

# Present Trends and Future Policy Choice

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Oegstgeest, The Netherlands 16-17 April 2005

On 16 and 17 April 2005 in Oegstgeest, the Netherlands, the Pugwash Study Group on the Implementation of the CBW Conventions convened a high-level workshop on Present Trends and Future Policy Choice. In contrast to the regular workshops convened by the study group (of which there have been 21 in the Netherlands and Switzerland since 1993), in this workshop participants were encouraged to step back from the day-to-day aspects of implementation of the 1972 Biological Weapons Convention (BWC) and the 1993 Chemical Weapons Convention (CWC) in order to consider policy options for the longer term within a perspective not confined solely to the treaties. The meeting was jointly convened by the Study Group and the Harvard Sussex Program on CBW Armament and Arms Limitation, and hosted by the Netherlands Pugwash Group.

The aim of the workshop was to canvass and discuss the assessments, concerns and proposals of a diverse group of knowledgeable persons from national governments, international organizations, industry and academia regarding the nature of the danger to society inherent in the possibility of toxic or harmfully infective agents being released for hostile purposes, and the range of initiatives and policy-options for averting that danger that are available to elements of civil society, to national governments, and to the international community.

Attending the workshop were 27 participants from 10 countries (Argentina, Germany, Israel, Italy, Netherlands, Pakistan, Russia, Sweden, UK and USA), all by invitation and in their personal capacities. The present report is the sole responsibility of its author, who was asked by the meeting to prepare a report in consultation with the Steering Committee. It does not necessarily reflect a consensus of the workshop as a whole or of the Study Group.

## **Defining the danger**

### *Trends in science and technology*

The contributions of emerging technology to the present danger have been the subject of numerous assessments, ranging from the science and technology background papers submitted to successive BWC review conferences, to the IUPAC and SAB study for the 1st CWC Review Conference and the present work of the US National Academies Committee on Advances in Technology and the Prevention of Their Application to Next Generation Biowarfare Threats. While purely scientific and technological factors have been and are being actively addressed elsewhere, consideration should also be paid to the unintended consequences of responses to the perceived danger of CB weapons. One such unintended consequence is limiting the beneficial contributions that biology and chemistry can make to humanity. For example, a large number of US microbiologists wrote in early 2005 to Science magazine to protest about the reallocation of funds towards biodefence activities and research into potential BW agents and away from existing diseases and basic research. The scientists argued that their science is suffering due to the excessive shifting of funding and personnel which is being done because of the perceived threat from CB weapons.

A second unintended consequence could be far more serious; it is the danger of increasing the likelihood of hostile use of CB weapons. Compared to the number of people trained in the use of explosive weapons, there are very few people in the world currently knowledgeable regarding the hostile use of infective agents. However, efforts underway in the USA and other countries could lead to the creation of a whole new generation of people with the necessary knowledge. While few of them would have the intent to use their knowledge and skills for hostile purposes, the more widespread the knowledge and culture of CB weapons becomes, the more likely it becomes that some individuals within such programs may be attracted to the use of CB weapons, either by themselves or by advocating such use within groups in which they may be influential. Another element is the secrecy of programmes. Layers of secrecy around a programme can encourage others to try to emulate what they think is going on within the secret programmes. From the outside, others will see money and resources being invested behind a wall of secrecy and they may well be influenced by the "not if, but when" statements reported in the media. In such an environment, activities conducted in secret promote more activities, more applications and they further the trend towards assimilation of CB weapons.

A single use of CB weapons might or might not be seriously damaging, depending on a number of factors. A greater danger lies in the possibility that, over time, CB weapons would become an accepted part of hostilities and that countries, groups and individuals would try to acquire and use them. There are two main factors affecting the assimilation of such weapons. One is the acquisition of the necessary knowledge, equipment, and materials, basically a supply-side problem. However, for CB weapons, these problems are far from insurmountable; many biological agents for example are endemic in nature. Similarly, over a period of several years immediately after WWII, individuals working on the US BW programme were allowed to publish their work in the open scientific literature. So, both the materials and the required knowledge are relatively easy to come by if there is sufficient intent to do so. It is the second factor, intent, that is likely to be key. Intent on the part of only a few individuals could lead to serious episodes of CB use. Far worse would be assimilation where an entire community - military, security or terrorist, for example - decides to devote resources to acquiring the relevant technology for hostile purposes.

