



Syria's Chemical Weapons: Issues for Congress

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Summary

The use or loss of control of chemical weapons stocks in Syria could have unpredictable consequences for the Syrian population and neighboring countries as well as U.S. allies and forces in the region. Congress may wish to assess the Administration's plans to respond to possible scenarios involving the use, change of hands, or loss of control of Syrian chemical weapons.

Syria has produced, stored, and weaponized chemical weapons, but it remains dependent on foreign suppliers for chemical precursors. The regime of President Bashar al Asad reportedly has stocks of nerve (sarin, VX) and blister (mustard gas) agents, possibly weaponized into bombs, shells, and missiles, and associated production facilities. Chemical weapons and their agents can deteriorate depending on age and quality. Little is known from open sources about the current size and condition of the stockpile. Syria continues to attempt to procure new supplies of chemical weapons precursors, which are dual-use, through front companies in third countries. Most countries that have had chemical weapons arsenals in the past have destroyed these weapons under the Chemical Weapons Convention, or are in the process of destroying them. The U.S. intelligence community cites Iran, North Korea, and Syria as having active chemical weapons programs.

While the United States and other governments have said they believe the Asad regime has secured chemical weapons, policymakers are concerned about what could happen to these weapons in the course of the civil war, such as diversion to terrorist groups or loss of control during a regime collapse.

Reports in early December 2012 quoted unnamed officials as saying intelligence showed possible preparations for use, but this was denied by the Syrian government. Since then, press reports have discussed three alleged incidents of chemical weapons use in Syria. None have been confirmed by U.S. officials. A United Nations chemical weapons inspection team is negotiating with Syria on access to the sites to investigate.

According to letters sent April 25, 2013, to Senators John McCain and Carl Levin by Miguel Rodriguez, Assistant to the President and Director of the Office of Legislative Affairs, the U.S. intelligence community "does assess with varying degrees of confidence that the Syrian regime has used chemical weapons on a small scale in Syria, specifically the chemical agent sarin." The Obama Administration has emphasized that the evidence is not definitive, however, and that additional investigation is needed.

President Obama and other world leaders have said that the use of chemical weapons against the civilian population would be met with consequences, which could possibly mean the use of military force. There is also concern that Syria could transfer its chemical weapons to Hezbollah in Lebanon. Administration officials have stated that the United States has been working with regional allies to detect the movement of chemical weapons, prepare interdiction scenarios, and mitigate possible use against military or civilian populations.

During conflict, the intelligence community and Special Forces units would likely play a major role in locating and securing such weapons in a combat environment. The nature and recent course of the conflict in Syria suggests that rapid changes in control over critical military facilities may occur. U.S. government programs established to secure or remove chemical or other

weapons of mass destruction through threat reduction or nonproliferation programs have focused on destruction or scientist redirection in an atmosphere of cooperation. At present, such programs are providing border security assistance to neighboring states. U.S. policymakers and Congress may wish to review and discuss authorities, funding, forces, and scenarios in advance.

For additional information on chemical weapons agents, see CRS Report R42862, *Chemical Weapons: A Summary Report of Characteristics and Effects*, by Dana A. Shea. For a broader discussion of U.S. policy options, see CRS Report RL33487, *Armed Conflict in Syria: U.S. and International Response*, by Jeremy M. Sharp and Christopher M. Blanchard.

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Policy Issues

The Syrian case may be the first time the international community has faced a civil war in a state with a known stockpile of chemical weapons. This contingency raises two major policy concerns: whether the Asad regime would use chemical weapons; and, whether it could lose control over these weapons.

U.S. officials have expressed confidence that chemical weapons stocks in Syria are secured by the Asad regime, which dispatched elite Special Forces for that purpose. Due to the urgency of preventing access to these weapons by unauthorized groups including terrorists, the United States government has been preparing for scenarios to secure the weapons in the event of the Asad regime's loss of control. However, this presents unique challenges. In testimony before the Senate Armed Services Committee on March 7, 2012, Secretary of Defense Panetta said, "It's 100 times worse than what we dealt with in Libya. And for that reason, that's why it's raised even greater concerns about our ability to address how we can secure those sites." The Pentagon has estimated that it would take over 75,000 troops to neutralize the chemical weapons.¹

Specific scenarios have not been discussed in open testimony, but some analysts have proposed that advanced planning for international teams may be required. Press reports say that a joint exercise in Jordan in the spring of 2012 included scenarios for securing chemical weapons stocks. The United States and the Czech Republic, which leads NATO chemical defense preparation, are also cooperating to prepare for various scenarios. Israeli President Shimon Peres has appealed to Russian President Putin to urge Asad to ensure chemical weapons' security. Senator Richard Lugar has proposed that the United States and Russia cooperate to ensure chemical weapons security in Syria and eventually dismantle them.

Possible scenarios of highest concern include Syrian government use of chemical weapons—authorized or unauthorized by local commanders; or Syrian government loss of control through either defections by local commanders in charge of chemical weapons sites or a facility turnover in the course of battle. The United States and other governments have warned Syria that use of chemical weapons could prompt unspecified response, presumed to be military intervention. At the same time, the United States has been urging Russia, historically a patron of Syria, to encourage Asad to maintain control over chemical weapons. Some have suggested that the United States should communicate to Syrian government commanders at the sites that they will be rewarded for maintaining control of these weapons and not releasing these facilities to extremist elements. Other possible options include reaching out to the Free Syrian Army to train or assist them on how to secure chemical weapons if they overtake such facilities. Preventing chemical weapons from falling into the hands of extremist elements is the ultimate goal of such policies. There will continue to be limits, however, to the United States' ability to monitor the security of these stockpiles and limits to intelligence about where, how well, and by whom they are being secured.

