

# CHEMICAL AND BIOLOGICAL WEAPON PROLIFERATION

Dr Jean Pascal Zanders

The use of chemical weapons (CW) in the war between Iraq and Iran in 1980-88 revealed that several countries outside the East-West confrontation had acquired chemical and possibly biological weapons (BW). At the same time, the likelihood of outside military intervention into regional conflicts, such as the 1990-91 Gulf War, increased after the end of the cold war. The realization that expeditionary forces could face an army with chemical or biological weapons heightened international awareness of the dangers of proliferation. The dimension of sub-state proliferation was added to after the first large-scale indiscriminate terrorist attack with CW in the Tokyo underground system in March 1995.

Although the issue may appear to be of relatively recent origin, the spread of chemical weapons actually started in World War I and has continued ever since. The Allies, whose chemical industry was generally less developed than that in Imperial Germany, soon began sharing knowledge and expertise on offensive and defensive aspects of chemical warfare and exchanging production capabilities for certain chemicals. In addition, France and Great Britain supplied other Allies whose territory was occupied, such as Belgium, or who had an insufficiently developed CW production base, such as the United States, with chemical warfare munitions.

After World War I most major belligerents scaled back their offensive CW programmes. But it was not the number of states with a chemical capacity, but the size of the CW arsenals that was the chief security concern. A significant imbalance offered the CW possessor the prospect of a swift, decisive victory and therefore contributed to the likelihood of war. For this reason some major powers viewed the sale of chemicals, technology and factories to smaller or less-advanced states as beneficial to their own national security. The transactions involved direct government-to-government dealings. On the eve of World War II many European second-tier powers maintained limited offensive CW programmes and, in doing so, contributed to the continent-wide patchwork of overlapping balances of power. In addition, Italy's use of CW in Abyssinia (1935-36) and the worsening political climate in Europe gave a major impetus to offensive and defensive CW programmes. At no other point in history have so many countries been known to possess chemical weapons.

Biological weapons took a little longer to gain credibility. The only experience from the Great War was German sabotage with pathogens against livestock in the United States destined for Europe and the Middle East. Thereafter, a better understanding of disease transmission in the 1920s and 1930s combined with the dramatic experiences of the Spanish Flu epidemic at the end of World War I increased concerns about biological warfare. Based on essentially faulty intelligence and fears of vulnerability, several countries began to look seriously at the feasibility of biological warfare and the suitability of certain pathogens for weaponization. Germany's research and development remained splintered throughout World War II and did not lead to a useful weapon. More concerted efforts in Canada, Great Britain and the United States led to the three countries pooling their resources. However, apart from a limited British capability to retaliate with anthrax against German cattle, the Allies failed to produce an operational offensive biological weapon. The only country with a dedicated long-term offensive BW programme was Japan. Its research and development of agents and dissemination devices began in the early 1930s and lasted until the end of the war. The programme was also based on human experimentation in occupied China. On several occasions Japanese troops released biological warfare agents against Chinese villages and soldiers.

Post-war research and production of offensive CBW was continued in the Soviet Union and the USA. The new nerve agents, which the Germans had discovered in the late 1930s while researching pesticides, rekindled their interest in chemical warfare. Most secondary powers, however, gradually abandoned their offensive CBW programmes to concentrate on chemical and biological defence, protection and prophylaxis. The number of countries with offensive CW capabilities thus

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dropped considerably from the pre-World War II high and few countries other than those which had begun BW-related investigations during the inter-war years were known to have started up new biological warfare programmes.

It therefore came as something of a shock to the major powers when, in the 1980-88 Gulf War, Iraq breached the only international legal norm against chemical warfare then in force, the 1925 Geneva Protocol, by attacking Iranian forces and Kurdish guerrillas and civilians in Iraq with CW. It soon emerged that Western companies had been or were supplying Iraq with the technology and know-how to manufacture these weapons. Active CW programmes were reported in several other countries and in many instances Western companies were found to be heavily involved. Most of these programmes were located in politically volatile regions and led to fears of rapid escalation of violence as military leaders contemplated preemptive strikes against production and storage facilities.

While there is always a degree of uncertainty as to the number of countries engaging in chemical or biological warfare programmes, we are even less confident in assessing the level of development and whether the programmes are offensive or defensive. At what point should a country enter the league of chemical or biological weaponry? Should it be when it has the scientific, technological and industrial base to support a CBW programme, when it has a research and development programme, when it produces chemical or biological weapons, when it stockpiles them, when it deploys them with troops, or when there is clear evidence that they have been assimilated into military doctrine? An important factor here is that whatever country is making the assessment is liable to use different criteria depending on whether a state is hostile or friendly. Perceived intent is a major subjective component in threat assessment.