There are a number of factors that can contribute to the intent of groups or individuals to use CB weapons. Some are political in that the foreign policy of one state can cause people in other states to want to attack it. Other factors are cultural or deeply embedded in history. Leaving these factors aside, other factors include 'voice' and 'programmes'. Regarding the first of these, in 1969 when he announced the US renunciation of BW, US President Richard Nixon said: "Mankind already carries in its own hands too many of the seeds of its own destruction." Nowadays, the talk is along the lines of: "There are bad people who might use biological weapons against good people." Rather than deterring the "bad people" or lessening their intent to use CB weapons, such language actually serves to highlight vulnerabilities. It is very different from saying that the use of CB weapons is bad for all humanity and it only glamorises CB weapons among those who might therefore find them attractive. Another example of 'voice' is the frequently-heard statement that "it's not a question of if, but when" CB weapons will be used. Such a sweeping statement is largely meaningless and fails to address issues such as the size and target of the predicted attack. More significantly, such statements create an environment of expectation of use of such weapons that could stimulate interest in defence organizations or terrorist groups in acquiring them. The expectation of use catalyses the process of assimilation. Finally, the "not if, but when" statements shift attention and effort towards short-term activities and away from effective efforts to avert the use of CB weapons in the first place and to deal with the key element of intent.

The ultimate risk posed by biological weapons is that the exploitation of advanced biotechnology could threaten the advance of civilization into which humanity has invested so much down the centuries. How could CB weapons threaten that? As biology advances, we will learn how to manipulate all of the life processes, including cognition, development and heredity. In addition, the world is witnessing a blurring of the distinction between war and peace. Erosion of the boundary between war and peace can lead to acceptance of modes of hostility and subjugation that would otherwise be unacceptable, both within and between nations and societies. It is important that ways are found to prevent the development and assimilation of advanced biotechnological weapons. There is currently a fairly strong taboo against the hostile use of biology and chemistry. But there could be potential catalysts that initiate the assimilation of the use of biology for hostile purposes. One possible catalyst could be the use of so-called non-lethal weapons for operations beyond routine police use. Whereas the significant overt use of a biological weapon would likely induce a strong international response, the gradual extension of the use of non-lethal weapons would be a much less visible development that could cause the erosion of constraints against CB weapons generally.

### **Political and other salient trends**

A number of salient political and other trends which impact upon present CBW trends and future CBW policy choice have been identified, such as: the crisis of multilateralism; increased secrecy, greatly increased expenditure on secret programmes, and the suspicions generated thereby; allegations without evidence; hyperbole and manipulation of CBW dangers by politicians, compounded by: ignorance and naïveté in high places regarding CBW matters; and media sensationalism; discussion and implementation of relatively ineffective measures that distract attention from more effective approaches; states, especially in the Middle East continuing to remain outside the CBW treaty regime; the continuing allure of 'nonlethal' CBW; and the blocking of the BWC Ad Hoc Group negotiation and the message that this continues to spread. It might be the case that it is trends such as these, much more than the technological trends, that will generate the dangers that need to be met by policy choice. Indeed, future scientific and technological developments may not change the problem very much for several of the measures already conceived were designed to deal with even quite novel scientific or technological advances. The danger is not solely in the newest pathogen.

Overarching trends exist, such as the fact that norms, for example the non-use of chemical weapons, always come second to political interest. An example was the international community's silence when UN investigators confirmed that Iraq was using chemical weapons against Iran in the 1980s. Many states tolerated Iraqi use of chemical weapons because it was not in their perceived interests for Iran to defeat Iraq. In addition, several states around the world learnt from Iraq's experience in the 1980s that chemical weapons can be militarily effective in certain circumstances, in that they can counter the numerical superiority of an enemy. Particularly in the Middle East, chemical weapons are also a response to the possession by other states of nuclear weapons.

Since the end of the Cold War, the role of non-proliferation and disarmament in international security has diminished. There has been a move away from a normative approach in arms control and towards an operational one; emphasis has been shifted from non-proliferation to counter-proliferation, selective instruments such as the Proliferation Security Initiative (PSI) have been favoured over non-selective ones. There are a number of reasons for this, such as the end of the superpower confrontation and the emergence of new threats which demand

attention, but a fundamental shift in the global balance of power is underway; the present dominance of the USA is unquestionable, but there are also a number of emergent global players. There are also more interconnections today and developments in one category of WMD can therefore have implications for the others. For example, failure of the NPT could have repercussions for the BWC and CWC.