In addition to concerns over loss of control, there is widespread concern that Asad could decide to use chemical weapons. In a speech at the National Defense University on December 3, 2012, President Obama stated, perhaps in reaction to recent reports of chemical weapon preparations: "I

¹ Barbara Starr, "Military: Thousands of troops needed to secure Syrian chemical sites," CNN.com, February 22, 2012.

want to make it absolutely clear to Asad and those under his command: The world is watching. The use of chemical weapons is and would be totally unacceptable. And if you make the tragic mistake of using these weapons, there will be consequences, and you will be held accountable.” Secretary of State Hillary Clinton has said that use would be a “red line” and that the United States was “planning to take action” should it occur. NATO Secretary General Anders Fogh Rasmussen has made similar statements.

Brief History of the Chemical Weapons Program in Syria

Syria has had a chemical weapons program “for many years,” according to an Office of the Director of National Intelligence (ODNI) report to Congress covering 2011.² However, U.S. official assessments regarding the origin of Syria’s chemical weapons program have varied over the years. A 1995 intelligence assessment states that “Syria has had a chemical warfare program since the mid-1980s.”³ However, a 1997 Department of Defense report states that the program began in the 1970s.⁴ Damascus probably developed its chemical weapons program in response to a perceived threat from Israel, according to a 1988 U.S. intelligence assessment and the 1997 Defense Department report.⁵ Some analysts point out that Egypt provided Syria with a small number of chemical weapons and delivery systems in the lead-up to the Yom Kippur War in 1973.⁶ An expanded Syrian effort began in the late 1970s and early 1980s. Declassified U.S. documents indicate that the Soviet Union supplied Syria with chemical agents, delivery systems, and training related to chemical weapons use.⁷ Syria is likely to have procured equipment and precursor chemicals from private companies in Western Europe.

U.S. government documents indicate that Damascus has sought a self-sufficient chemical weapons program since the mid-1980s. A 1983 Special National Intelligence Estimate indicated that Syria did not have an “indigenous capability to produce [chemical weapon] agents or material,”⁸ but a 1985 State Department telegram suggested that the country was attempting to develop its own chemical weapons.⁹ Stating that “Damascus is enhancing its chemical weapon capability,” the cable explains that the United States was imposing export controls on eight dual-

² *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 January to 31 December 2011.*

³ *The Weapons Proliferation Threat*, Nonproliferation Center, March 1995.

⁴ Department of Defense, *Proliferation: Threat and Response*, 1997.

⁵ Central Intelligence Agency, *Chemical and Biological Weapons: The Poor Man’s Atomic Bomb*, An Intelligence Assessment, 1988.

⁶ Jonathan B. Tucker, *War of Nerves*, Pantheon Books, New York, 2006.

⁷ Central Intelligence Agency, *Use of Toxins and Other Lethal Chemicals in Southeast Asia and Afghanistan*, Special National Intelligence Estimate, Volume I, Key Judgments, February 2, 1982; Director of Central Intelligence, *Implications of Soviet Use of Chemical and Toxin Weapons for U.S. Security Interests*, Special National Intelligence Estimate, September 15, 1983. The 1983 document also identified Czechoslovakia as a supplier of “chemical agents, delivery systems, and training” to Syria. Nevertheless, a Russian official involved in chemical weapons destruction stated in August 2012 that neither Russia nor the Soviet Union had supplied Syria with chemical weapons. “Russia Never Supplied Chemical Weapons to Syria – Official,” *Interfax*, August 21, 2012.

⁸ Implications of Soviet Use of Chemical and Toxin Weapons for U.S. Security Interests, 1983.

⁹ Telegram from Secretary of State to American Embassy Damascus, *Foreign Policy Export Controls on Chemical Weapon Precursors*, July 1985.

use chemicals that “can be used … in the manufacture of chemical weapons.” Twelve years later, Syria was seeking an “independent chemical warfare capability,” according to the Defense Department. Damascus has apparently not yet achieved this goal.

Like Egypt, Syria has never signed the Chemical Weapons Convention (CWC), which prohibits the development, production, stockpiling, transfer, and use of chemical weapons. However, in 1968, Syria acceded to the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, which bans the use of chemical or biological agents in warfare.¹⁰ Therefore, “Syria has formally renounced both first and retaliatory use of chemical or biological weapons against any State,” according to the Organization for the Prohibition of Chemical Weapons, which implements the CWC.¹¹ Syria has said that its ratification of the CWC (and BWC) is contingent on establishment of a zone free of weapons of mass destruction in the Middle East. Syrian Foreign Minister Walid al Mu'allim stated during a July 29, 2012, press conference that Damascus supports the establishment of such a zone.¹²

Current Chemical Weapons Program

Israel Defense Forces Deputy Chief of Staff Major-General Ya’ir Nave described Syria’s chemical weapons arsenal as “the largest in the world” during a June 2012 interview.¹³ Damascus reportedly possesses mustard blister agent, sarin nerve agent, and possibly VX nerve agent.¹⁴ The size of the stockpile is unknown from open sources. The country’s chemical weapons and related facilities appear to be distributed throughout the country. U.S. Defense Department Press Secretary George Little told reporters on July 24, 2012, that Syria has “a really distributed network of [chemical weapons] stockpiles.” Similarly, Director of National Intelligence James

¹⁰ Syria acceded with the reservation that accession did not represent recognition of the state of Israel, also a party.

