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# FACT SHEET

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# IRAQ: THE UNSCOM EXPERIENCE

## • Introduction

Rolf Ekéus, the first Executive Chairman of the United Nations Special Commission (UNSCOM) for overseeing the elimination of weapons of mass destruction and ballistic missiles in Iraq, concluded his analysis (published in the *SIPRI Yearbook 1992)* with the following:'The unique experience of the implementation of Resolutions 687, 707 and 715 ought to foster broader understanding of the complexities, difficulties and opportunities linked to creating methods, procedures, techniques and institutions for future arrangements for the non-proliferation of weapons of mass destruction and their means of delivery'.

The aim of this fact sheet is to offer a response to the questions whether and to what extent, seven years later, the UN decisions have been implemented and whether they have brought us closer to the aims defined when UNSCOM was set up in 1991.

The ongoing crisis over Iraq's refusal to comply with UN Security Council resolutions concerning the destruction of its capabilities in weapons of mass destruction (nuclear, biological and chemical or NBC weapons) and ballistic missiles has raised the possibility of renewed military action in the Persian Gulf. This fact sheet examines the background to this situation and explains why the refusal of Iraqi President Saddam Hussein to comply poses dangers to the international community. Iraq's actions leading up to the creation of UNSCOM are explored, as are its NBC programmes.

Although all Iraq's weapon programmes are of concern to the international community, and the dismantling of its nuclear and missile programmes is an important component of UNSCOM's work, this fact sheet focuses on the chemical and biological weapon (CBW) programmes. This is for two reasons: they are the primary cause of the current dispute between Iraq and UNSCOM; and responsibility for dismantling Iraq's nuclear programme was given not to UNSCOM but to the International Atomic Energy Agency (IAEA) in cooperation with UNSCOM.

The current crisis is the latest in a long series. Cumulatively, these crises suggest that Saddam Hussein has followed a long-term strategy of trying to conceal at least some elements of his capabilities in weapons of mass destruction since he signed agreements to dismantle these programmes. As each crisis has unfolded Iraq has backed down when it became clear that the international community was prepared to use force. However, the overall pattern has been that each crisis has worn down the world's readiness to impose its will on Iraq. Saddam has also won important concessions from UNSCOM in terms of its operating procedures.

Whatever happens in the next few months, the UNSCOM experience is an important one for arms control. UNSCOM is the most intrusive verification regime ever devised: it combines many of the verification elements of existing arms control regimes with aspects of verification in an adversarial situation. Most arms control verification regimes begin with a basic assumption of compliance: UNSCOM has broken new ground. Its history is therefore worth detailed review as the international community moves into a phase of arms control in which more rigorous regimes may be required. For the Middle East, UNSCOM holds important lessons. Not the least of these may be what it demonstrates about the requirements for a disarmament regime for the region.

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## • Contents

## • Background

Iraq lies in a physically harsh environment and is a sometimes difficult amalgamation of different ethnic groups including Kurds (in the north), Sunni Muslims (in the middle) and Shi'a Muslims (in the south). It has a troubled history of relations with its neighbours, which include Iran, Jordan, Kuwait, Saudi Arabia, Syria and Turkey. However, Iraq does have considerable wealth in the form of oil reserves. Its violent history is testimony to the fact that it is a difficult country to rule. In 1968 the Ba'ath Party seized control of Iraq. One of its more powerful figures was Saddam Hussein, who controlled the party's internal security apparatus and was effectively the number two man in the country. Long before he formally assumed the presidency of Iraq in July 1979, Saddam was the power behind the scenes.

The Iraq–Iran War began on 22 September 1980 when Iraq invaded Iran. Saddam hoped to take advantage of the internal disarray caused by Iran's revolution to reverse various aspects of the relationship between the two countries, including a border deal which Saddam had signed with the Shah. The fighting began well for Iraq but turned into a war of attrition which pitted Iran's superior manpower against Iraq's technological superiority. Iraq received support from the other Arab states of the Persian Gulf and much of the international community, both of which were fearful of the Iranian revolution.

One of the most important aspects of the war was the use of chemical weapons (CW), initiated by Iraq in 1982 in blatant violation of its commitments as a signatory to the 1925 Geneva Protocol, a treaty banning the use of CW against another contracting party. The lack of formal international condemnation emboldened the Iraqi leadership to expand the use of CW. Whereas early use of CW served defensive purposes, they had been fully integrated into offensive operations in the final campaigns of 1988.

Although both sides reportedly used CW during the war, it is widely acknowledged that Iraq began the practice and made far greater use of CW than Iran (also a signatory of the Geneva Protocol). Saddam also demonstrated that he was prepared to use CW against his own people. In 1987 reports of CW attacks on Kurdish villages and guerrilla fighters became more frequent and detailed. Clinical evidence and analyses of soil samples confirmed the use of mustard gas and the nerve agent tabun against the Kurdish population. In March 1988, Iraq launched a major attack with CW against the Kurdish town of Halabja and its surroundings, which had just been occupied by Iranian forces. Although the exact number of casualties is not certain, it is generally believed that several thousand Kurdish civilians and Iranian soldiers in the area were killed and several thousands more injured. In the summer of 1988 CW agents were used against the Kurds on a massive scale, forcing tens of thousands to flee to Iran and Turkey. The UN Security Council still refused to name Iraq explicitly as the main perpetrator of CW attacks.[1]

When the war ended in a cease-fire on 8 August 1988, Saddam had achieved little. Iraq was heavily in debt to the Arab states of the Persian Gulf, which insisted on repayment. Moreover, they backed Kuwait in its disputes over Iraq's claims that Kuwait was illegally pumping Iraqi oil from oil fields along the Iraq–Kuwait border, leading to serious losses of revenue for Iraq. Accusing Kuwait of 'stealing' oil, Saddam demanded restitution, relief from war loans and a renegotiation of the border. Kuwait refused and Iraq invaded on 2 August 1990. A broad international coalition, mandated by the UN and led by the USA, was formed to eject Iraq's forces from Kuwait. This was achieved in February 1991.