Following the successful conclusion of the CWC negotiations in 1992, the world has witnessed a period of rollback in verification and transparency with the collapse of the BWC protocol negotiations in 2001, the absence of CTBT entry-into-force and the inability of the Conference on Disarmament to agree on its agenda. New instruments such as PSI have been established partly because the current infrastructure is thought not to be capable of dealing with the threats it faces. However, they raise problems of institutional compatibility and the risk of duplication. While such efforts can make useful contributions to international norms, there is also the risk that they will do more harm than good by undermining existing international law. In contrast, multilateral approaches have the advantage that they create solidarity around a norm and cast their net as widely as possible in terms of membership. Increased synergies need to be found at different levels; such synergies could be both vertical (between the regional, sub-regional and international levels) and horizontal (between different categories of WMD). There is a need to reform and modernize multilateralism but much depends on the success or failure of UN reform and the forthcoming World Summit.

The military assessment of the use of CB weapons, the intelligence regarding an opponent's capabilities and the scientific aspects of CB weapons have often led to completely mistaken assessments of the threat posed by such weapons. Misunderstandings and misinterpretations have occurred so frequently in the past that extreme caution should be taken when presenting new intelligence data or when using the data for justifying any action to counter the supposed threat. Over the past 100 years, both the scientific community and military analysts have often wrongly assessed the capabilities of CB weapons but the intelligence community has most often provided unreliable information. Evidence for this view can be gained from studying many past CB incidents and developments from the First World War until the US-UK invasion of Iraq. In the First World War, the Western Allies were taken completely by surprise by the use of chemical weapons by Germany in 1915. Later in the war, Germany itself was surprised by the speed at which the UK was able to duplicate its own development of mustard gas. Similarly, during the Second World War the Allies assumed that Nazi Germany was developing biological weapons and undertook their own research and development programmes, although after the war it became clear that Germany's activities had been very limited. In contrast, intelligence information received in the UK about the development of nerve agents in Germany dismissed as Nazi propaganda whereas several thousands of tons of sarin and tabun were weaponised by Germany, as the Allies later discovered. Further incidents occurred during the Cold War, such as the USSR's covert biological weapons programme after it signed the BWC, the largely discredited 'Yellow Rain' allegations in Southeast Asia in the 1980s and the use of chemical weapons in the Iran-Iraq war.

One potential problem relates to the non-discovery of chemical or biological weapons in Iraq following the invasion in 2003 by US and UK forces. While many observers expected the invading forces to find stockpiles of such weapons, this was unlikely given Iraq's concept of use for CB weapons. Unlike Western and Eastern states during the Cold War which stored large stockpiles ready for use as retaliatory weapons, Iraq had no need for CB weapons for retaliation in kind or deterrence. Instead, Iraqi chemical agents were produced for immediate filling into munitions and use, to avoid stability and storage problems. Iraq therefore, did not

require large stockpiles of weapons, but instead it needed a mobilization capability that could be called upon whenever required. This approach was particularly appropriate for Iraq when it was under ongoing UNSCOM monitoring and verification as the necessary equipment could be concealed within its legitimate chemical and biological industries. There was no need for Iraq to risk the covert production of CB weapons as it could be discovered by UNSCOM inspectors and result in Security Council action, instead production could recommence at a later date once the UNSCOM regime had been discontinued and CB weapons were again needed.

The Iraqi concept of a mobilization capability bears some similarities to the USSR's development of a vast biological weapons mobilization capability under the cover of a legitimate dual-use biological concern called 'Biopreparat'. Under this system, which was occasionally exercised, the USSR was able to produce biological agents if required, rather than having to maintain stockpiles and filled weapons. By operating a mobilization capability concealed within its legitimate dual-use industry, a state can avoid the problems associated with the stability and storage of CB agents. Additionally, this approach means that there is no stockpile to unequivocally demonstrate non-compliance with the BWC or CWC. Because storage and stability are no longer so important, a state could also use different chemical and biological agents to those traditionally regarded as viable weapons by states primarily interested in a retaliatory or deterrent capability. This potential extension to different CB agents underlines the importance of the of BWC and CWC general purpose criteria which ensures the prohibition of all past, present and future agents.

### **Emergence of international terrorism**

During the 1990s, there was a growing awareness of terrorist interest in CBW, even before the end of the Cold War it was acknowledged that terrorist use of CBW was possible and worthy of exploration. However, awareness was raised to a much higher level by the Aum Shinrikyo nerve agent attacks in Japan in 1994 and 1995 and the cult's earlier failed attempts to use BW. From being seen as a rather exotic threat in the 1990s, the perception of CB terrorism has now become mainstream and an element of inevitability has permeated the debate. In fact, much of the literature cites without question sources that state it is not a question of 'if' terrorists will use chemical and/or biological weapons but 'when'. Such statements have been made by senior officials and politicians in numerous countries and international organizations. These statements often attract substantial media attention, while more sober assessments are confined to the inside pages of newspapers, if mentioned at all.