¹¹ Damascus has signed, but not ratified, the Biological and Toxin Weapons Convention (BWC), which bans the development, production, and stockpiling of biological agents or toxins “of types and in quantities that have no justification for peaceful purposes.” Unlike Israel, Syria is party to the nuclear Non-Proliferation Treaty (NPT), although an Israeli military raid in 2007 is believed to have targeted a clandestine Syrian nuclear facility. The International Atomic Energy Agency continues to seek Syrian cooperation in answering questions related to nuclear activities in the country.

¹² “Syrian Foreign Minister Speaks Of Chemical Weapons, Iranian Support,” *Syrian TV Satellite Service*, July 29, 2012.

¹³ “Israeli Army General Says Syria Has Largest Chemical Weapon Arsenal,” *Voice of Israel Network B*, June 11, 2012. Most of the world’s chemical weapons arsenals have been destroyed or are awaiting destruction under the Chemical Weapons Convention. The United States, Russia, Iraq and Libya are in the process of destroying chemical weapons. India, South Korea and Albania have completed destruction. Israel and Myanmar have signed but not ratified the CWC. The following countries are not party to the CWC: Angola, Egypt, North Korea, Somalia, South Sudan, Syria. *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 January to 31 December 2011* cites Iran, North Korea and Syria as having active chemical weapons programs.

¹⁴ For effects of chemical agents, CRS Report R42862, *Chemical Weapons: A Summary Report of Characteristics and Effects*, by Dana A. Shea. Hearing of the Senate Armed Services Committee, *Worldwide Threats to U.S. National Security*, February 28, 2006, and State Department News Briefing, August 30, 2011. U.S. government officials and reports have stated that Syria was developing VX. (See then-Under Secretary of State Bolton, “Remarks on the Continuing Threat of Weapons of Mass Destruction,” November 12, 2003, and *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 January to 31 December 2006*).

Clapper told the Senate Armed Services Committee on February 16, 2012, that Damascus has “an extensive network” of chemical weapons installations.

As noted, Syria has sought an independent chemical weapons production capability for some time. However, according to the ODNI report covering 2011, “Syria remains dependent on foreign sources for key elements” of its chemical weapons program, “including precursor chemicals.”¹⁵ Precursor chemicals are generally dual-use chemicals with legitimate industrial uses that can be combined as feedstock to produce blister or nerve agents. Syria appears to lack the capacity to independently produce key precursors. Additionally, the potency and effectiveness of Syrian chemical agents are unknown since precursor chemicals may degrade over time.

According to the ODNI report covering 2011, Syria’s chemical weapons agents “can be delivered by aerial bombs, ballistic missiles, and artillery rockets.”¹⁶ Of these delivery vehicles, public official U.S. assessments apparently only provide detailed information about Syria’s ballistic missiles. Exactly which of these missiles are tasked with delivering chemical weapons is unclear. A 1988 U.S. assessment identifies Syria’s Scud B missiles as delivery vehicles for chemical weapons. However, more recent U.S. government statements have been somewhat less precise. In June 2003, then-Under Secretary of State for Arms Control and International Security John Bolton told a House Committee on International Relations hearing that Syria “is believed to have chemical warheads available for a portion of its Scud missile force,” but he did not specify which types of Scud missiles were assigned this mission. While missile warheads can deliver non-persistent chemical agents such as sarin, persistent agents such as VX and blister are viewed by many chemical weapons experts as being more effectively employed by missile warheads than non-persistent agents.

According to U.S. official assessments, Syria possesses Scud B, Scud C, Scud D, and SS-21 short-range ballistic missiles (SRBMs),¹⁷ all of which are mobile.¹⁸ However, the composition of Syria’s Scud missile inventory is not entirely clear; a 2006 report from the National Air and Space Intelligence Center (NASIC) includes the Scud B, Scud C, Scud D, and SS-21 in Syria’s SRBM inventory, but a 2009 NASIC report omits the Scud B and C.¹⁹ An ODNI report to Congress covering 2006 indicates that Syria’s Scud B and C missiles, as well as its SS-21 missiles, “can employ” chemical warheads.²⁰

¹⁵ Then-Under Secretary of State for Arms Control and International Security told the House Committee on International Relations in June 2003 that Syria was “dependent on foreign sources” for “key production equipment,” but whether that is still the case is unclear. See also Australia Group Plenary press release, June 2012, http://www.australiagroup.net/en/media_june2012.html.

¹⁶ *Unclassified Report to Congress Covering 2011*.

¹⁷ Defined as missiles having ranges under 1,000 kilometers.

¹⁸ *Ballistic and Cruise Missile Threat*, National Air and Space Intelligence Center, March 2006; *Ballistic and Cruise Missile Threat*, National Air and Space Intelligence Center, April 2009; *Unclassified Report to Congress Covering 2011*.

¹⁹ *Ballistic and Cruise Missile Threat*, 2006; *Ballistic and Cruise Missile Threat*, April 2009.

