officials failed to act on the information.[55]

Funding is the primary issue for Program Global Shield's viability. The United States has been the only country to contribute to the program, and the U.S. Department of State has provided the program's $5.9 million in funding as a grant to the WCO to cover the program's total costs from September 2012 through December 2015.[56] DHS is prohibited from transferring money to an international organization and has relied upon cooperation from the State Department; however, as Congress has continued to slash foreign assistance funds, programs such as Program Global Shield are unfortunately not prioritized among the plethora of competing demands that must be covered by civilian foreign assistance budgets. Furthermore, the current State Department funding for Program Global Shield was notified to congressional oversight committees and justified as essential to support the counter-IED threat in Afghanistan. As such, the WCO cannot use the current U.S. funding for use through December 2015 to address the expanded IED threat in Africa and ISIS-held territories due to internal U.S. government budgetary reporting requirements.

In comparison, the fiscal year 2016 budget estimate for JIEDDO is $493.191 million, which represents a 10 percent increase from FY 2015. The JIEDDO budget request states:

> *Defeating the strategic influence of all forms of IEDs against U.S. Forces requires a comprehensive approach that combines an aggressive offense with a solid defense, and uses the latest technology to maintain a capability that remains ahead of enemy innovations. JIEDDO coordinates DoD actions to rapidly provide C-IED capabilities in support of the Combatant Commands (CCMDs) and to enable the defeat of the IED as a weapon of strategic influence, striking a balance of focused intelligence fusion, technology, and training. JIEDDO provides capabilities for deployed forces via four budget activities or Lines of Operation (LOO): (1) Attack the Network, (2) Defeat the Device, (3) Train the Force, and (4) Staff & Infrastructure. … This organizational structure facilitates collaboration and mission execution across DoD. JIEDDO develops the means to successfully disrupt the networks that fund, develop and employ*

IEDs, and provides defenses at the point of attack. Additionally, JIEDDO provides for the training of warfighters in the use of new equipment and tactics, techniques, and procedures against emerging IED threats until such training can be established and provided by the Services. The FY16 request is formulated to rapidly deliver global C-IED solutions to eliminate the IED as a weapon of strategic influence.[57]

Despite a recognized need to disrupt the networks of IEDs and the potential to receive information on the shipments of precursor chemicals and detonators moving around the world, JIEDDO has not contributed any monetary resources to Program Global Shield. Legislation must be passed to enable JIEDDO to support the program in order to improve internal coordination within the U.S. government, as well as to tap into the global networks of customs officials and law enforcement officers. An amendment should be included in the National Defense Authorization Act to allow JIEDDO funds to be used to support the continuation of Program Global Shield.[58] Such funding would be a small slice of the requested $493 million.

As Peter Singer, noted scholar and former director of the Center for 21st Century Security and Intelligence at The Brookings Institution, wrote:

An enduring threat requires an enduring capability to counter it. With their growing and spreading use, however, IEDs present increasingly difficult balance-of-costs problems. The United States has spent roughly $17 billion on various anti-IED gear over the last decade, and that's not counting the $45 billion we've spent on mine-resistant vehicles. We have to figure out how to alter the investment ratio. This is not just a budgeting issue. It is unsustainable to keep throwing billions of dollars to fight a technology that costs the other side tens of dollars. We need not silver-bullet solutions but ones that are cheap and scalable.[59]

The question is not the amount of money thrown at the IED problem but rather ensuring that other countries join to help fight the flow of precursor materials and detonators, share information from a range of sources, and collaborate on efforts to protect civilian populations and military personnel regardless of nationality. Given the global nature of the international trading system, only a global program such as Program Global Shield and other collaborative efforts aimed at countering IEDs will have a measurable impact; it would be a setback to lose the collective expertise and connections developed to date among the 94 participating countries.

While extensive technological efforts, countermeasures, and regulations are being adopted to prevent IED attacks, the development of IEDs often evolves faster than counter-IED solutions, with militants finding ways around them. The United States needs to ensure that it looks to align all of the efforts possible to stem the flow of IED materials and get the entire force of U.S. diplomatic, law enforcement, and military powers in sync. Budgets and bureaucratic funding requirements and oversight should not be the enemy of the good.