Iraq's capabilities in non-conventional (nuclear, biological and chemical—NBC) weapons were now of particular interest to the international community. There had been a fear that Saddam might use what were then suspected to be extensive CBW stockpiles against the coalition troops. While this did not happen, Iraq did use its long-range missile capability against the coalition forces and against Israel in an unsuccessful attempt to broaden the war and break the alliance between the Arab world and the West. These factors, combined with shocking revelations after the war about the extent of Iraq's nuclear weapon programme (despite Iraq's having signed the 1968 Non-Proliferation Treaty), elicited a tough response from the international community. The major component of this response was UN Security Council Resolution 687 of 3 April 1991.

## • The UNSCOM regime

UN Security Council Resolution 687 was, in effect, a conditional cease-fire, outlining an extensive plan for the disarmament of Iraq. Part C of the resolution, which covered non-conventional weapons, required Iraq unconditionally to destroy and to undertake never to use, develop, construct or acquire non-conventional weapons or ballistic missiles with a range greater than 150 km. The resolution also dealt with the return of stolen property, accounting for Kuwaiti troops and civilians missing in action, a border settlement, reparations, terrorist acts and sanctions against Iraq for non-compliance.

On 19 April 1991, the Security Council set up UNSCOM, charged with verifying Iraq's compliance with Resolution 687 in respect of its non-conventional weapon programmes. UNSCOM has two basic functions: to inspect and oversee the destruction or elimination of Iraq's CBW and ballistic missile capabilities and their production and storage facilities; and to monitor Iraq over the longer term to ensure continued compliance. The task of inspecting, destroying and removing all Iraq's nuclear weapon capabilities was assigned to the IAEA. However, included in UNSCOM's mandate was the obligation to assist and cooperate with the IAEA in its work in Iraq. Such assistance comprised transport and communication services and logistic support.

In practice, the basic aim of UNSCOM's second priority, its monitoring work, is to ensure that Iraq does not seek to rebuild these capabilities once

[1] UN document S/RES/620, 26 Aug. 1988.

UNSCOM has certified that they have been destroyed. Particular attention is paid to all dual-use items to ensure that such materials and facilities are not put to use in prohibited military activities. Dual-use items are defined as those which could be applied both to the development of non-conventional weapons and to legitimate civilian purposes such as medicines. UNSCOM's strategy for ongoing monitoring includes, but is not limited to, unannounced on-site inspections, aerial surveillance and camera monitoring.

A system for monitoring exports and imports was established by UN Security Council Resolution 1051 of 27 March 1996. It requires all sales of dual-use items to Iraq to be notified to both UNSCOM and the IAEA. These items must also be inspected upon arrival in Iraq and at the destination site.

## • Main findings of UNSCOM

Seven years after it was set up, UNSCOM is still unable to certify that it knows the full extent of Iraq's CBW programmes and is unable to determine that all agents, munitions and facilities have been declared and therefore destroyed. Moreover, inspectors have collected hard evidence as well as circumstantial information suggesting that the programmes were either much more advanced or far wider in scope than previously thought.

It is now known that Iraq was developing elements of the entire range of non-conventional weapons and their means of delivery, including ballistic missiles, prior to the Iraq–Iran War, beginning with CW.

### Chemical weapons

It had been known since the Iraq–Iran War that Iraq was producing large quantities of CW but the scope of its programmes only became clear with the UNSCOM inspections. The CW programme was begun in the 1970s and accelerated during the war. Iraq chose to develop both the World War I generation of CW agents, including phosgene and mustard agent, and the more sophisticated nerve agents tabun and sarin. The use of several of these agents was confirmed in the Iraq–Iran War. Iraq also developed and began producing the much more potent VX, the most toxic of nerve agents in military arsenals.

Iraqi CW agents were not comparable in quality to those stored in the arsenals of the USA and the former USSR, however. Impurities meant that the toxic compounds lacked stability and easily decomposed; as a consequence, Iraq developed a crude type of binary munition, whereby the final mixing of the two precursors to the agent was done inside the munition just before delivery. This had a major impact on the logistics of and preparations for chemical warfare, which may partly explain how overwhelming coalition air superiority prevented the use of CW during Operation Desert Storm.

Under UNSCOM supervision 38 537 filled and unfilled munitions, 690 tonnes of agents, 3 000 tonnes of precursor chemicals to manufacture CW agents, and thousands of pieces of production equipment and analytical instruments were destroyed.

Despite these achievements, no complete accounting of the CW programme has been possible, for three reasons:

1. Iraq removed CW, equipment and materials from the main site of the al-Muthanna State Establishment before the first UNSCOM inspection team arrived, and no full accounting of these materials has been forthcoming.
2. Iraq claims that it has destroyed 15 620 chemical munitions unilaterally, a fact and total that are so far unverified. Similarly, it provided no supporting documentation for 16 038 chemical munitions it claims to have discarded.
3. UNSCOM inspectors were reportedly closing in on a programme for the production of VX, when the stand-off between Iraq and the UN Security Council began in the autumn of 1997. In November 1997, UNSCOM found new evidence that Iraq had developed a production capability for VX: Iraq had obtained at least 750 tonnes of VX precursor chemicals. (Evidence of VX production was first revealed in 1995.)

### Biological weapons

Iraq may have produced up to 10 billion doses of anthrax, botulinum toxin and aflatoxin. Anthrax, a highly infectious bacterium, and botulinum toxin, one of the most toxic substances known to man, are among the most likely candidates for biological weapon (BW) agents. Little is known about the development of the BW programme up to 1991.

In the 1980s, intelligence sources were cited as reporting that anthrax had been found in hospitalized Iranians and Iranian sources referred to Iraqi use of microbic and bacteriological weapons. According to a Belgian forensic toxicologist, mycotoxins were said to have been found in samples of body fluids taken from Iranian gas victims, but this was never verified.[2]

Research and development (R&D) facilities, such as those at Salman Pak and al-Muthanna, were known to intelligence services, but the largest R&D and production site at al-Hakam remained secret and was not bombed during the Gulf War. Although UNSCOM inspectors had visited the site, its significance was not revealed until General Hussein al-Kamal, Saddam's brother-in-law, defected in 1995 and provided major new insights into the extent of Iraq's BW programme. The latest UNSCOM report on the Iraqi BW programme emphasized once again the general lack of information concerning the development of the programme, both before 1991 and at present.[3]

The discovery that Iraq was researching aflatoxin, not a traditional BW candidate, was a cause for some surprise. It is a carcinogen, the effects of which manifest themselves only after many years, and several Western experts have rationalized this Iraqi programme only in terms of genocidal goals. If aflatoxin were used against the Kurds, for instance, it would be impossible definitively to prove the use of BW once the symptoms emerged. Another possible explanation

[2] 'Chemical warfare in the Iraq–Iran War', SIPRI Fact Sheet, May 1984.