²⁰ *Unclassified Report to Congress Covering 2006*. The report states that “Syria’s operational missile force can employ chemical as well as conventional warheads.” The report did not explicitly list the components of the country’s “operational missile force,” but did describe Syria’s SRBM inventory as the SS-21 and “Scud-class liquid propellant” missiles. Scud B and Scud C missiles are liquid-fueled.

Another possibility is that Syria would use its batteries of BM-21 multiple rocket launchers, which can more reliably deliver ordnance to a targeted area.²¹ Rocket launchers, when massed, can be used to rapidly achieve lethal doses of non-persistent agents in a concentrated area. While Scuds might be used for targeting a neighboring country, it is more likely that artillery rockets would be used on the battlefield against rebel forces. However, other well-known difficulties in the employment of chemical weapons include inability to control the gas cloud resulting from an attack, putting one's own troops at risk without proper protection; contaminating the area attacked for days and weeks, depending on the chemical agent and weather conditions; and uncertain delivery of a lethal dose of the agent (due to dissipation of agents into the atmosphere or volatility of the agent).²²

Storage and munitions design could impact the length of time Syrian forces or other forces would have to deploy chemical weapons. Chemical munitions are either unitary or binary in design.²³ Unitary munitions are filled with the CW agent at a central facility, while binary munitions include two separate canisters of precursor chemicals that combine either manually or automatically inside the weapon when launched. It is not known from open sources which type of munitions Syria possesses. If unitary munitions are employed, it is not known whether chemical agent is stored in bulk, or warheads are filled in advance. This process could take weeks to months for battlefield quantities and is considered a hazardous undertaking for troops involved in filling unitary chemical munitions, as well as those troops handling, transporting, and delivering them. If Syria used binary munitions, then the warheads could potentially be deployed immediately.²⁴ Press reports in early December 2012 quoted unnamed officials as saying that Syria had combined the precursor chemicals for sarin into warheads, but no officials have publicly confirmed that information.²⁵

Syrian Statements on Chemical and Biological Weapons

In July, a Syrian official indicated that the government possesses chemical and biological weapons and may use them if attacked. During a July 23, 2012, press conference, Syrian Foreign Ministry Spokesperson Jihad Maqdisi stated that “[a]ny chemical or biological weapons will never be used … in the Syrian crisis, no matter what the internal developments in this crisis are.” He explained that “[a]ll varieties of these weapons are stored and secured by the Syrian armed forces and under its direct supervision, and will not be used unless Syria is subjected to external aggression.”²⁶

Subsequent statements from Syrian officials have tried to walk back this statement, indicating that the country does not have chemical or biological weapons. Information Minister Imran al-Zubi said in a July 23, 2012, interview that Maqdisi’s statement described above did not constitute an admission of chemical weapons possession, arguing that the statement was a response to

²¹ Scott Steward, “The Specter of Syrian Chemical Weapons,” Stratfor, August 2, 2012.

²² *Technologies Underlying Weapons of Mass Destruction*, Office of Technology Assessment, December 1993.

²³ *Technologies Underlying Weapons of Mass Destruction*, Office of Technology Assessment, December 1993.

²⁴ “NBC Capabilities- Chemical, Syria: Key Facts,” Jane’s Nuclear, Biological and Chemical Defense, July 24, 2012.

²⁵ “Exclusive: U.S. Sees Syria Prepping Chemical Weapons for Possible Attack,” *Danger Room*, Wired.com, December 3, 2012; “NATO Expected to Clear Turkey Missile Deployment,” *Agence France Presse*, December 4, 2012.

²⁶ “Syrian Spokesman Says No Chemical Weapons to be Used During Crisis,” *Syrian TV Satellite Service*, July 23, 2012.

accusations that Syria possesses such weapons.²⁷ Asked during a July 29, 2012, press conference whether Syria possesses chemical weapons, Syrian Foreign Minister al-Mu'allim observed that Israel possesses nuclear weapons, “regardless of whether we have or do not have” chemical weapons.²⁸ He was similarly ambiguous during a television interview broadcast on October 1, 2012.²⁹ Syria’s Information Minister Umran Ahid al-Zabi denied in an April 26, 2013, interview that Syria had used chemical weapons and repeated the regime’s claim that Damascus does not possess such weapons.³⁰ He also stated that Syria does not possess biological weapons.

On December 3, 2012, the Syrian Foreign Ministry stated that “Syria has stressed repeatedly that it will not use these types of weapons, if they were available, under any circumstances against its people.”³¹ Information Minister al-Zabi stated in late April 2013 that Syria would not use chemical weapons against Israel, even in the case of armed conflict between the two countries.³²

Chemical Weapons Security

In the past, the United States has discussed chemical weapons security with Damascus; State Department spokesperson Victoria Nuland told reporters February 10, 2012, that “for many years we’ve had a dialogue with Syria about the importance of security and safety of these weapons.” Officials from the Obama Administration and other governments have expressed concern regarding the security of Syria’s chemical weapons, but U.S. officials have unanimously stated that the weapons stockpiles are secure. For example, White House spokesperson Tommy Vietor stated July 21, 2012, that the Obama Administration is “very concerned” about Syria’s chemical weapons, but also noted that “[w]e believe Syria’s chemical weapons stockpile remains under Syrian government control.”³³ The United States is monitoring Syrian chemical weapons stockpiles, Vietor added. Secretary of Defense Leon Panetta stated during a September 28, 2012, press briefing that Damascus has moved some chemicals in order to secure them better, adding that the country’s “main sites … still remain secure.” Press reports of the movement of chemical weapons again appeared in early December 2012. According to Director of National Intelligence James Clapper’s March 12, 2013, testimony before the Senate Select Committee on Intelligence, “groups or individuals in Syria could gain access to [chemical weapons]-related materials.”