IEDs are a global concern, and a global partnership is necessary to facilitate efforts aimed at stemming the flow of dangerous materials used in IEDs. But the reality is that without U.S. support, the success and utility of Program Global Shield will not be realized given the vital role that the United States plays in coordinating the engagement and analyzing the customs data on high-risk shipments. Insurgents need raw materials and detonators, as well as financing, for IEDs. This is where a network of customs authorities and law enforcement officials can provide valuable inputs to scale up the global effort against terrorist and militant groups by helping to focus on the materials traded, the travel patterns and movement of people, and the flows of money used to finance IED operations.

It is also essential to get China to join the Program Global Shield effort. Chinese production of detonators dwarfs that of all other countries, "possibly exceeding half of the overall global production," according to a report from the Institute for Defense Analyses.[60] It is simply not practical to exclude China's participation in an international program aimed at prohibiting the illicit use of IED materials that kill and injure civilians around the world. Efforts must be made to ensure that China is part of Program Global Shield in order to allow the multilateral partnership to be fully operational and save countless lives.

Conclusion

On February 26, 2013, the White House issued a policy statement on "Countering Improvised Explosive Devices" to mark the 20th anniversary of the first World Trade Center attack.[61] The White House strategy for translating policy into action included increasing global participation and partnership in dialogues on counter-IED efforts and information sharing, as well as increasing global awareness of action to mitigate the use of munitions, precursor chemicals, and other components in IED construction.[62]

Yet the global effort aimed at coordinating an oversight mechanism to remove the component parts necessary to build an IED, such as detonators and precursor chemicals, from the international commerce stream is set to expire. U.S. officials need to quickly galvanize diplomatic efforts to correct this and ensure that every available tool is brought to bear to counter the rise of ISIS and other militant groups.

As David Sedney, a senior U.S. Department of Defense official, noted in testimony before the Senate Foreign Relations Committee in 2010:

> *DoD has brought significant resources to bear in trying to counter the IED threat … from the military perspective, but we have increasingly recognized that interagency cooperation and cooperation with foreign governments are essential in addressing this complex issue. Active coordination with U.S. Government diplomatic, economic, intelligence, and military resources, as well as cooperation from foreign governments, is the key to a successful effort to defeat IED networks.*[63]

Program Global Shield must be extended beyond December 2015, and the program's mandate must be broadened to focus on the global nature of the IED problem. IEDs are no longer confined to the battlefields of Afghanistan and Iraq but are used by militants around the world. International customs administrations and law enforcement officials can serve as a powerful force multiplier and collect

information on international trade flows that will enhance the efforts of military officials seeking to disrupt the use of IEDs. But it will take a network of countries acting together to be successful—and that network must include China as a participating member.

Militants freely share information about how to build IEDs and attacks are on the rise against civilians and military personnel around the globe. It is time for the U.S. government to freely share information and resources across agency silos and to ensure that bureaucratic boundaries and restrictions do not undermine multilateral efforts aimed at removing precursor chemicals and detonators from the hands of militants who are intent on doing harm. Given the global nature of the international trading system, successful efforts to reduce the illicit materials falling into the hands of ISIS will only be possible if countries around the globe cooperate to share information and work jointly to stop these flows.

About the author

Mary Beth Goodman is a Senior Fellow for the National Security and International Policy team at the Center for American Progress and a Senior Advisor to the Enough Project. She previously served as the director for international economics at the White House and as a diplomat for the U.S. Department of State.

Endnotes

1 Joanna Wright, "Weapon of Choice: Militants Modify IEDs to Evade Counter-Measures," *Jane's Intelligence Review*, August 2014, p. 9.

2 Terri Moon Cronk, "Combat Support Agency Counters Worldwide IED Threats," *Defense News*, April 6, 2015, available at http://www.defense.gov/news/newsarticle.aspx?id=128532.

3 Mark Landler, "U.S. Tries to End Flow of Bomb Item to Afghanistan," *The New York Times*, November 14, 2010, available at http://www.nytimes.com/2010/11/15/world/asia/15chemical.html; Umar Farooq, "Pakistani fertilizer grows both Taliban bombs and Afghan crops," *The Christian Science Monitor*, May 9, 2013, available at http://www.csmonitor.com/World/Asia-South-Central/2013/0509/Pakistani-fertilizer-grows-both-Taliban-bombs-and-Afghan-crops.

4 Ben Hubbard and Karam Shoumali, "Fertilizer, Also Suited for Bombs, Flows to ISIS Territory From Turkey," *The New York Times*, May 4, 2015, available at http://www.nytimes.com/2015/05/05/world/europe/fertilizer-also-suited-for-bombs-flows-to-isis-territory-from-turkey.html?_r=0.