[3] 'UNSCOM: Report on the Iraq BW programme', *Disarmament Diplomacy*, no. 25 (Apr. 1998).

is its potential use as an immune suppressant, making victims more susceptible to other agents. However, the aflatoxin declaration may also hide other aspects of Iraq's BW programme: according to Iraq's depositions, the production programme never encountered any mishap (as other parts of the BW programme had) and, to judge from the declared time-frame for the total amount produced, production could never have stopped, even for cleaning of the equipment. This raises the suspicion that Iraq declared an excessive amount of aflatoxin in order to disguise the fact that other, more destructive agents had been produced in greater quantities.

The Iraqi research programme focused on other agents as well—camel pox, gas gangrene and bubonic plague—and included animal and, on the basis of circumstantial evidence collected by UNSCOM, possibly even human testing. This is still a significant issue which requires clarification. It is not difficult to imagine that Iraq has hidden quantities of freeze-dried organisms from its BW programme or that it would be able to resurrect its research and production programme quickly.

A variety of BW delivery systems were developed, including 155-mm artillery shells, 122-mm rockets, 166 aircraft bombs, 25 warheads for the al-Hussein ballistic missile intended for use with the three main BW agents (noted above) discovered by UNSCOM, and an experimental spray tank converted from drop tanks, which could have held 2000 litres of anthrax. The delivery systems may still have been primitive and therefore ineffective, but it is only UNSCOM and, before its establishment, the Persian Gulf War that halted further development of Iraq's delivery systems.

### Export controls

Iraq had an advanced technological and industrial base for a developing country but was forced to rely heavily on imports to build production facilities and obtain materials for its CW and BW. Western companies were deeply involved in the design and construction of plants and in the sale of relevant equipment and precursor chemicals. Some companies continued to deal with Iraq after certain supplier countries began establishing export controls in 1984 following the first reports of Iraqi use of CW, and were subsequently convicted in court. Countries from the former Warsaw Treaty Organization were involved in the training of troops in an NBC environment and supplied medical and other protective equipment. Iraq's ability to acquire these goods was certainly facilitated by widespread prejudice against Iran, which was considered the greater threat by many countries.

## • The present crisis

### Disclosure and access

Since October 1997, fresh conflict has been building up between UNSCOM and the Iraqi Government and may now be escalating towards a new round of military violence.

Under Resolution 687, Iraq is required to provide UNSCOM with a full, final and complete disclosure (FFCD) of all aspects of its programmes to develop non-conventional weapons, to include such factors as locations, facilities, components and any other information necessary to account for these programmes. UNSCOM was to be allowed '*unconditional and unrestricted access to all areas, facilities, equipment and records*', that is, not only to the facilities and locations declared by the Iraqi Government, but also to facilities and locations designated by UNSCOM itself. Economic sanctions were also intended to force Iraq to comply with the terms of the cease-fire, of which the UNSCOM mandate is a part.

With some obstruction and difficulties at particular sites, UNSCOM succeeded in gaining access to the sites it wished to inspect. In the autumn of 1997, however, in contravention of the UN resolutions and as a challenge to UNSCOM's mandate, Iraqi officials began to insist that some areas of Iraq should be off-limits to the UNSCOM inspectors. In October, after denying the inspectors access to suspected sites for several months and generally refusing to cooperate with the UNSCOM operations, Baghdad expelled all seven US members of an UNSCOM inspection team and branded them as spies working under false pretexts.

After Russian assurances and diplomatic intervention and a reconfiguration of the UNSCOM inspection team, Iraq agreed to the continuation of UNSCOM's work. This was not to last. In December 1997 a new crisis developed when inspectors were denied access to eight of Saddam's presidential sites on the basis that these were 'sovereign territory' and thus beyond the prerogative of the UN. The presidential sites were suspected of hiding evidence of the non-conventional weapon programmes.

In a final effort to avoid another military confrontation, UN Secretary-General Kofi Annan received a mandate from the UN Security Council to seek a diplomatic settlement on the issue of inspection of the presidential sites. A Memorandum of Understanding (MOU) between the UN and the Republic of Iraq, signed in Baghdad on 23 February 1998, reaffirmed the commitments made by the Iraqi Government to cooperate fully with UNSCOM and the IAEA and to accord their inspection teams *'immediate, unconditional and unrestricted access'*. UNSCOM is nevertheless required under the MOU *'to respect the legitimate concerns of Iraq relating to national security, sovereignty and dignity'* in the performance of its mandated tasks.

Eight presidential sites are explicitly placed under a specific regime agreed upon in the MOU—the Republican Palace site, the Radwaniyah and Sijood presidential sites (all in Baghdad), and the Tikrit, Thartar, Jabal Mahhul, Mosul and Basrah presidential sites. (The perimeters of these sites were surveyed and recorded immediately before Annan's visit to Iraq.) Under the special procedures for the eight sites, a Special Group consisting of experts from UNSCOM and the IAEA and senior diplomats appointed by the UN Secretary-General was set up. It was to operate under established UNSCOM and IAEA procedures but additional procedures as outlined under the MOU

were to be observed. The UN Secretary-General would also be charged with submitting the inspections report received from the Executive Chairman of UNSCOM to the Security Council.

The MOU averted the use of military force, the risks here being especially serious because precise information concerning the storage location of residual stores of CBW, precursors and related equipment was lacking. The highest Iraqi authorities confirmed and re-established the principle of unrestricted access and the presidential sites can be thoroughly investigated. However, since the crisis began in October 1997, Iraq would have had ample time to remove any suspected stores of CBW, precursors and related equipment from the locations—the presidential sites in particular—which UNSCOM had planned to investigate. At the presidential sites, the principle of unannounced and surprise inspections is probably lost, as the arrival of senior diplomats will operate as an early warning to Iraq. Problems are likely to emerge again when UNSCOM teams close in on undeclared sites or facilities, as Iraqi cooperation is only forthcoming for declared sites and capabilities; obstruction has mainly occurred when UNSCOM teams have sought access to undeclared locations and capabilities. Finally, the authority of UNSCOM may have been undermined by the opening of a parallel diplomatic channel to the Iraqi leadership and the possibilities it offers to exploit the political divisions inside the Security Council.