Officials from other governments have expressed concern about Syria’s chemical weapons security while acknowledging that, for the time being, the weapons are secure. Israeli Vice Prime Minister and Strategic Affairs Minister Moshe Ya’alon stated in June 2012 that “[at] this stage, the Syrian regime has firm control over the chemical weapons arsenal.”³⁴ Russian Deputy Foreign Minister Sergey Ryabkov stated in an interview published September 6, 2012, that “[w]e are fully

²⁷ “Information Minister: Foreign Media and Diplomatic Misconstrued Foreign Ministry Statement and Put ...” *SANA News Agency*, July 24, 2012.

²⁸ Syrian TV Satellite Service, July 29, 2012.

²⁹ “Syria: Foreign Minister Al-Mu’allim Says ‘Security Solution Was Imposed on Us’,” *Al-Mayadin Satellite Channel*, October 1, 2012.

³⁰ “Syrian Minister Says Army Did Not Use Chemical Weapons, Warns of Iraqi Scenario,” *Interfax*, April 26, 2013.

³¹ “Obama Warns Syria Amid Rising Concern Over Chemical Weapons,” *The Washington Post*, December 3, 2012.

³² “Syrian Troops Won’t Use Chemicals For Moral Reasons - Information Minister,” *Interfax*, April 24, 2013.

³³ “U.S. Says Closely Monitoring Syria Chemical Weapons,” *Reuters*, July 21, 2012.

³⁴ “Asad Retains Control of Syria Chemical Arms – Israel,” *Reuters*, June 12, 2012.

sure - and we have official confirmation from Damascus on this - that the government of this country is taking all necessary measures to ensure the security of its chemical stockpile.”³⁵

More recently, British Defense Secretary Philip Hammond told reporters on May 2, 2013, that the Syrian government

is largely in control of its chemical weapons, principal chemical weapons sites. That is not the same as saying that we are able to account for every last unit of chemical stocks, but there is no evidence that the regime has lost control of significant chemical weapon sites yet.

“I think we have a great deal of knowledge of location of chemical weapons. That is not the same as saying that I can put my hand on my heart and say we know where every last item is,” Hammond added.

Obama Administration officials have indicated that the United States has been working with other regional governments, including Israel, to ensure the security of Syria’s chemical weapons.³⁶ During a July 29, 2012, press briefing, Panetta identified Jordan, Turkey, and “other allies in the region” as partners in this effort.

Chemical Weapons Use and Potential Responses

Officials have indicated that the likelihood of Syria using chemical weapons may have increased in recent months. White House Secretary Jay Carney stated on December 3, 2012, that the Obama Administration has “increased concern about the possibility of the [Asad] regime taking the desperate act of using its chemical weapons.” Major General Aviv Kochavi, the head of Israeli military intelligence, has stated that Syria is preparing to use its chemical weapons, according to press reports.³⁷ Director of National Intelligence James Clapper told the Senate Armed Services Committee on April 18, 2013, that the “increasingly beleaguered regime, having found that its escalation of violence through conventional means is not working, appears quite willing to use chemical weapons against its own people.”

Allegations that chemical weapons have been used in the conflict again surfaced on March 19, 2013. Both sides of the conflict claim that chemical weapons were used by the other side against civilians in the village of Khan al-Assal (near Aleppo). Some press reports have said they were delivered with rockets and may have carried chlorine.³⁸ The Syrian government officially requested that the United Nations Secretary General investigate its allegations that opposition forces used chemical weapons at Khan al-Assal (Aleppo area) on March 19. The Syrian opposition claims that the Asad regime also used chemical weapons in other recent attacks (including near Damascus). The United Kingdom and France sent letters to the U.N. Secretary General in late March that reportedly provided evidence based on witness interviews and soil samples that chemical weapons were used on multiple occasions, but the letters have not been made public. Press reports said the letters claimed that chemical weapons had been used on three

³⁵ “Russia Sure That Syria Will Not Use Chemical Weapons - Senior Diplomat,” *Interfax*, September 6, 2012.

³⁶ Carol E. Lee and Adam Entous, “Obama Warns Syria on Chemical Weapons—President Threatens Military Response Against Any Use of the Banned Arms,” *The Wall Street Journal*, August 21, 2012.

³⁷ Gili Cohen, “Assad Preparing to Use Chemical Arms, Says Israel’s Military Intel Chief,” *Haaretz*, March 14, 2013.

³⁸ Aryn Baker, “Syria’s Civil War: The Mystery Behind a Deadly Chemical Attack,” *Time.com*, April 1, 2013.

occasions: March 19 in Khal al-Assal and in Ataybah, as well as December 23 in Homs.³⁹ There has been no official confirmation from U.S. government sources about the type of chemical used or who used them, and DNI Clapper told the Senate Armed Services Committee on April 18, 2013, that the U.S. investigation was still in progress.