It would be dangerous and foolish to discount entirely the threat posed by CBW terrorism, as the information available is enough to warrant serious concern about terrorist interest in CB weapons. Those in charge of defending against the use of CB weapons should not be ignorant of the threat or become apathetic about the risks simply because little has occurred since 9/11 other than the anthrax letter attacks during the following month. However, it is also necessary to challenge the predominant opinion that terrorists will use such weapons in the future. The current debate is marked by a technologically deterministic approach: chemical and biological weapons exist; terrorists wish to have such weapons; much of the knowledge, materials and equipment required is dual-use; terrorists will get access to the materials and equipment; terrorists will use such weapons. This could become a self-fulfilling prophecy if adequate safeguards and prevention measures are not put in place.

One way in which to assess the current and future threat posed by CB terrorism is to take account of past experience which seems to show little increase in the actual number of incidents. While limited evidence for terrorist interest in CB weapons exists, this is not the same as successful use of such capabilities by terrorists. Indeed, the evidence suggests that the current threat is based on fairly basic and crude weapons. There have been few examples of the successful use of CB weapons (the 1995 Tokyo attack and the 2001 anthrax mailings are the most well-known), more common have been unsubstantiated threats, unsuccessful attempts at acquisition and limited possession of certain CB weapons. Suggestions that the attempted, unsuccessful use of CB weapons might be becoming the most common outcome are so far contradicted by the apparent lack even of ineffective "copy-cat" repetitions of the anthrax letter attacks. To date, successful use has been the exception rather than the rule. Most clearly, past experience demonstrates that the threat has not yet entered the realm of mass destruction. Any assessment of the threat and risks involved should therefore not be blinded by hyperbole.

A number of lessons can be learnt from past experience. First, that the most significant challenges for the immediate future are at the lower end of the CB spectrum. The criminal or terrorist use of sophisticated CB agents has been exceedingly rare, most incidents have involved the use of 'everyday' chemicals and other materials that are widely available in industrial, academic and other facilities. The second lesson is that there is an opportunity to thwart or delay the development of more sophisticated capabilities. Evidence from state-level programmes and the available evidence on terrorist activities and capabilities suggests that technical barriers to development, production, dissemination and/or use remain significant and, possibly more important, that various constraints may have prevented any really determined effort to acquire such weapons from materializing. For such reasons, conventional weapons are likely to remain the weapon of choice for terrorists. Third, the threat itself is dynamic. International counter-terrorist efforts since 9/11 have reduced the safe havens, time, networks, freedom, access and surprise which would be essential to a group trying to develop sophisticated CB capabilities. Fourth, it has been recognised that benefits can be gained from 'dual-use' measures that both help prevent terrorism and benefit society on a daily basis such as improvements to public health systems.

These lessons raise a number of difficult questions. For example, should those interested in seeing improved defences turn a blind eye to the hype and accept that it actually contributes to the willingness of government to devote major resources to support their work? Similarly, should those interested in strengthening the BWC and CWC infer that terrorist threats are of secondary importance to state-level threats and risk losing influence in the policy-making process, or should they exploit the possibility of CB terrorism as a means to strengthen the treaties and supplemental measures? Finally, in providing a more accurate risk assessment is it wise to draw attention to the vulnerabilities of industrialised societies by emphasis on worst-case scenarios?

## **Measures for averting the danger**

### *The overall array: current strengths and weaknesses*

The existing measures constitute an array of national, bilateral, cooperative, regional, multilateral and global measures that includes: preparedness; technological protection and other means of national defence; intelligence capable of providing early warning of any need for active countermeasures; penal legislation and administrative regulation; export controls; and the international anti-CBW treaty regime. There is mutual reinforcement among different

parts of this array. The treaty regime does this by reaffirming the ancient taboo against CBW use, by asserting a norm of abstention from CBW armament, by making it difficult for the international community to disregard transgression, by providing a nucleus for international action in support of regime goals, and, in consequence, by deterring/dissuading potential violators.

There are many current approaches outside of the BWC and CWC but complementary to them, for example the Australia Group, PSI and UN Security Council resolution 1540. Many of these are what could be described as 'operational' groups and have been contrasted with multilateral treaties which often lack provisions for operational assistance and activities. There is a need for coordination among all of these different initiatives and between the 'traditional' actors and the newer 'operational' groupings. There are instances of emerging synergies, for example the Director-General of the OPCW has briefed the 1540 Committee in New York and the OPCW has developed links with the Organization of American States and the African Union, the WHO has a unit on deliberate disease and Interpol is raising awareness of the bioterrorism threat within the law enforcement community. Such synergies would appear useful and should be encouraged, as long as they do not conflict with the underlying principles expressed in treaties such as the BWC and CWC; these synergies and initiatives should complement the treaties, not displace them. One notable gap at the current time appears to be a forum in which to discuss and coordinate these initiatives.