By late summer 1998, the MOU had unravelled. In June, fragments of missiles unilaterally destroyed by Iraq and discovered by UNSCOM inspectors were suspected to bear traces of the nerve agent VX. On 18 July, Iraq reportedly refused to turn over to UNSCOM inspectors a document believed to contain vital information about Iraq's non-conventional weapon programme during the Iraq–Iran War. On 21 July, Iraq issued a warning to the effect that it would no longer accept what it termed 'excuses or pretexts' for prolonging the sanctions regime.

Finally, on 7 August 1998, talks between Richard Butler, the Executive Chairman of UNSCOM, and Iraqi officials collapsed following Iraqi allegations that the inspections were really a ploy by the USA to oust the Iraqi regime. In response to UNSCOM's desire to establish a 'road map', which would set out a four- or five-week timetable for completing the task of destroying Iraq's remaining non-conventional weapon capabilities, Iraq demanded an immediate end to the inspections and the lifting of sanctions, stating that it had fulfilled its obligations and had nothing further to reveal to UNSCOM. Cooperation between the two parties was frozen on Iraq's initiative. Following a week-long suspension of inspections, the Security Council, on 17 August, authorized the UNSCOM inspectors to resume work in Iraq regardless.

On 26 August the resignation of Scott Ritter, an experienced weapon inspector, from UNSCOM was announced. Ritter stated his reason for resigning as a lack of determination on the part of the USA and the UN Security Council to enforce the UN resolutions to disarm Iraq and noted the support that China, France and Russia had expressed for an easing of UNSCOM inspection demands. (Both France and Russia would benefit from an end to sanctions on Iraq: it owes France $5 billion and Russia $7 billion. Such debts cannot be repaid until sanctions are lifted and Iraq regains a share of its oil revenue.)

After Ritter's resignation, Iraq demanded a review of the sanctions and continued to refuse to cooperate with UNSCOM inspectors, although it stated that monitoring of previously inspected sites would be permitted, called for a restructuring of UNSCOM and requested that UNSCOM's headquarters be moved to Geneva from New York.

On 10 September, the UN Security Council suspended its regular reviews of the sanctions against Iraq, citing Iraq's failure to cooperate with UNSCOM inspectors as the reason. In turn, the Iraqi Parliament, after meeting in an emergency session on 15 September, voted to end all cooperation with the UN inspectors unless the UN renewed its regular reviews of sanctions. On 28 September, Iraq made clear that it had no intention of resuming full cooperation with UNSCOM inspectiors in the near future. Iraqi Deputy Prime Minister Tariq Aziz and UN Secretary-General Kofi Annan met to discuss proposals for resuming the sanctions reviews; however, Aziz dismissed the inspections as 'provocations'.

## The VX issue

VX is an extremely toxic nerve agent. First synthesized in the 1950s, it belongs to the second generation of nerve agents. Following successful production of the first-generation nerve agents tabun and sarin, Iraq launched a large-scale effort to produce VX in the late 1980s. R&D began in 1985 and production is known to have taken place in 1987–88 and possibly up to 1990.

Iraq only admitted to large-scale VX activities in 1995, when UNSCOM presented Iraqi officials with evidence of it. As with many other aspects of Iraq's CBW-related activities, no comprehensive picture of this programme exists. Iraq declared 3.9 tonnes of VX as having been produced and destroyed unilaterally (without UNSCOM supervision). UNSCOM believes this to be a gross understatement as it uncovered evidence of the import of precursors sufficient for the production of 200 tonnes. UNSCOM was able to verify production only for the years 1987–88, but found evidence that the manufacture of precursors continued into 1989, after the production of VX had, according to Iraq's declarations, already stopped. Furthermore, Iraq stated that its programme was unsuccessful because it had not resolved the inherent instability of the nerve agent. UNSCOM, however, found traces of a VX stabilizer through sampling. Iraq had also acquired very sophisticated technology for VX production, which undermined its claim of failure.

To resolve the discrepancies, UNSCOM conducted a technical evaluation meeting with Iraqi officials on 2–6 February 1998. The outcome was highly unsatisfactory as Iraq continued to misrepresent the VX programme, to withhold vital information and to rely on unsupported individual statements. UNSCOM experts concluded that before the invasion of Kuwait Iraq had been able to produce 50–100 tonnes of VX.

Up to June 1998, UNSCOM had not found evidence that Iraq had weaponized its VX, and Iraq continued

to insist that it had not done so. However, in June a US laboratory reported to UNSCOM that it had detected the presence of degradation products of VX and a stabilizer in some samples of missile warhead pieces recovered by UNSCOM inspectors. Although subsequent tests by French and Swiss laboratories on other pieces of warheads failed to confirm these results, this evidence of Iraqi deception had a major impact on the discussions about lifting the economic sanctions and contributed significantly to the current stand-off between the Security Council and Iraq.

### Economic sanctions

The UNSCOM experience is unique in the history of arms control and disarmament. The Security Council mandate, which includes the comprehensive destruction of Iraq's NBC weapons and related infrastructure and the establishment of a long-term monitoring system to prevent prohibited activities in future, created the most intrusive verification regime ever. However, no guarantee can be given yet that the full extent of Iraq's CBW programmes is known. This inability to certify Iraq as free from non-conventional weapons and weapon capability is a key issue in the continuance of economic sanctions against the country.

Economic sanctions in Iraq take the form of an embargo on the sale of its oil, the import of food and medicines being permitted for humanitarian reasons. Iraq is allowed to export oil up to a value of $5.2 billion every six months and use the proceeds to purchase humanitarian goods. Sanctions can be lifted only when UNSCOM can certify that the Iraqi NBC weapon programmes and their component agents and equipment have been destroyed. Iraq continues to push for a comprehensive review of the sanctions, maintaining that it has complied with UN resolutions since 1991.

Iraq has demanded a comprehensive review of sanctions to demonstrate that some aspects of inspections, such as nuclear weapons, should be moved from an active inspection phase to a monitoring phase. The UK and the USA fear that this would create a dangerous precedent for the continued inspection of chemical and biological weapons.