Officials from France, Israel, the United Kingdom, and the United States have argued that there is evidence that the Syrian government has used sarin nerve agent against Syrian opposition forces. However, all of those governments have cautioned that they lack definitive proof of such use. According to letters sent April 25, 2013, to Senators John McCain and Carl Levin by Miguel Rodriguez, Assistant to the President and Director of the Office of Legislative Affairs, the U.S. intelligence community assesses “with varying degrees of confidence that the Syrian regime has used chemical weapons on a small scale in Syria, specifically the chemical agent sarin.” The Assad regime, rather than opposition forces, would “very likely” have initiated any chemical weapons use, Rodriguez wrote. The United States believes that the regime “maintains custody of these weapons and has demonstrated a willingness to escalate its horrific use of violence against the Syrian people,” he added.

A White House official explained during an April 25, 2013, background briefing that U.S. intelligence on this matter is “based on a mosaic of information,” which needs to be corroborated via further investigation. “[W]e are continuing to do further work to establish a definitive judgment as to whether or not the red line has been crossed and to inform our decision-making about what to do next,” the official added. The April 25 letters explained that physical evidence has contributed to the intelligence assessment described above. But uncertainty concerning the “chain of custody” of this evidence precludes the intelligence community from confirming “how the exposure occurred and under what conditions,” Rodriguez wrote. Secretary of State John Kerry stated May 28, 2013, that the United States has “evidence” of Syrian chemical weapons use, but added that “it’s an intelligence community assessment. Assessments are not evidence that you’re prepared to take to the world.”

For its part, the United Kingdom has “limited but persuasive information from various sources showing chemical weapon use in Syria, including sarin,” a British Foreign Office spokeswoman stated April 25, 2013.⁴⁰ Similarly, a French Ministry of Foreign Affairs spokesperson stated the next day that “there were indications” that the Syrian government has used chemical weapons, but added that the government lacks “irrefutable evidence” of such use. Michael Oren, Israel’s ambassador to the United States, stated during an April 28, 2013, television interview that an Israeli military “assessment looks like there’s a high probability of usage,” but added that the assessment is not “definitive proof.”⁴¹

The United Nations is currently negotiating with the Syrian government over the terms of access for chemical weapons use inspections. The U.N. would like the ability to investigate beyond the Khal al-Assal site, but according to press reports, the Syrian government wants to limit the investigation to the March 19 incident and select the members of the inspection team.⁴² The U.N. Secretary General appointed Ake Sellstrom to lead the inspection team, which will try to

³⁹ Edith Lederer, “Evidence of Chemical Weapons Use Reported,” *Associated Press*, April 18, 2013.

⁴⁰ “UK Has Evidence Of Chemical Weapon Use In Syria: Foreign Office,” *Agence France Presse*, April 25, 2013.

⁴¹ Interview with Michael Oren, *Fox News Sunday*, April 28, 2013.

⁴² “Syria Yet to Accept U.N. Demand for Full Access in Chemical Attack Inquiry,” *Global Security Newswire*, April 5, 2013.

determine whether chemical weapons were used, but not who used them. The U.N. will also cooperate with the Organization for the Prohibition of Chemical Weapons in the investigation. During an April 26, 2013, press briefing, U.N. spokesperson Martin Nesiryk explained that the U.N. investigators need “swift access and unfettered access” to the relevant Syrian sites, noting the “risk that the evidence can deteriorate over time when you are talking about possible chemical weapons.” France, the United Kingdom, and the United States have all expressed support for the investigation.

The allegations of use raise the question of the United States’ “red line.” The White House has suggested that the United States might respond to the Syrian government’s use or loss of control of chemical weapons with military force. Carney told reporters on July 22, 2012, that “the international community will hold accountable any Syrian officials” who fail to keep the country’s chemical weapons under governmental control, but he would not specify possible actions to ensure accountability. President Barack Obama, after noting during an August 20, 2012, press briefing that he had not yet “ordered military engagement” in Syria, suggested that he may do so if Damascus used or lost control of its chemical weapons:

We cannot have a situation where chemical or biological weapons are falling into the hands of the wrong people. We have been very clear to the Asad regime, but also to other players on the ground, that a red line for us is we start seeing a whole bunch of chemical weapons moving around or being utilized. That would change my calculus.

Secretary of Defense Hagel reiterated this policy to the Senate Armed Services Committee on April 18, 2013, that, “President Obama has made clear that if Assad and those under his command use chemical weapons or fail to meet their obligations to secure them, there will be consequences and they will be held accountable.” Secretary Hagel also said there were “plans in place to respond to the full range of chemical weapon scenarios.”

Reiterating previous statements on the matter, President Obama told reporters April 26, 2013, that Syrian use of chemical weapons “crosses a line that will change my calculus and how the United States approaches these issues.” According to the April 25 letters to Congress,

the administration is prepared for all contingencies so that we can respond appropriately to any confirmed use of chemical weapons, consistent with our national interests. The United States and the international community have a number of potential responses available, and no option is off the table.

Asked during the April 25 background briefing cited above about the range of potential U.S. responses to Syrian use of chemical weapons, the White House official stated that such a response “could run a broad spectrum of activity across our various lines of effort in Syria,” citing U.S. diplomatic initiatives, nonlethal assistance to opposition groups in Syria, and humanitarian assistance.