### **Future challenges to the CWC regime**

Scientific progress and geopolitical change have implications for the evolution of the CWC but the valuable international cooperation against CW established by the CWC was under threat from four different directions. One of these can be traced back to the first use of CW in Belgium in April 1915. The weapon chosen then was chlorine, of which Germany was the predominant producer as it was the bedrock chemical in a sector of Germany's manufacturing industry. This was the first large-scale example of the duality of chemicals; that they can have both a peaceful side and a weapons side. The procedures by which the CWC reassures its member states that none of them are abusing their dual-use chemical industries for covert CW development are the primary value of the CWC. The second threat that the CWC faces stems from new utilities for chemical weapons which are emerging from the changing nature of warfare. Whereas in the 'old wars' of the 20th century the utility of CW was set by their competitiveness with conventional weapons, in the 'new wars' which have become a feature of the 21st century their utility is set by their simple accessibility and capacity to terrorize. Industrial accidents such as that in Bhopal in 1984 which killed 4,000 people and injured 203,000 have demonstrated the terrible harm which can be caused by toxic industrial chemicals (TICs), and have given rise to concerns about the vulnerability of chemical industry to sabotage.

The third challenge facing the CWC is the proliferation of chemical-warfare technology to states outside of the old NATO and Warsaw Pact blocs. Whereas it was initially assumed in the West in 1983 that Iraq had acquired its CW from the USSR, it was a shock to discover that Iraq had actually produced the chemicals out of precursors purchased mainly in the West and in India, and had bought chemical plant from the West. CW proliferation was well and truly underway, and the realization of this was a major factor in the completion of the CWC negotiations in 1992. To date, the surprisingly large number of 13 CWC states parties have declared recent CW capabilities. The fourth challenge to the CWC comes from the emergence of a new attraction to CW as an anti-terrorist weapon. The clearest example of this trend so far was the employment, in October 2002, of an opioid formulation based on fentanyl as a 'non-

lethal' weapon by Russian special forces rescuing hostages from a theatre in Moscow. Both the UK and USA have also been studying similar 'non-lethal' chemical weapons for decades, and neither criticised the use of fentanyl by Russia. Fentanyl also offers a further illustration of dual use, as such chemicals have widespread use as surgical anaesthetics.

On 29 April 2007, the CWC will reach the tenth anniversary since its entry into force and the establishment of the Organization for the Prohibition of Chemical Weapons (OPCW). Disarmament and non-proliferation activities take up over 80% of the OPCW's verification effort. Around 15% of the declared CW stockpiles have been destroyed which, while impressive in terms of tonnage, is less impressive when considered against the interim destruction deadlines and the final deadline of April 2012. The possessor states are at different stages in their campaigns. India was described as exemplary and a state which has chosen not to have its identity revealed is getting there. Of the newcomers, Albania has not yet started destroying its small stockpile, while Libya is about to start. However, destruction activities in the two states with the largest stockpiles, Russia and the USA, are a different story. Russia is lagging behind and needs encouragement to move forward and commit more resources, although there is no doubt about the political commitment of the Russian authorities. In the USA, 75% of former CW production facilities have been closed or converted. The US Congress has recently expressed its concern that the USA meets its CWC deadlines. However, the question remains of what can be expected from the other possessor states, if Russia and the USA do not meet their deadlines?

The OPCW is also exploring ways in which to optimise the resources it expends on the verification of destruction with the aim of covering more facilities with the same resources. The OPCW has recently introduced the concept of 'on-call' inspectors who are not based in The Hague allowing the Organization to save 40% on the cost of a full-time inspector. The contracts are being offered to retiring inspectors but only for inspections to verify destruction. In terms of non-proliferation and non-diversion of CW, the OPCW has continued to conduct inspections at facilities working with scheduled chemicals. States parties have also declared about 4,500 'Other Chemical Production Facilities' that work with discrete organic chemicals. Altogether, about 5,000 facilities have been declared under Article VI. The verification regime is very much driven by declared chemicals and the schedules. Indeed, some states parties and elements of the chemical industry claim that the 'general purpose criterion' does not exist and that the CWC should remain so weighted. However, such an approach risks the CWC becoming a treaty solely about scheduled chemicals and thus becoming obsolete. Therefore, there is a strong argument for more resources to be directed towards OCPF inspections, despite the objections of developing countries. In fact, the burden of OCPF inspections falls most heavily on Western Europe and China. To ensure the credibility of the CWC's verification regime, there needs to be a broader base of facilities covered by it. The OPCW has also decided to begin repeat inspections of Schedule 3 and OCPF facilities at a rate of 5%. Such measures will contribute to maintaining the CWC's credibility as a barrier against breakout and covert mobilization capabilities.