## • UNSCOM's future

At the time of writing (September 1998), the future of UNSCOM is uncertain. While it is clear that Saddam Hussein has not complied fully with the terms of Resolution 687 and may still harbour significant non-conventional weapon capabilities, it is not clear that the UN Security Council has the will to continue to force him to comply. Moreover, if UNSCOM is not able to carry out the full range of its activities on the ground, information on Iraqi weapon programmes will be more difficult to acquire, leading to concerns that Saddam will find it easier to conceal his weapon programmes.

What does the Iraq experience tell us about future arms control regimes and about the international community's ability to respond to a clear proliferation threat, and what are the possible implications of the current crisis for the Middle East?

For the Middle East, Iraq's continuing possession of non-conventional weapons makes it difficult to envisage other Middle Eastern states acceding to international arms control treaties which would constrain their ability to retaliate. Although there are several other factors which make the acceptance of these treaties by all countries in the region difficult, the Iraq situation is one of the most serious. This cannot be regarded with equanimity by anyone who seeks to develop an arms control response to the Middle East security situation.

More generally, the Iraq experience makes it difficult for the international community to give assurances to other states that they will receive the protection they are supposedly afforded by arms control treaties in return for giving up non-conventional weapons. This is the result of the failure to take prompt retaliatory action to Iraq's violation of international laws and agreements concerning the use of CW during the Iraq–Iran War, of which the evidence was clear. Although the world's refusal to assist Iran may have made sense to some at that time, given countries' particular views of the Iranian regime, it weakened international arms control regimes as security alternatives to the unilateral acquisition and use of these weapons by individual states.

Looking to the future, some observers believe that a change of regime in Iraq may be the only outcome which will offer any prospect that the problem of its non-conventional weapons will be solved. Sanctions remain in effect and are likely to continue for some time, but they have proved porous in the past, especially in the face of declining international cohesion with respect to the desire to punish an aggressor. Moreover, sanctions on dual-use items are very difficult to enforce in the absence of a total ban on the trade in any such items with the target country. This is especially disturbing as these are among the very technologies which are likely to be critical to any attempt by Saddam to recreate his non-conventional weapon capabilities. Without UNSCOM inspectors on the ground to monitor Iraq's use of such technologies they have much more latitude to divert them to prohibited purposes.

Meanwhile, in the view of some, the UK and the USA seem to be reserving to themselves the right to strike at Iraq if they suspect that it is going, among other crimes, to develop or deploy non-conventional weapons. While they also reserved that right under the UNSCOM regime, they were constrained somewhat by the political need to act within the UN framework, particularly in seeking Security Council backing for their actions.

Perhaps most important, it seems that the UNSCOM experience has reinforced the old lesson that it is difficult to stop a determined proliferator in the absence of a strong international will to do so. This is likely to become even more the case because the technologies upon which proliferation depends are becoming more accessible around the world. Moreover, we are moving into an era when sub-state actors will be able to acquire these technologies if they are determined enough. In the face of such realities the need for

united action is ever greater, but unanimity seems to be more and more difficult to achieve as individual nations seek either to profit from these situations or to take unilateral steps which they hope will assure their own security, even if such actions result in a weakening of the international non-proliferation regime and consequent greater insecurity for others.

At the same time we should not be blind to the real achievements of UNSCOM. The world, and particularly the UN, has learned a great deal about how to set up and run an effective intrusive inspection and monitoring regime—Saddam has provoked the crises precisely because UNSCOM was uncovering evidence of his weapon programmes, despite considerable and elaborate efforts on his part to prevent that. He would hardly have gone to the brink of war if UNSCOM had not been doing a good job. Moreover, whatever the future may bring, Saddam has not posed a threat to the world for seven years and his efforts to build his weapon programmes have probably been set back many years by UNSCOM.

The basic problem, however, lies not so much at the technical as at the political level. The UNSCOM experience seems to demonstrate that the international will to constrain a determined proliferator is difficult to sustain indefinitely.

The fundamental issue is the policy pursued by the present Iraqi President and his regime. Iraq inhabits a difficult neighbourhood, but there is no reason to expect that another Iraqi regime would necessarily follow the particular policies Saddam has chosen to adopt. Although the international community has been reluctant, and for good reason, to endorse any policy of bringing about a change of regime, it may be time for the world to confront the limitations of an anachronistic interpretation of Article 2, paragraph 7 of the UN Charter. The principle of non-intervention should not prejudice the application of enforcement measures under Chapter VII of the Charter.

The costs of such multilateral intervention may be high, but the costs of not intervening may be higher.

## • Chronology of events

| | | |
|---|---|---|
| 1921 | | Iraq is created under King Faisal I of the Hashemite family |
| 1958 | 14 July | Hashemite monarchy is overthrown |
| 1968 | 17 July | Ba'ath Party seizes control of Iraq |
| 1979 | 16 July | Saddam Hussein becomes president |
| 1980 | 22 Sep. | Iraq attacks Iran |
| 1984 | 26 Mar. | A UN document, S/16 433, cites the use of CW for the first time, referring to an event in 1983 |
| 1988 | 16 Mar. | Saddam attacks Halabja with CW |
| | 8 Aug. | Iraq–Iran War ends |
| 1990 | 2 Aug. | Iraq invades Kuwait |
| | 6 Aug. | Economic sanctions are imposed on Iraq |
| 1991 | 21 Feb. | Iraq is ejected from Kuwait by a US-led international coalition |
| | 3 Apr. | UN Security Council adopts Resolution 687 |
| | 19 Apr. | UN Security Council approves establishment of UNSCOM with a mandate to inspect the destruction of Iraqi CBW and monitor Iraq's compliance with its obligations under the cease-fire agreement |
| | 19 Apr. | Rolf Ekéus of Sweden appointed Executive Chairman of UNSCOM |
| | 1 May | 20 other members appointed to UNSCOM |
| 1995 | 14 Apr. | UN Security Council adopts Resolution 986 (the 'oil-for-food' programme), not accepted by Iraq |
| | 7 Aug. | Iraqi General Hussein al-Kamal provides evidence of the production of VX by Iraq |
| 1996 | 20 May | Iraq signs UNSC Resolution 986, worth $2 billion every six months |
| 1997 | 2 Nov. | Evidence of development of VX is found |
| | 29 Oct. | Seven US members of UNSCOM are expelled by Iraq |
| | 12 Dec. | UNSCOM is denied access to eight presidential sites |
| 1998 | 1 Feb. | 'Oil-for-food' deal increased to $5.2 billion every six months |
| | 23 Feb. | UN and Iraq sign a memorandum of understanding (MOU) |
| | 2 Mar. | UNSC Resolution 1154; endorsement of the MOU |
| | 24 June | US laboratory reported to have found traces of VX degradation products on samples from missiles unilaterally destroyed by Iraq |
| | 7 Aug. | Talks between Richard Butler and Iraq collapse |
| | 17 Aug. | UNSCOM is authorized by the UN to resume inspections in Iraq |
| | 26 Aug. | UNSCOM weapon inspector Scott Ritter resigns |
| | 10 Sep. | UN suspends regular review of economic sanctions on Iraq |
| | 15 Sep. | Iraq's Parliament votes to end all cooperation with UNSCOM |