5 The White House, "Statement by the President on ISIL," Press release, September 10, 2014, available at https://www.whitehouse.gov/the-press-office/2014/09/10/statement-president-isil-1.

6 United Nations, "International Ammunition Technical Guideline: Glossary of terms, definitions and abbreviations" (2011), available at https://unoda-web.s3.amazonaws.com/wp-content/uploads/assets/convarms/Ammunition/IATG/docs/IATG01.40.pdf.

7 Action on Armed Violence, "Material Harm: A Review of IED Components and Measures to Prevent Their Spread" (2014), p. 18.

8 Farooq" Pakistani fertilizer grows both Taliban bombs and Afghan crops."

9 Action on Armed Violence, "Material Harm," p. 2.

10 Ibid.

11 Federal Bureau of Investigation, "Terror Hits Home: The Oklahoma City Bombing," available at http://www.fbi.gov/about-us/history/famous-cases/oklahoma-city-bombing (last accessed June 2015).

12 Action on Armed Violence, "Material Harm," p. 3.

13 Ibid.

14 Ibid.

15 Cronk, "Combat Support Agency Counters Worldwide IED Threats."

16 Wright, "Weapon of Choice," p. 10.

17 Hubbard and Shoumali, "Fertilizer, Also Suited for Bombs, Flows to ISIS Territory From Turkey."

18 Paul McLeary, "Trainers in Iraq Focus on IED Detection," *Defense News*, March 28, 2015, available at http://www.defensenews.com/story/defense/land/weapons/2015/03/28/ied-iraq-jieddo-tikrit-us-centcom-islamic-state/70548134/.

19 Ibid.

20 Ibid.

21 Wright, "Weapon of Choice," p. 10.

22 Joint Improvised Explosive Device Defeat Organization, *Fertilizer Use In Explosives Iraq And Syria* (U.S. Department of Defense, 2015). Report is on file with the author.

23 Ibid.

24 Ibid.

25 Ibid.

26 Suleiman al-Khalidi and Maha El Dahan, "War-ravaged Syria may face worst wheat harvest in 40 years," Reuters, April 28, 2014, available at http://www.reuters.com/article/2014/04/28/us-syria-wheat-crops-exclusive-idUSBREA3R0II20140428.

27 Government Accountability Office, "Warfighter Support: Actions Needed to Improve the Joint Improvised Explosive Device Defeat Organization's System of Internal Control," GAO-10-660, Report to Congressional Committees, July 2010, available at http://www.gao.gov/new.items/d10660.pdf.

28 Jen Judson, "Wartime office to counter IEDs eyes broader mission," *Politico*, April 10, 2015.

29 Seán Naylor, "For Generals Fighting the Islamic State, a Sense of Déjà Vu," *Foreign Policy*, May 28, 2015, available at http://foreignpolicy.com/2015/05/28/for-generals-fighting-the-islamic-state-a-sense-of-deja-vu/.

30 Government Accountability Office, "Warfighter Support."

31 Ibid.

32 Nick Simeone, "Defense Department Approves JIEDDO Reorganization," *Defense News*, March 13, 2015, available at http://www.defense.gov/news/newsarticle.aspx?id=128361.

33 Judson, "Wartime office to counter IEDs eyes broader mission."

34 Action on Armed Violence, "Material Harm," p. 5.

35 World Customs Organization, "Illicit Trade Report" (2013), p. 108, available at http://www.wcoomd.org/en/media/newsroom/2014/june/~/media/WCO/Public/Global/PDF/Topics/Enforcement%20and%20Compliance/Activities%20and%20Programmes/Illicit%20Trade%20Report%202012/ILLICIT%202013%20-%20EN_LR2.ashx.

36 World Customs Organization, "Programme Global Shield," available at http://www.wcoomd.org/en/topics/enforcement-and-compliance/activities-and-programmes/security-programme/programme-global-shield.aspx (last accessed June 2015).

37 World Customs Organization, "WCO in brief," available at http://www.wcoomd.org/en/about-us/what-is-the-wco.aspx (last accessed June 2015).

38 Action on Armed Violence, "Material Harm," p. 14.

39 Ibid.

40 Detonators were not included in the original scope of Program Global Shield. Within the World Customs Organization, efforts are underway but not yet finalized to include detonators in the expanded list of monitored goods that would be subject to enhanced reporting from the 94 participating countries.