The landscape of the chemical industry has changed totally since the CWC was negotiated in the 1980s and early 1990s. For example, the definition of a plant has changed utterly since that time. The OPCW Technical Secretariat and states parties need to work out a modus operandi to address this changing landscape. One crucial element is continued training and updating of the Secretariat's staff, particularly its inspectors. The OPCW needs to retain the ability to carry out challenge inspections. Although challenge inspections were included in the CWC, they have now entered the realm of the abstract, the political and the ideological and they are



becoming intangible through lack of use. The Secretariat is committed to retaining the credibility of challenge inspections, while also avoiding their use as political instruments. In a recent surprise table-top exercise, the Secretariat managed to get 12 inspectors en route to the designated site within 24 hours and another 20 inspectors ready within 48 hours.

Efforts to achieve universality have come a long way with the number of states parties increasing from 87 at entry into force of the CWC in April 1997 to 167 in April 2005. The OPCW needs to achieve CWC universality not just in terms of pure numbers, but also in terms of quality. In other words, states do not only need to sign up to the CWC, they also need to implement it properly. There is also the need to get on board those states suspected of having CW programmes and those remaining outside for financial or resource reasons. The Middle East is a key area, but cooperation is also being pursued with regional organizations such as the Organization of American States and the African Union. The situation is changing in the Middle East and Iraq is expected to join the CWC sometime in the near future. However, attempts to establish contacts with North Korea have not been reciprocated.

The absence of national implementing legislation in many states parties is more dangerous. Some countries think that ratifying or acceding to the CWC is the end of their obligations, but in fact much more needs to be done subsequent to joining the treaty. Almost 60% of states parties have not implemented fully effective national legislation. The OPCW has recognized national implementation as a priority and it was decided to take stock of progress at the 10th session of the Conference of the States Parties in November 2005. Both the Technical Secretariat and states parties have been undertaking assistance visits to states parties on a regional and bilateral basis. At this stage, it is clear that the November 2005 review will not be the end of the national implementation action plan and that ways are needed in which to take it forwards.

While the OPCW should continue to watch state CW programmes, it also needs to recognize the threat from terrorist use of CW. There is a need to remain vigilant on the state front as history has shown that states can rapidly become unstable. Addressing chemical terrorism is difficult but not impossible. For example, effective national implementation can help states move pre-emptively against terrorists. It is likely that in the event of a chemical attack by terrorists, the OPCW would shy away from a visible role and instead facilitate and investigate. UNSCR 1540 has extended the requirements of the CWC to all UN member states, not just those that have joined the CWC. Obligations on states under UNSCR 1540 and the CWC are convergent. The OPCW has been cooperating with the Security Council's 1540 Committee.

Once the CWC has achieved universality and once the OPCW has monitored the destruction of all CW stockpiles, will inspections still be needed? Will states parties still be willing to contribute financially to the treaty and will they still be willing to host intrusive inspections of their chemical industry? Perhaps states parties will decide that a challenge inspection mechanism is enough. However, it is likely that states parties would be rather more cautious. There is still not total trust among states parties in the accuracy of declarations submitted by certain other states parties and it is therefore likely, even after CW stockpiles are destroyed, that some ongoing verification would still be needed. As it is, the CWC is still a long way from being implemented fully by all of its states parties and recent history includes examples of countries cheating despite being members of other treaties, for example Iraq and North Korea in the NPT. In addition, the CWC gives states parties the right to withdraw, so there is always the possibility that a state will develop a CW capability and withdraw from the treaty.

## **Prospects for the BWC**

In late 2006, states parties to the BWC will gather in Geneva for the treaty's 6th Review Conference. However, planning and preparation for the Review Conference should not be left until too late. The BWC and CWC have different preparatory mechanisms for their respective review conferences. Due to the existence of the OPCW, states parties to the CWC established an open-ended working group in The Hague to prepare for the 1st CWC Review Conference in 2003. In contrast, prior to its review conferences (of which there have so far been five), states parties to the BWC meet as a Preparatory Committee for a week in Geneva about eight months prior to the Review Conference. Both procedures have their advantages and disadvantages and it is highly unlikely that either will be changed. The upcoming 6th BWC Review Conference will meet in the shadow of the controversial 5th Review Conference which was the first BWC review conference to fail to agree a Final Declaration. Some would see a similar failure at the 6th Review Conference as seriously damaging to the BWC, while others would consider a minimal Final Declaration as a more realistic prospect, perhaps including some practical steps to improve BWC implementation.