# • The Iraqi non-conventional weapon programmes: summary tables

## Biological weapons

### 1. Holdings declared by Iraq*

| | |
|---|---|
| Anthrax | 8 400 litres |
| Botulinum toxin | 19 000 litres |
| Clostridium (gas gangrene) | 3 400 litres |
| Aflatoxin | 2 200 litres |
| Ricin | 10 litres |

### 2. BW munitions

| | |
|---|---|
| Scud missile warheads (al-Hussein) | 25 |
| anthrax | 5 |
| botulinum toxin | 16 |
| aflatoxin | 4 |
| Aerial bombs | 157 |
| anthrax | 50 |
| botulinum toxin | 100 |
| aflatoxin | 7 |
| Aerial dispensers | 4 |

### 3. Other munitions tested for BW

- 155-mm artillery shells
- Artillery rockets
- MiG-21 drone
- Aerosol generators

## Chemical weapons

### 1. Holdings declared by Iraq

| | |
|---|---|
| Mustard gas | 500–600 tonnes |
| G agents (sarin, tabun) | 100–150 tonnes |
| VX** | 50–100 tonnes |

### 2. CW munitions

- Aerial bombs (of which 3 contained VX)
- Aerial spray dispensers
- 1 122-mm rocket containing VX
- 120-mm rockets

## Ballistic missiles

| | |
|---|---|
| Scud B (300-km range) | 819 operational |
| al-Hussein (650-km range) | in development |
| al-Abbas (950-km range) | in development |
| SS-21 short-range ballistic missile launcher turned over to UNSCOM in 1995 | |
| al-Samoud missile (150-km range) | permitted under UNSC Resolution 687 |

**In the past six years (as of February 1998), UNSCOM has destroyed or supervised the destruction of:**

- 38 537 filled and empty CW munitions
- 480 000 litres (690 tonnes) of CW agents
- > 3 000 tonnes of precursor chemicals
- 8 types of delivery systems
- The al-Hakam BW production facility
- 48 Scud missiles
- 6 operational mobile launchers
- 28 operational fixed launch pads
- 32 fixed launch pads under construction
- 30 chemical warheads
- 14 conventional warheads
- Other related equipment

**Iraq claims to have unilaterally destroyed all its missiles, but UNSCOM has only been able to verify the destruction of:**

- 83 Scud missiles
- 9 mobile launchers
- 426 pieces of CW production equipment
- 91 pieces of related analytical instruments

**Iraq claims to have consumed 2870 tonnes of CW agent in the period 1981–88, but UNSCOM has not been able to verify this.**

**The following items remain unaccounted for:**

- Scud missile components, warheads and propellant
- 17 tonnes of growth media for the production of BW agents
- Items of CW production equipment
- 4 000 tonnes of CW precursors
- 750 tonnes of VX precursors
- 100 al-Hussein missiles
- 31 000 CW munitions
- 20 R-17 Scud-B-type missiles
- 40–70 CBW-capable missile warheads
- Significant quantities of biological warfare agents
- Significant quantities of 155-mm ammunition rounds

* In addition 39 tonnes of growth medium required for BW production were imported in 1988, of which 17 tonnes remain unaccounted for. The litre unit, however, gives no indication of the concentration of the agent in the slurry.

** UNSCOM estimates that 50–100 tonnes were produced before 1990. Iraq declared 3.9 tonnes produced between 1988 and 1990 and unilaterally destroyed.

**Sources**

- http://www.un.org/Depts/unscom/achievement.htm
- http://www.janes.com/defence/features/iraq/sentmilitary.html

## • Extracts from UN Security Council Resolution 687 (1991)

Adopted by the Security Council at its 2981st meeting, on 3 April 1991

The Security Council . . .

C

7. Invites Iraq to reaffirm unconditionally its obligations under the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, and to ratify the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, of 10 April 1972;

8. Decides that Iraq shall unconditionally accept the destruction, removal, or rendering harmless, under international supervision, of:

(*a*) all chemical and biological weapons and all stocks of agents and all related subsystems and components and all research, development, support and manufacturing facilities;

(*b*) all ballistic missiles with a range greater than 150 km and related major parts, and repair and production facilities;

9. Decides, for the implementation of paragraph 8 above, the following:

(*a*) Iraq shall submit to the Secretary-General, within fifteen days of the adoption of the present resolution, a declaration of the locations, amounts and types of all items specified in paragraph 8 and agree to urgent, on-site inspection as specified below;

(*b*) the Secretary-General, in consultation with the appropriate Governments and, where appropriate, with the Director-General of the World Health Organization, within forty-five days of the passage of the present resolution, shall develop, and submit to the Council for approval, a plan calling for the completion of the following acts within forty-five days of such approval:

(i) the forming of a Special Commission, which shall carry out immediate on-site inspection of Iraq's biological, chemical and missile capabilities, based on Iraq's declarations and the designation of any additional locations by the Special Commission itself;

(ii) the yielding by Iraq of possession to the Special Commission for destruction, removal or rendering harmless, taking into account the requirements of public safety, of all items specified under paragraph 8(*a*) above, including items at the additional locations designated by the Special Commission under paragraph 9(*b*)(i) above and the destruction by Iraq, under the supervision of the Special Commission, of all its missile capabilities, including launchers, as specified under paragraph 8(*b*) above;