Other governments have also said the use of military force would be justified if chemical weapons were used. For example, French President François Hollande stated in an August 27, 2012, speech that Syrian use of chemical weapons “would be a legitimate reason for direct intervention” by the “international community.”⁴³ Additionally, William Hague, the UK Secretary of State for Foreign and Commonwealth Affairs, told the House of Commons September 3, 2012,

⁴³ “France Warns Syria Over Chemical Weapons Use,” *Reuters*, August 27, 2012.

that Syria's use of chemical weapons "would be an extremely serious matter, and it might change some of the international calculations about this crisis."⁴⁴ Hague did not specify any potential actions, but did say in an opening statement to the House that "we have not ruled out any options as this crisis deepens." President Obama and NATO Secretary General Rasmussen stated in early December 2012 that the Asad regime would be "held accountable" for any use of chemical weapons. Ambassador Oren stated during an April 28, 2013, interview on Fox News that Israel "will react" if "the Syrian regime tries to transfer chemical weapons, or what we call game changing weapons, could be anti-aircraft systems, to terrorists in Lebanon."

Biological Weapons

The question of a Syrian biological weapons program has also been raised in discussions of loss of sensitive military sites. Syria's biological weapons activities appear to be considerably less advanced than the country's chemical weapons program. Past U.S. assessments have stated that Damascus was pursuing biological weapons. According to a 1988 intelligence estimate, Syria was "conducting research and development" on a biological weapons program.⁴⁵ The Defense Department issued a similar assessment in 1997 and added that Damascus had not "begun any major weaponization or testing related to biological warfare."⁴⁶ Several years later, Syria was "not believed to have progressed much beyond the research and development phase and may have produced only pilot quantities of usable agent," according to an October 2001 Defense Department report.⁴⁷

Some U.S. assessments issued during the past decade have indicated that Damascus has continued to pursue biological weapons. For example, a report from the Director of Central Intelligence to Congress covering the second half of 2002 states that "[i]t is highly probable that Syria also continued to develop an offensive [biological weapons] capability."⁴⁸ More recently, Principal Deputy Assistant Secretary of State Vann Van Diepen stated in April 2012 that Syria "has been researching biological weapons."⁴⁹ Nevertheless, it appears that Syria is still not capable of producing biological weapons. An ODNI report to Congress covering 2009 states that Damascus is "not believed to have achieved a capability to put [biological weapons] agents into effective weapons."⁵⁰ The ODNI report covering 2011 states only that "Syria's biotechnological infrastructure is capable of supporting BW agent development."⁵¹

According to the 2012 State Department report regarding compliance with arms control and disarmament agreements, "the United States is concerned that Syria ... may be engaged in activities that would violate its obligations under the BWC," if Damascus were a party to the

⁴⁴ Commons Debates, Daily Hansard, September 3, 2012.

⁴⁵ Chemical and Biological Weapons: The Poor Man's Atomic Bomb, 1988.

⁴⁶ Proliferation: Threat and Response, 1997.

⁴⁷ Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense, *Chemical and Biological Defense Primer*, October 2001.

⁴⁸ *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 July Through 31 December 2002*.

⁴⁹ Vann Van Diepen, "Key Note Address, U.S. Gulf Cooperation Council Workshop," April 12, 2012.

⁵⁰ *Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 January to 31 December 2009*.

⁵¹ Unclassified Report to Congress Covering 2011.

agreement. “It remained unclear during the reporting period whether Syria would consider the use of biological weapons as a military option,” the report adds.⁵²

According to April 18, 2013, testimony from Director of National Intelligence Clapper before the Senate Armed Services Committee, Syria’s biological weapons program may be somewhat more advanced than suggested by the assessments described above. Clapper stated that

[b]ased on the duration of Syria’s longstanding biological warfare (BW) program, we judge that some elements of the program may have advanced beyond the research and development stage and may be capable of limited agent production. Syria is not known to have successfully weaponized biological agents in an effective delivery system, but it possesses conventional and chemical weapon systems that could be modified for biological agent delivery.⁵³

Cooperative Threat Reduction Programs

U.S. government programs could be used to address or fund efforts to secure or dismantle Syrian weapons of mass destruction or advanced conventional weapons following a regime collapse scenario. There are two most likely sources of such funding. The State Department’s Nonproliferation and Disarmament Fund (NDF) has authority to spend funds “notwithstanding any other provision of law” and is authorized to work in states outside the former Soviet Union. The Department of Defense’s Cooperative Threat Reduction (CTR) has authorization to use funds in the Middle East region as a whole.

Secretary of Defense Hagel told the Senate Armed Services Committee on April 18, 2013, that CTR funds are being used to assist Syria’s neighbors to bolster border defenses and prevent WMD proliferation from Syria:

Through our cooperative threat reduction program, the Department of Defense personnel and our interagency partners are also working closely with Syria’s neighbors, including Jordan, Turkey and Iraq to help them counter the threat from Syria’s chemical weapons.

As part of this effort, the Department of Defense is funding over \$70 million for activities in Jordan including providing training and equipment to detect and stop any chemical weapons transfers along its border with Syria and developing Jordanian capacity to identify and secure chemical weapons assets.

The program will continue to train and equip border security staff in Jordan, Iraq, and Turkey in FY2014 to prevent proliferation of WMD across borders shared with Syria. Prior to this, CTR programs were used most recently in the Middle East in Libya and Iraq. The estimated scope of the chemical (and potential biological) weapons stocks and facilities in Syria is far greater than those in those countries. In Libya, the dismantlement process was initially undertaken with the agreement of the government. In 2011, when unrest toppled the Qaddafi regime, the chemical stocks were secured by forces aligned with the United States. However, additional stocks were hidden by the Qaddafi regime and only identified after the conflict, showing the limits of U.S.

⁵² Available at <http://www.state.gov/t/avc/rls/rpt/197085.htm#syria>.

