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Tekla Gagoshidze and Philipp Bleek* from Middlebury Institute of International Studies on Syrian chemical weapons elimination redux

A second bite at the poisonous apple?

The fall of Bashar al-Assad's murderous regime in Syria has drawn renewed attention to the country's remaining chemical weapons capabilities, raising fears about proliferation and hopes that they might finally be fully eliminated. As the transitional government in Damascus attempts to assert control and international inspectors cautiously re-enter the country, the story of Syria's chemical weapons is at a potential inflection point.

For years, Assad's government played a double game, formally acceding to the Chemical Weapons Convention (CWC), while covertly retaining some capabilities and sporadically continuing to use them. Now, we are at a fork in the road, with three potential futures. Optimistically, the new government might cooperate with the international community to eliminate the threat more conclusively, building on preliminary steps already undertaken. Somewhat disconcertingly, the threat might linger, fester, and only gradually degrade as chemicals and associated infrastructure decay. Or distressingly, the new government or other actors might seize control of, and perhaps seek to bolster, the capabilities present in Syria today. Which of these possibilities emerges in the coming months and years depends on some combination of luck and effort.

Past disarmament efforts

The international community came remarkably close to eliminating one of the world's few remaining chemical weapons arsenals 12 years ago. After the Assad regime's particularly egregious 21 August 2013 sarin attack in Ghouta, a Damascus suburb, its Russian patrons pressured the Syrian regime to join the CWC and dismantle its programme. This was largely motivated by Moscow's fear that US military responses risked pulling Washington more deeply into the conflict.[1] A robust international disarmament effort followed, which eliminated the vast majority of Syria's assessed capabilities.[2] Even more telling than a tally of the chemicals, munitions and infrastructure eliminated, is the fact that Israel soon halted its longstanding policy of distributing gas masks to its citizens.

Syria's chemical disarmament proved incomplete, however. The Assad regime failed to fully account for its past activities, retained undeclared capabilities, and resumed chemical weapons attacks with crude chlorine and more lethal sarin. That first disarmament effort, while consequential, was never comprehensive, and benefited the Assad regime in various ways. Retained chemical weapons capabilities, even limited ones, enabled the regime to pose some continued threat to both domestic, and regional adversaries, while the regime gained international legitimacy and sanctions relief having mostly cooperated on the disarmament deal.[3]

Now, in the aftermath of Assad's furtive escape to Moscow in December 2024, the international community has a second, more tenuous chance to finish the job. Success today would do more than neutralise a lingering threat. It would finally complete a disarmament initiative that spanned three US presidencies, help rebuild the credibility of nonproliferation norms widely viewed as eroded, and make clear that chemical weapons use will neither be tolerated nor forgotten.

HTS are leading the search for Assad's CWA... but can they be trusted? ©VoA

A fragile environment

In mid-March 2025, inspectors from the Organisation for the Prohibition of Chemical Weapons (OPCW), the agency

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implementing the 1997 CWC, stepped through the rubble of a bombed-out Syrian chemical weapons site. It was one of five they visited that week out of more than 100 suspected locations.[4] The OPCW's estimates map a vast, fragmented landscape of remaining stockpiles, labs and storage sites, with some possibly hidden in caves and other hard-to-detect locations. Further obfuscating the picture, Israeli strikes targeted a number of these facilities in recent months, as part of broader efforts to degrade Syrian military infrastructure. Their effectiveness is hard to assess based on publicly available information, but has likely degraded capabilities in a limited way.

The transitional Syrian government, a tenuous coalition led by Hayat Tahrir Al-Sham (HTS), has declared a willingness to cooperate. With particular encouragement from the German government, which has stepped up to lead on this issue, the OPCW director-general was invited to Damascus, and inspectors were granted safe access to a handful of sites.[5] But even as there are grounds for guarded optimism, Syria's record under the previous regime remains a vivid cautionary tale.

Terrorists turned responsible?

The volatility of the political situation in Syria leaves the future of remaining chemical weapon capabilities there uncertain. While the commitments made by HTS appear promising, both recent history and current issues provide reasons for concern. The Islamist group was formed in 2017 by merging rebel factions, including al-Qaeda's former Syrian affiliate, Jabhat al-Nusra. Though HTS leaders have broken ties with al-Qaeda, it is still designated as a terrorist organisation by the US and UN, presenting challenges over international support and legitimacy.

While HTS assumed power with promises of peace and inclusivity, recent sectarian violence in the country has heightened fears. In western Syria, more than 1,000 Alawite civilians were massacred by HTS-linked hardliners in March, while a similar attack targeted the Druse minority in April, leaving 12 people dead.[6] Both attacks were reportedly carried out without central authorisation, highlighting dangerous rifts. If chemical weapons fall into the hands of such rogue elements, the consequences could be devastating.