(iii) the provision by the Special Commission of the assistance and cooperation to the Director-General of the International Atomic Energy Agency required in paragraphs 12 and 13 below;

10. Decides that Iraq shall unconditionally undertake not to use, develop, construct or acquire any of the items specified in paragraphs 8 and 9 above and requests the Secretary-General, in consultation with the Special Commission, to develop a plan for the future ongoing monitoring and verification of Iraq's compliance with this paragraph, to be submitted to the Security Council for approval within one hundred and twenty days of the passage of this resolution;

11. Invites Iraq to reaffirm unconditionally its obligations under the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968;

12. Decides that Iraq shall unconditionally agree not to acquire or develop nuclear weapons or nuclear-weapons-usable material or any subsystems or components or any research, development, support or manufacturing facilities related to the above; to submit to the Secretary-General and the Director-General of the International Atomic Energy Agency within fifteen days of the adoption of the present resolution a declaration of the locations, amounts, and types of all items specified above; to place all of its nuclear-weapons-usable materials under the exclusive control, for custody and removal, of the International Atomic Energy Agency, with the assistance and cooperation of the Special Commission as provided for in the plan of the Secretary-General discussed in paragraph 9(*b*) above; to accept, in accordance with the arrangements provided for in paragraph 13 below, urgent on-site inspection and the destruction, removal or rendering harmless as appropriate of all items specified above; and to accept the plan discussed in paragraph 13 below for the future ongoing monitoring and verification of its compliance with these undertakings;

13. Requests the Director-General of the International Atomic Energy Agency, through the Secretary-General, with the assistance and cooperation of the Special Commission as provided for in the plan of the Secretary-General in paragraph 9(*b*) above, to carry out immediate on-site inspection of Iraq's nuclear capabilities based on Iraq's declarations and the designation of any additional locations by the Special Commission; to develop a plan for submission to the Security Council within forty-five days calling for the destruction, removal, or rendering harmless as appropriate of all items listed in paragraph 12 above; to carry out the plan within forty-five days following approval by the Security Council; and to develop a plan, taking into account the rights and obligations of Iraq under the Treaty on the Non-Proliferation of Nuclear Weapons of 1 July 1968, for the future ongoing monitoring and verification of Iraq's compliance with paragraph 12 above, including an inventory of all nuclear material in Iraq subject to the Agency's verification and inspections to confirm that Agency safeguards cover all relevant nuclear activities in Iraq, to be submitted to the Security Council for approval within one hundred and twenty days of the passage of the present resolution;

14. Takes note that the actions to be taken by Iraq in paragraphs 8, 9, 10, 11, 12 and 13 of the present resolution represent steps towards the goal of establishing in the Middle East a zone free from weapons of mass destruction and all missiles for their delivery and the objective of a global ban on chemical weapons; . . .

## • Select list of references

### SIPRI Yearbooks

**All editions of the SIPRI Yearbook are published by Oxford University Press.**

*SIPRI Yearbook 1991:World Armaments and Disarmament*
Lundin, S. J. and Stock, T., 'Chemical and biological warfare: developments in 1990', pp. 85–112
Karp, A., 'Ballistic missile proliferation', pp. 317–43
Urquhart, B., 'The role of the United Nations in the Iraq–Kuwait conflict in 1990', pp. 616–26
'UN Security Council resolutions on the Iraqi invasion of Kuwait', Appendix 18A, pp. 627–35
Posen, B. P., 'Military mobilization in the Persian Gulf conflict', pp. 639–54

*SIPRI Yearbook 1992: World Armaments and Disarmament*
Lundin, S. J., Stock, T. and Geissler, E., 'Chemical and biological warfare and arms control developments in 1991', pp. 147–82
'National and multinational inspections', Appendix 6A, pp. 183–86
Pearson, F. S., Brzoska, M. and Crantz, C., 'The effects of arms transfers on wars and peace negotiations', pp. 399–415
Heldt, B., Wallensteen, P. and Nordquist, K.-Å., 'Major armed conflicts in 1991', pp. 419, 430–31
Ekéus, R., 'The United Nations Special Commission on Iraq', pp. 509–24
'UN Security Council Resolution 687, the cease-fire resolution', Appendix 13A, pp. 525–30

*SIPRI Yearbook 1993: World Armaments and Disarmament*
Stock, T., 'Chemical and biological weapons: developments and proliferation', pp. 259–92
Ekéus, R., 'The United Nations Special Commission on Iraq: activities in 1992', pp. 691–704

*SIPRI Yearbook 1994*
Stock, T. and de Geer, A., 'Chemical weapon developments', pp. 315–42
Anthony, I. *et al*., 'Arms production and arms trade', pp. 455–502
Trevan, T., 'UNSCOM: activities in 1993', pp. 739–58

*SIPRI Yearbook 1995: Armaments, Disarmament and International Security*
Stock, T., Geissler, E. and Trevan, T., 'Chemical and biological arms control', pp. 725–60

*SIPRI Yearbook 1996: Armaments, Disarmament and International Security*
Stock, T., Haug, M. and Radler, P., 'Chemical and biological weapon developments and arms control', pp. 661–708

*SIPRI Yearbook 1997: Armaments, Disarmament and International Security*
Zanders, J. P., Eckstein, S. and Hart, J., 'Chemical and biological weapon developments and arms control', pp. 437–68

*SIPRI Yearbook 1998: Armaments, Disarmament and International Security*
Zanders, J. P. and Hart, J., 'Chemical and biological weapon developments and arms control', pp. 457–89

### Other SIPRI publications

Manley, R. G., 'UNSCOM's experience with chemical warfare agents and munitions in Iraq', eds T. Stock and K. Lohs, *The Challenge of Old Chemical Munitions and Toxic Armament Wastes,* SIPRI Chemical & Biological Warfare Studies no. 16 (Oxford University Press: Oxford, 1997), pp. 241–52

'The Chemical Weapons Convention', SIPRI Fact Sheet, Apr. 1997

'Chemical warfare in the Iraq–Iran War', SIPRI Fact Sheet, May 1984

### United Nations documents

Most of the following documents may be traced from the UNSCOM home page, URL <http://www.un.org/Depts/unscom.