⁵³ James R. Clapper, Director of National Intelligence, *Statement for the Record, Worldwide Threat Assessment of the U.S. Intelligence Community*, Senate Committee on Armed Services, April 18, 2013.

and other intelligence.⁵⁴ In the case of Iraq, the United States undertook similar work in 2003 after Operation Iraqi Freedom. However, United Nations inspectors had completed much of the dismantlement work after the 1991 Persian Gulf War, and stockpiles and capacity turned out to have been overestimated in 2003. A continued focus of nonproliferation programs in both Iraq and Libya has been engaging former WMD weapons scientists in civilian projects to prevent the exploitation of their expertise for weapons proliferation purposes. International partners under the G-8 Global Partnership have experience cooperating in dismantling former Soviet chemical weapons stockpiles. In general, CTR and NDF programs are not designed to work in a non-cooperative environment and require the agreement of the host country. Therefore, the focus to date for the Syria challenge has been to bolster capacity of neighboring states to interdict any transfers.

Civil war and possible loss of control or regime collapse by a state in possession of weapons of mass destruction poses a distinct change from the way these nonproliferation programs have been implemented in the past. The Syrian case may be the first time the international community faces the possibility of a civil war in a state with a known stockpile of chemical weapons. Due to the urgency of preventing access to these weapons by unauthorized groups including terrorists, the United States government has been preparing to secure the weapons in the event of the Asad regime's loss of control.

However, a successor regime may not agree to renounce and eventually dismantle Syrian chemical weapons. A new government in Syria may believe that chemical weapons continue to serve as a military deterrent to Israel or others. Some experts and policy makers have suggested that the United States and other countries make joining the Chemical Weapons Convention (and therefore chemical weapons dismantlement) a condition for recognition and support of a new government in Syria.⁵⁵ The Organization for the Prohibition of Chemical Weapons may play a key role in dismantling the chemical weapons in Syria, if permitted by a new Syrian government.

If the stocks remain secure after a transition to a new government in Syria, or if the present government agrees to rid itself of these weapons as part of a negotiated agreement, then cooperative threat reduction programs could have a prominent role to play. In other scenarios, it may take a combination of military and intelligence operations in a hostile environment, followed by more traditional NDF or CTR activities undertaken with the agreement of a new government.

Legislation

Syria's chemical weapons stocks have been addressed in recent legislation.

- The Free Syria Act of 2013 (H.R. 1327) section 204 has a provision giving the President the authority to establish a program to facilitate Syrian chemical and biological weapons destruction in cooperation with a "Syrian entity" to "secure,

⁵⁴ See "Chemical Weapons Destruction and Nuclear Material" in CRS Report RL33142, *Libya: Transition and U.S. Policy*, by Christopher M. Blanchard.

⁵⁵ Chairman Ed Royce, Subcommittee on Terrorism, Nonproliferation, and Trade, Opening Statement for the hearing, *When Regimes Fall: The Challenge of Securing Lethal Weapons*, July 18, 2012; Leonard S. Spector, "Minimizing Dangers Posed by Syria's Military Assets During and After the Current Civil Turmoil," Testimony before the Subcommittee on Terrorism, Nonproliferation and Trade, Committee on Foreign Affairs, U.S. House of Representatives, July 19, 2012.

safeguard, disable, dismantle, transport out of Syria, or destroy chemical and biological weapons, their precursor and constituent parts and associated equipment.” It includes congressional reporting requirements and funding authorities.

- The Syria Democratic Transition Act of 2013 (S. 617), section 10 proposes that the United States work with regional partners to develop a plan to secure conventional and unconventional weapons stockpiles in Syria; recover and dispose of all unconventional weapons stockpiled in Syria “with particular attention to chemical weapons” and prevent the illicit transfer of these weapons. It gives the President notwithstanding authority to conduct these activities. It also includes the sense of Congress that the State Department’s FY2014 budget request should include an increase in NADR funding for these goals.
- The House FY2013 Foreign Operations Appropriations Bill (H.R. 5857) said NADR funds “may also be used for such countries other than the Independent States of the former Soviet Union and international organizations when it is in the national security interest of the United States to do so.” This could include Syria.
- The Syria Freedom Support Act (H.R. 2106) as passed by the House Foreign Affairs Committee in March 2012 included a provision that would authorize the President to assist a future democratic Syrian government with securing and dismantling its inherited weapons of mass destruction and related facilities. Section 106 of the bill provides \$250 million in drawdown authority and transfer authority from any other appropriated funds “notwithstanding any other provision of law.”
- Senate FY2012 Foreign Operations Appropriations Committee report (S.Rept. 112-85) said in regard to the Nonproliferation, Demining, and Anti-terrorism funding, “The Committee recognizes that dynamic change in the Near East and ongoing threats and humanitarian needs in other regions afford opportunities to conduct and expand nonproliferation, demining, and anti-terrorism programs, including in Syria should the current regime fall. The Committee recommends additional funding above the budget request to accelerate the U.S. response to such opportunities, which is in the security interests of the United States and regional allies.”

The use, change of hands, or loss of control of chemical weapons stocks in Syria could have unpredictable consequences for the Syrian population as well as for U.S. allies and forces in the region. Congress may wish to assess the Administration’s plans to respond to possible scenarios involving the use, change of hands, or loss of control of Syrian chemical weapons. Forces, funding, and authorization by Congress may be required to address potential contingencies.

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