Recent US analyses have tended to converge on a figure of at least 20 to 25 countries that have or may have been developing nuclear, biological or chemical weapons, or their missile delivery systems. As the figures now usually comprise four categories of weapons, it has become more difficult to isolate the CBW threat assessment. The 1997 edition of *Proliferation: Threat and Response* by the US Department of Defense listed nine countries as having a CW programme in various stages of development: China, India, Iran, Iraq, North Korea, Libya, Pakistan, Russia and Syria. It also named seven countries as have a BW programme: China, India, Iran, Iraq, North Korea, Pakistan and Russia. Some countries, however, are conspicuously absent from these lists. Egypt, Israel, South Korea and Taiwan, for instance, were named in the August 1993 Office of Technology Assessment report, *Proliferation of Weapons of Mass Destruction: Assessing the Risks*.

Under the 1993 Chemical Weapons Convention (CWC) signatories are required to declare CW programmes initiated after 1 January 1946. These declarations are subject to verification and inspections by personnel of the Organization for the Prohibition of Chemical Weapons (OPCW) in The Hague. In case of doubt, any party to the convention may request a challenge inspection to ascertain the veracity of submissions. The United States and Russia, as successor state to the Soviet Union, have declared large CW stockpiles (30,000 and 40,000 agent tonnes respectively), which are in the process of being destroyed. They have also declared production facilities, which are either being destroyed or converted. China, France, India, South Korea and the United Kingdom are known to have made declarations of CW production facilities. Japan has declared and destroyed the Aum Shinrikyo sarin factory. Following the hearings of the Truth and Reconciliation Commission in June 1998 and the publication of the report in October, South Africa is now also known to have had a major CW armament programme in the 1980s.

The 1972 Biological and Toxic Weapons Convention (BTWC) does not require states parties to declare past programmes but they are encouraged to volunteer information. Few countries have submitted details of offensive biological warfare activities. International inspections in Iraq, conducted as part of the cease-fire agreement ending the 1990-91 Gulf War, have uncovered a vast and advanced biological warfare programme although its full scope has not yet been determined. There is still some doubt as to whether Russia has totally abandoned its offensive BW research and development despite decrees by President Boris Yeltsin ordering its termination. Negotiators in Geneva are currently considering a protocol to the BTWC with verification measures, but until the conclusion of these talks no formal procedures to verify compliance with the convention are available.

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### *Addressing the CBW proliferation threat: export controls and disarmament*

Most of the technologies and materials necessary for the manufacture of chemical or biological weapons are dual-use in nature. They have important civilian applications, but can easily be diverted for CBW programmes. One way of controlling the way they are used is to impose export controls. Few countries, whether industrialized or industrializing, object to the principle of export controls. Export controls are embedded in the CWC and will become part of the BTWC treaty regime once the negotiations on an additional protocol to that convention have been concluded. In each case they allow the right of access to the controlled technologies and goods for purposes not prohibited by either convention. Far more controversial in North-South relations is the existence of an export control regime outside both conventions, namely the Australia Group. Several developing countries see it as an attempt to undercut their right of access to certain commodities under the disarmament treaties.

Specific CBW-related export controls emerged in the mid-1980s, when it became clear that Western companies were aiding Iraq's CW programmes. Previously, trade regulations to prevent the diversion of dual-use goods were either non-existent or easily circumvented. The need to co-ordinate national export controls led to the formation of the Australia Group as an informal consultative forum in 1985. Its original objective was to prevent CW proliferation while the negotiations to complete the CWC were being undertaken. Subsequently, it has also acted to prevent BW proliferation while improved measures to ensure compliance with the BTWC are introduced. Today, the control lists of the Australia Group comprise chemical precursors, equipment used in the production of CBW, and biological warfare agents and organisms. The participants - 30 states plus the European Commission, which attends as an observer - have agreed to apply decisions taken collectively through their national export control systems. In 1992 the Missile Technology Control Regime (MTCR) extended its scope to include missiles capable of delivering chemical and biological warheads. The Australia Group list of controlled goods is incorporated into other export control regimes, such as the Wassenaar Arrangement and the European Union regulations on exports of dual-use goods.

So far, we have dealt with strategies to control the supply of biological and chemical weapons. But what of controlling demand? A disarmament treaty is the ultimate demand-side non-proliferation policy, because it involves a conscious decision to renounce these weapons under all circumstances. The BTWC and the CWC contain an absolute prohibition to develop or otherwise acquire chemical or biological weapons and the obligation never to assist anybody under any circumstances to acquire such weapons. In addition, parties also have a disarmament obligation: they must reduce existing stockpiles of chemical or biological weapons to zero.

At present, the CWC generates a far higher degree of confidence, because it contains elaborate verification and inspection mechanisms as well as procedures to restore compliance in case of a breach. The BTWC does not have similar provisions simply because in the early 1970s there was widespread consensus that BW had little military utility. In view of the rapid progress in biotechnology and genetic engineering, concerns about designer biological warfare agents and their antidotes have risen sharply. Hopefully, the states parties to the BTWC will reach agreement on verification and compliance measures in additional protocol to the convention before the 5<sup>th</sup> Review Conference of States Parties to the BTWC in 2001.

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