Such steps could include a mechanism to address the BWC's long-standing institutional deficit, perhaps through the establishment of a small secretariat. The BWC's institutional deficit and the failure of the BWC Protocol mean that there are no contact points at either a national or international level for the BWC. Another possibility could be paying renewed attention to the Confidence-Building Measures (CBMs) which were largely neglected during the 1990s and perhaps even introducing the idea of voluntary visits between states parties to clarify information in each others' CBM returns. Steps that could facilitate a successful 6th Review Conference need not be limited to those undertaken by states parties. Civil society has played a useful role in the past in providing occasions for states parties to come together and informally discuss ideas. During the BWC Protocol negotiations, meetings organized by NGOs allowed states parties to try out ideas, and drop them if necessary, and offered some of the few opportunities in which representatives of opposing sides in the negotiations could informally discuss their differences. Civil society has played a similar role in the preparatory phase prior to NPT review conferences. In the run-up to the 1st CWC Review Conference, the OPCW's Scientific Advisory Board encouraged the International Union of Pure and Applied Chemistry (IUPAC) to undertake a study of relevant scientific and technical issues.

BWC states parties also need to address the question of what constitutes compliance with the BWC. While a state party's obligations under the CWC are relatively clear, and the OPCW has developed checklists for states parties explaining what the CWC obliges them to do, the situation with regard to the BWC is less clear and there is no agreement on the key obligations that states parties are required to fulfil. Due to the BWC's institutional deficit, there is no secretariat which can advise states parties or provide them with assistance in complying with the treaty. In recent years, more states parties have been undertaking bilateral assistance missions and UNSCR 1540 has raised awareness about states' obligations under the BWC. However, it is difficult to set pass/fail questions for national obligations under international treaties, for example how to be sure that a state is "prohibiting and preventing" BW. But there are likely lessons for the BWC to be learnt from the OPCW's experience in advising states parties on complying with the CWC.

There exist other tools alongside the BWC for dealing with the threat of biological weapons, for example the Australia Group, the WHO's International Health Regulations, UNSCR 1540 and so on. In a similar way to a state which has developed a series of measures to fulfil its

BWC and CWC obligations, so the international community has developed different instruments for implementing the treaties at the international level. However, it would be useful if all of these efforts could be discussed and coordinated in an appropriate forum. Is the BWC Review Conference such a forum? There would appear to be a need for an international forum in which biological security issues can be discussed. In some respects, that seems to be the way in which the BWC has gone over the past three years with the inter-sessional meetings of states parties. But it can also be argued that a new forum is needed that is more concerned with and able to take decisions upon 'operational' aspects than the BWC which is mainly concerned with establishing a norm. One possible option for overseeing the coordination of 'biological security' efforts could be the UN Security Council, which has taken a much greater role in non-proliferation with the adoption of UNSCR 1540.

### **Prospects for UN Security Council resolution 1540 (2004)**

On 28 April 2004, the UN Security Council adopted resolution 1540 on the non-proliferation of nuclear, biological and chemical weapons to non-state actors. This represented the Council's first action on WMD proliferation since the presidential statement issued by its first ever meeting at heads of state and government level in January 1992. The resolution requires that all states "refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery." In order to enforce this prohibition, the resolution requires states to "adopt and enforce appropriate effective laws" prohibiting non-state actors from committing such activities and requires them to "establish domestic controls to prevent the proliferation of nuclear, chemical, or biological weapons and their means of delivery." The resolution also establishes, with a two-year mandate, a committee to report to the Council on its implementation. States were required to submit reports on their implementation of the resolution to this committee by October 2004.

There are a number of ambiguities contained within the resolution as well as language which is open for interpretation. The resolution does not contain a minimal standard defining what is meant by "appropriate effective laws", so much will depend on how the 1540 Committee will evaluate the responses that it receives from states. Once the reports have been evaluated, new challenges will arise such as what to do if a state has the appropriate legislation but it is not implemented rigorously? Who can make this determination and on what grounds? Although the resolution was adopted under Chapter VII of the UN Charter (permitting punitive actions against states), it is highly unlikely that serious action would be taken against states for technical violations of the resolution. If enforcement action is required, it would seem necessary for a new decision by the Council.