#### Key resolutions

| | | |
|---|---|---|
| S/RES/1154 | 2 Mar. 1998 | Endorsement of the MOU on access to Presidential sites |
| S/RES/1137 | 12 Nov. 1997 | Condemnation of Iraq's imposition of travel ban |
| S/RES/1134 | 23 Oct. 1997 | Condemnation of Iraq's behaviour, further sanctions threatened |
| S/RES/1115 | 21 June 1997 | Condemnation of Iraq's refusal to grant access and interviews |
| S/RES/1060 | 12 June 1996 | Condemnation of Iraq's refusal to grant access to inspectors |
| S/RES/1051 | 27 Mar. 1996 | Approval of export/import monitoring mechanism for Iraq |
| S/RES/715 | 11 Oct. 1991 | Approval of Ongoing Monitoring and Verification Plan |
| S/RES/707 | 15 Aug. 1991 | Iraq compliance; inspection flights; Iraq to provide disclosures |
| S/RES/699 | 17 June 1991 | Iraq to be liable for all costs associated with UNSCOM's work |
| S/RES/687 | 3 Apr. 1991 | Cease-fire and mandate of UNSCOM |
| S/RES/678 | 29 Nov. 1990 | Ultimatum/deadline set for Iraqi withdrawal from Kuwait by 15 January 1991 |
| S/RES/660 | 2 Aug. 1990 | Condemnation of the invasion of Kuwait and demanding the withdrawal of Iraqi forces |
| S/RES/620 | 26 Aug. 1988 | Condemnation of the use of CW in the Iraq–Iran War |

## Other key UN documents

| | |
|---|---|
| S/1998/1194 | 9 Sep. 1998 Condemnation of break of cooperation, sanctions reviews suspended |
| S/1998/769 | 18 Aug. 1998 President of the Council's reply to Executive Chairman's 12 August letter |
| S/1998/767 | 12 Aug. 1998 12 August letter from the Executive Chairman on the implications of Iraq's August decisions |
| S/1998/719 | 5 Aug. 1998 Report of the Chairman's August 1998 Baghdad mission |
| S/1998/529 | 17 June 1998 Report of the Chairman's June 1998 Baghdad mission |
| S/1998/326 | 15 Apr. 1998 Report of the Special Group on visits to presidential sites |
| S/1998/278 | 27 Mar. 1998 Report of the Chairman's March 1998 Baghdad mission |
| S/1998/166 | 27 Mar. 1998 Memorandum of understanding on presidential sites |
| S/1998/208 | 9 Mar. 1998 Procedures for presidential sites |
| S/1998/58 | 22 Jan. 1998 Report of the Chairman's January 1998 Baghdad mission |
| S/PRST/1 | 14 Jan. 1998 Statement reiterating demand for full cooperation |
| S/PRST/56 | 22 Dec. 1997 Statement calling refusal to grant access 'a clear violation' |
| S/1997/987 | 17 Dec. 1997 Report of the Chairman's December 1997 Baghdad mission |
| S/PRST/54 | 3 Dec. 1997 Statement endorsing report of the emergency UNSCOM session |
| S/1997/922 | 24 Nov. 1997 Report of the emergency session of UNSCOM |
| S/PRST/51 | 13 Nov. 1997 Statement condemning expulsion of inspectors |
| S/PRST/49 | 29 Oct. 1997 Statement on Iraq's 29 October policy—US Inspectors, U2 |
| S/1997/152 | 24 Feb. 1997 Joint Statement on February talks and missile remnant removal |
| S/PRST/96/49 | 30 Dec. 1996 Statement on Iraq's refusal to allow missile remnant removal |
| S/PRST/96/36 | 23 Aug. 1996 Statement on refusal of cooperation, access and interviews |
| S/PRST/96/28 | 14 June 1996 Statement on refusal of access for inspectors |
| S/PRST/96/11 | 19 Mar. 1996 Statement on Iraq's refusal of access for inspectors |
| S/1995/1017 | 7 Dec. 1995 Export/Import monitoring mechanism |
| S/95/208 | 17 Mar. 1995 Revised annexes to UNSCOM's Ongoing Monitoring and Verification (OMV) plan |
| S/22871 | 2 Oct. 1991 UNSCOM's OMV plan |
| S/22614 | 17 May 1991 Report on UNSCOM's operations concept |
| S/22508 | 18 Apr. 1991 Report on the establishment of UNSCOM |

## Semi-annual reports to the Security Council

| | |
|---|---|
| S/1998/332 | 16 Apr. 1998 Fifth report under Resolution 1051 |
| S/1997/774 | 6 Oct. 1997 Fourth report under Resolution 1051 |
| S/1997/301 | 11 Apr. 1997 Third report under Resolution 1051 |
| S/1996/848 | 11 Oct. 1996 Second report under Resolution 1051 |
| S/1996/258 | 11 Apr. 1996 First report under Resolution 1051 |
| S/1995/1038 | 17 Dec. 1995 Ninth report under Resolution 699 |
| S/1995/864 | 11 Oct. 1995 Eighth report under Resolution 715 |
| S/1995/494 | 20 June 1995 Eighth report under Resolution 699 |
| S/1995/284 | 10 Apr. 1995 Seventh report under Resolution 715 |
| S/1994/1422 | 15 Dec. 1994 Seventh report under Resolution 699 |
| S/1994/1138 | 7 Oct. 1994 Sixth report under Resolution 715 |
| S/1994/750 | 24 June 1994 Sixth report under Resolution 699 |
| S/1994/489 | 22 Apr. 1994 Fifth report under Resolution 715 |
| S/26910 | 21 Dec. 1993 Fifth report under Resolution 699 |
| S/26684 | 5 Nov. 1993 Fourth report under Resolution 715 |
| S/25977 | 21 June 1993 Fourth report under Resolution 699 |
| S/25620 | 19 Apr. 1993 Third report under Resolution 715 |
| S/24984 | 17 Dec. 1992 Third report under Resolution 699 |
| S/24661 | 19 Oct. 1992 Second report under Resolution 715 |
| S/24108 (Corr.1) | 16 Apr. 1992 Second report under Resolution 699 |
| S/23801 | 10 Apr. 1992 First report under Resolution 715 |
| S/23268 | 4 Dec. 1991 First Report under Resolution 699 |
| S/23165 | 25 Oct. 1991 First Report under Resolution 687 |

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