HTS's military position is also tenuous. Conventional military capabilities inherited by the new government are degraded, not least because of Israeli strikes; and the government is seeking new external patrons, including Russia and Turkey.[7] Under such pressure HTS could be tempted to follow Assad's apparent playbook. That would involve partial cooperation, dragging out the process, hiding what can be hidden and retain capabilities, while giving the international community an incentive to support HTS in power, with additional leverage to extract further concessions. Or worse, HTS might be tempted to try to compensate for its military shortcomings by pursuing chemical weapons more robustly. In such cases chemical weapons could once again become a tool to bolster regime security against domestic and/or external threats.[8]

A lingering threat

Though diminished, the threat of ISIS lingers in Syria, sustained by its ability to exploit security gaps, ideological appeal, and the country's ongoing instability. ISIS has proven chemical capabilities, having deployed sulphur mustard, chlorine and other unspecified chemicals, in Iraq and Syria between 2014 and 2017.[9] Those attacks, while relatively limited in scale, demonstrated its intent and ability to produce rudimentary chemical weapons from commercially available precursors. While far from its height of power, the number of active ISIS fighters is estimated at around 2,500, with another 9,000 in prisons, susceptible to plots to facilitate escapes.[10] Though its capabilities have been eroded by counterterrorism activities, ISIS has shifted tactics to insurgent operations, and increased its vigour since Syria's change of government.

Although both originate from al-Qaeda, the relationship between HTS and ISIS has evolved into deep ideological divisions and violent rivalry, with a number of past clashes. Indicative of renewed momentum after the HTS takeover, in May 2025 ISIS claimed responsibility for two attacks with military casualties in the al-Safa region of Suwayda governorate, its first successful operation targeting the Syrian government since Assad's fall.[11] The new Syrian government, however, has assumed counterterrorism measures with the support of US forces and has been successful in targeting ISIS leadership and thwarting attacks in Damascus.[12] With the US's recent plans to reduce its eight military bases in Syria to one,[13] more of the responsibility to combat ISIS' reemergence falls on HTS, presenting the new government with yet another challenge.

Exploiting fragmented governance, ISIS might attempt to scavenge materials from unsecured chemical sites. The group's familiarity with basic chemical synthesis and delivery mechanisms gives it a lower technical threshold to surmount than many non-state actors. If it gains access to even small quantities of chemical agents, ISIS could carry out headline-grabbing attacks inside Syria. Just a single incident, carefully staged and publicised, could restore ISIS to domestic and global consciousness and aid recruitment.

Human vulnerabilities

Besides the relevant facilities and chemical stocks, the scientific and technical expertise underpinning Syria's chemical weapons programme remains a concern. This programme, built and maintained over decades, relied heavily on a cadre of skilled scientists, engineers and technicians. These people have specialist knowledge on topics like chemical agent synthesis, storage protocols for highly toxic substances and delivery mechanisms. To the extent that Syria's programme remained viable after the disarmament that started in 2013 some of these individuals played key roles. Based on the attacks Syria conducted, the programme remained viable to a

degree, though specifics are hard to glean from public information.

Now, with Assad gone and the programmes they worked on dormant, scientists who have not been killed, jailed, or fled may find themselves in a vacuum - unemployed, possibly disillusioned and vulnerable to recruitment. There are multiple risks. Their expertise could be acquired by non-state actors like ISIS, Hezbollah, or Hurras al-Din, who may lack the technical skill to develop weapons independently but could benefit from experienced guidance. Foreign states with WMD ambitions or programmes, such as Iran or North Korea, could seek to attract these people to bolster their own chemical or biological programmes. Should the new Syrian government seek to reconstitute the chemical weapons programme, they could be significant assets.

At the same time, the dangers are best not exaggerated. Many of these individuals likely lack the motivation to engage in such a brain drain. Those who are motivated would have to overcome significant barriers and risks to sell their expertise. Still, comprehensive disarmament would address this threat, too. Some scientists might safely be reintegrated into peaceful employment through job placement or retraining programmes. Others might need to be monitored or subject to restrictions. International cooperation in tracking movement, especially through border controls and intelligence-sharing, could help. In the coming months, dismantling remaining stockpiles could go hand in hand with dismantling the networks of people who know how to build, sustain and deploy them.

A comprehensive disarmament effort might also entail accountability for some of those complicit in the Assad regime's chemical atrocities.[14] For the foreseeable future Assad himself is, presumably, untouchable in Moscow, but the same may not be true for government and military officials who played key roles in his regime's chemical weapons atrocities.

Seizing the opportunity

There is a strong case for the international community to move quickly and decisively, as Syria's remaining chemical weapons capabilities pose a threat within the country and to regional and global security. This fragile and fleeting moment appears to offer a rare convergence of opportunity and political will.

The US made chemical disarmament a condition for easing sanctions on Syria, providing the transitional government with a powerful incentive to cooperate.[15] With President Trump's decision to lift those sanctions in May, this incentive and its corresponding urgency has gone, adding to the importance of a strengthened international push.[16] International actors such as the OPCW, supported by key stakeholders such as the US, Germany, and key regional powers, could provide continuous oversight, technical support, carefully conditioned diplomatic engagement, and other needed resources. With the US backing the new regime, and economic aid starting to flow from Gulf countries,[17] HTS is heading towards international integration, and full adherence to the CWC is a plausible part of that package.

On the one hand, bandwidth and resources are inherently limited and at least somewhat fungible, so using them on chemical weapons involves trade-offs against other priorities. On the other hand, cooperating to close the chemical weapons file could also complement other activities, like supporting post-conflict reconstruction, because engagement here could bolster relationships that would pay dividends in different areas.

With a combination of effort and luck, the international community has a chance to finally close one of the darkest chapters of Syria's civil war and reaffirm its collective commitment to norms against chemical weapons.

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