41 Institute for Defense Analyses, "Limiting the Availability of Commercial Detonators for Violent Extremist Organizations to Use in Improvised Explosive Devices" (2015), p. v. Report is on file with the author.

42 Wright, "Weapon of Choice," p. 9.

43 World Customs Organization, "Programme Global Shield."

44 World Customs Organization, "Illicit Trade Report," p. 108.

45 Action on Armed Violence, "Material Harm," p. 15.

46 World Customs Organization, "Illicit Trade Report," p. 109.

47 Ibid.

48 Ibid.

49 Ibid.

50 Remarks by Kumar C. Kibble, former deputy director, U.S. Immigration and Customs Enforcement, World Customs Organization Seminar, "Customs for Security: Stopping the Threat on the Borders," October 14, 2014.

51 Wright, "Weapon of Choice," p. 9.

52 Ibid., p. 10.

53 U.S. government and World Customs Organization staff, interview with author, May 2015.

54 Action on Armed Violence, "Material Harm," p. 13, 15.

55 Bjoern H. Amland, "Anders Behring Breivik Flagged In Anti-Terror Operation Before Norway Attacks," The Huffington Post, October 26, 2011, available at http://www.huffingtonpost.com/2011/08/26/anders-behring-breivik-anti-terror-operation_n_938101.html.

56 John Woods, Testimony before the House Committee on Homeland Security, Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies, "Securing Ammonium Nitrate: Using Lessons Learned in Afghanistan to Protect the Homeland from IEDs," July 12, 2012 available at https://www.dhs.gov/es/news/2012/07/12/written-testimony-ice-hsi-nsi-assistant-director-john-woods-closed-hearing-titled-; Central Asian Regional Information and Coordination Centre, "A regional meeting as part of Global Shield Programme," available at http://caricc.org/index.php/en/homepage/586-a-regional-meeting-as-part-of-global-shield-programme2 (last accessed June 2015).

57 U.S. Department of Defense, *FY2016 Overseas Contingency Operations Budget Request* (2015), Exhibit P-40, p. 4.

58 *National Defense Authorization Act for Fiscal Year 2016*, H.R. 1735, 114 Cong. 1 sess. (Government Printing Office, 2015).

59 Peter W. Singer, "The Evolution of Improvised Explosive Devices (IEDs)," The Brookings Institution, February 2012, available at http://www.brookings.edu/research/articles/2012/02/improvised-explosive-devices-singer.

60 Institute for Defense Analyses, "Limiting the Availability of Commercial Detonators for Violent Extremist Organizations to Use in Improvised Explosive Devices," p. 5.

61 The White House, "Countering Improvised Explosive Devices" (2013), available at https://www.whitehouse.gov/sites/default/files/docs/cied_1.pdf.

62 Ibid.

63 David S. Sedney, Testimony before the Senate Foreign Relations Committee, Subcommittee on Near Eastern and South and Central Asian Affairs, "Jamming the IED Assembly Line: Impeding the Flow of Ammonium Nitrate in South and Central Asia," November 18, 2010, available at http://www.foreign.senate.gov/imo/media/doc/Sedney%20and%20Shields.pdf.

Our Mission

The Center for American Progress is an independent, nonpartisan policy institute that is dedicated to improving the lives of all Americans, through bold, progressive ideas, as well as strong leadership and concerted action. Our aim is not just to change the conversation, but to change the country.

Our Values

As progressives, we believe America should be a land of boundless opportunity, where people can climb the ladder of economic mobility. We believe we owe it to future generations to protect the planet and promote peace and shared global prosperity.

And we believe an effective government can earn the trust of the American people, champion the common good over narrow self-interest, and harness the strength of our diversity.

Our Approach

We develop new policy ideas, challenge the media to cover the issues that truly matter, and shape the national debate. With policy teams in major issue areas, American Progress can think creatively at the cross-section of traditional boundaries to develop ideas for policymakers that lead to real change. By employing an extensive communications and outreach effort that we adapt to a rapidly changing media landscape, we move our ideas aggressively in the national policy debate.

Center for American Progress

1333 H STREET, NW, 10TH FLOOR, WASHINGTON, DC 20005 • TEL: 202-682-1611 • FAX: 202-682-1867 • WWW.AMERICANPROGRESS.ORG