Resolution 1540 can be criticised for the way in which it fails to mention measures which the Security Council had earlier described as cornerstones of the non-proliferation regime, such as the CTBT. Resolution 1540 also highlights an inconsistency in the Council's approach to non-proliferation, for example by failing to follow-up the provisions in resolution 687 relating to the creation of a WMD-free zone in the Middle East. While the Security Council clearly needed to take action to address WMD proliferation, the P5 used the opportunity to push their own agenda and embed their own view of non-proliferation. Therefore, while the resolution states that none of its obligations should be interpreted to conflict with the NPT, BWC and CWC, it does not contain an explicit link between non-proliferation and disarmament, particularly of nuclear weapons.

Resolution 1540 also calls upon all states to "to take cooperative action to prevent illicit trafficking". Some have taken this to be an implicit endorsement of the PSI, while others maintain their opposition to PSI. In addition to PSI, member states of the International Maritime Organization are currently negotiating a protocol to the 1988 Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation (the SUA Convention) which would criminalize the transportation of nuclear, biological and chemical weapons. Like PSI, this is an attempt to close what has been recognized as a loophole in the international non-proliferation regime. A diplomatic conference is due to meet in October 2005 in London to finalize the negotiations. However, some see the protocol as an attempt to legitimize PSI.

### **The biological and chemical recommendations of the UN High-Level Panel**

In December 2004, the United Nations Secretary-General's High-Level Panel on Threats, Challenges and Change published its report, *A More Secure World: Our Shared Responsibility*. Subsequently, in March 2005, the Secretary-General published his response to the panel's report, *In Larger Freedom: Towards Development, Security and Human Rights For All*. Both reports contain a number of recommendations relating to the BWC and CWC. With regard to the CWC, the focus of both reports is on achieving universality and completing the destruction of CW stockpiles within the deadlines specified in the CWC. The references in the reports to CW destruction were optimistic given the realities of the destruction programmes in Russia and the USA. The Secretary-General's report recommended strengthening his authority to investigate the suspected use of biological agents and it has been suggested that UNMOVIC could play a useful role in this regard. The reports both also recommend that the UN Security Council invites the Directors-General of the IAEA and OPCW to regularly brief it on the status of safeguards and verification processes. The absence of a similar suggestion for the BWC was noted, and perhaps, if the 6th Review Conference took action to address the BWC's institutional deficit, the President of the Review Conference could perform a similar role for the BWC. However, the concept of the Directors-General reporting to the Security Council was not uncontroversial. Some NAM countries are opposed to the idea, arguing that the Director-General of either organization does not have the authority to describe and decide on what constitutes a threat to or a violation of a treaty. Such a decision can only be taken by the whole membership of the organization.

Some of the recommendations in both reports relating to the role of the World Health Organization (WHO) could be seen as verging on dangerous ground because they ran the risk of politicizing the WHO and undermining its independent role in assisting all states to counter the spread of disease. In addition, the recommendations make no mention of the parallel organizations dealing with plant and animal health. Furthermore, suspicious outbreaks of disease can be a weak detector of a covert BW programme. For example, despite its size and duration the former Soviet BW programme only had one major accident at Sverdlovsk in 1979. However, there are also reasons to support WHO involvement, not least that disease outbreaks are now seen as threats to international security. The report of the High-Level Panel called for BWC states parties to return "without delay" to negotiation of a "credible verification protocol", a recommendation which could rekindle acrimony at the 6th Review Conference if brought up there. The report also recommends that states parties negotiate a new bio-security protocol, although it was not clear how this fitted with the recommendation to return to negotiating a verification protocol, and a better forum for such initiatives on bio-security might be the Convention on Biological Diversity.

## **International law beyond arms control**

The Harvard Sussex Program has developed a proposal for the international criminalization of CBW that would establish jurisdiction in national courts over persons present in their territory for the adjudication and punishment of certain offences wherever such offences are committed and regardless of the citizenship of the offender. Such a proposal would address loopholes in the existing regimes, including limitations on the scope of existing jurisdiction of the courts of most nations, even those that have enacted legislation as required by the CBW conventions and Security Council resolution 1540.

## **Future initiatives and policy options**

Areas for closer study and further discussion in future identified at the workshop included: a) measures to sustain and reinforce the civilized norm against the use of disease as a weapon, especially including measures directed to the element of intent; b) criteria for determining the effectiveness of non-proliferation measures; c) the formulation of agreed and workable measures for increasing transparency; and d) the design and possible utility of new international criminal law.