

The Impending First CWC Review

17th Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions

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This was the seventeenth of the current Pugwash workshop series on chemical and biological weapons (CBW), held in collaboration with the Harvard Sussex Program on CBW Armament and Arms Limitation (HSP). Like the eight preceding workshops of the series held in the Netherlands, it was hosted by the Netherlands Pugwash Group. The Dutch Ministry of Foreign Affairs and the Dutch Ministry of Defense, as well as Blücher GrBH, a German chemical protection company, provided financial assistance for the meeting. The meetings were held at the Congresshotel Oud Poelgeest in Oegstgeest, The Netherlands.

Participating by invitation were 35 people from 13 countries (Australia, Belgium, Cuba, France, Germany, Italy, Mexico, The Netherlands, Poland, Russia, Sweden, United Kingdom, and the United States), all of them doing so in their private 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.

The workshop focused on the First Review Conference of the 1997 Chemical Weapons Convention (CWC), which is scheduled to begin in less than a year's time on 28 April 2003. Under the Convention, a special session of the Conference of the States Parties (known as a Review Conference) must be convened prior to the expiry of the sixth year after entry into force, which was 29 April 1997. A review process to prepare for the Review Conference was launched by the Technical Secretariat of the Organization for the Prohibition of Chemical Weapons (OPCW) in January 2002. Much of the review is being conducted and coordinated by an Open-Ended Working Group on Preparations for the First Review Conference (WGRC) established by the OPCW Executive Council in September 2001. The objective of the first review conference is to review the operation of the CWC and any developments in science and technology that may impact CWC implementation. The review process currently underway will help the OPCW to achieve this goal. To this end, both the states parties and the Secretariat are preparing papers for the WGRC to examine, as is the Scientific Advisory Board (SAB), in coordination with the International Union of Pure and Applied Chemistry (IUPAC).

After reports on the general status of the CBW treaties, workshop participants devoted discussion to a number of issues/topics impacting upon the review: universality and emerging challenges, including terrorism, impact of relevant developments in science and technology, ensuring non-proliferation, verification in general, national implementation, assistance and protection and international cooperation, effectiveness of the OPCW structure, the contribution

of non-governmental organizations (NGOs), and the general effectiveness of the review. These categories corresponded roughly with clusters of issues important to the review established by the WGRC at its first meeting in November 2001. Also considered by the Study Group was the important work of counteracting biospecific terrorism and future work of the Study Group itself.

Reports on International CBW Activities and Initiatives

BWC: Progress in Implementation

With respect to the Biological and Toxin Weapons Convention (BWC), the last six months were marked by the failure of the states parties to adopt any measures to strengthen the BWC regime. The Study Group was informed that the rejection of a draft verification protocol for the BWC was a missed opportunity that will have lasting consequences for biological weapons disarmament efforts.

In March 2001, the chairman of the Ad Hoc Group, which was mandated to negotiate a protocol, presented a draft composite text to the states parties. The text was more than 95 per cent agreed language and contained all the key elements of an effective verification regime for biological weapons. However, at the twenty-fourth session of the Ad Hoc Group in July 2001, one state party, the United States, repudiated the approach taken by the draft protocol, stating concerns of its effectiveness in “catching cheaters” and the impact such verification would have on the pharmaceutical and biotechnology industries. Despite international attention after the events of September 11th and the anthrax attacks in the United States, the U.S. position on the protocol did not change. In November 2001, when the fifth review conference of the BWC first convened, there was a lack of political will to conclude a protocol in the absence of U.S. support and no agreement was possible on other measures, such as the establishment of interim supportive institutions. The United States used the forum of the fifth review conference to “name names” of those countries it thought had biological weapons programs, or weapons capabilities, in violation of the BWC. The consultation procedures under Article V of the Convention were designed to handle such allegations. The fifth review conference was forced to adjourn, and will reconvene on 11 November 2002. Meanwhile, the states parties were encouraged to make proposals on ways to strengthen the BWC short of a protocol.

The United Kingdom released a “Green Paper” containing proposals on how to strengthen the BWC in April 2002. It suggests mechanisms for investigations of non-compliance, assistance in the event or threat of use, and national criminal legislation to implement the Convention, as well as a scientific advisory panel to assess developments in science and technology that impact on the Convention, an expanded system of confidence-building measures (CBMs), standards for the physical protection of pathogens, increased disease surveillance, a code of conduct for academic and professional bodies, and the universal criminalization of CBW offences.

The U.S. concerns over the weakness of the draft protocol and its burden on industry were largely unfounded as the protocol’s aim was not to “catch” cheaters but rather to demonstrate compliance, build confidence among states parties, and deter potential violators of the BWC. U.S. industry would have been subject to a maximum of seven inspections per year of declared facilities; the FDA does thousands. Inspections of industry under the CWC verification regime have proven that confidential information and information relevant to national security can be adequately protected.

States parties with concerns over the effectiveness of the BWC, with or without a protocol, were encouraged to utilize the consultation procedures and the system of CBMs already provided for. Also, there was a need for better preparation on the part of the states parties, who could use the fifth review conference in November as a forum in which to reaffirm the international norms against biological weapons. If there is no consensus, the states parties should be prepared to take any motion to a vote, rather than allow one or more states parties to block action. States parties in support of a strengthened BWC, and who did support the draft protocol, should make a renewed commitment to a positive outcome for the November 2002 review conference.

The Study Group also heard about the efforts of other organizations to take up where the Ad Hoc Group was forced to leave off in December 2001. The International Committee of the Red Cross (ICRC) was one such organization very concerned about the failure of the BWC states parties to adopt a verification protocol. As biotechnology advances, the ability to address such innovation within the current BWC regime diminishes greatly. As the guardians of international humanitarian law, the ICRC felt a responsibility to prevent the erosion of moral and ethical norms against biological weapons and to work therefore to strengthen international efforts in support of the BWC. To this end, the ICRC was working on a declaration on “biotechnology, weapons, and humanity”. It hoped to convene a meeting of government representatives to discuss this subject and decide on action prior to the November 2002 resumption of the fifth review conference of the BWC. Another program in the process of being established is a biological weapons monitoring group, which is a group of responsible NGOs that are looking to step in where governments have failed and work toward the implementation of a verification mechanism for the BWC.

Lessons to be had from the experience of BWC review conferences, for the first CWC review conference, include the need to focus on key issues and engage in extensive planning and preparation; the outcome of the Conference must be agreed.

The Study Group was, however, warned against drawing too many parallels between the fifth review conference of the BWC and the first CWC review conference, as they are different instruments, designed with different intentions and in different international environments. The CWC review conference would seek to adjust an already existing and functioning verification regime, while the BWC review conference was asked to adopt one. The Study Group also explored the role of verification in inspiring greater confidence in a treaty regime. Verification should decrease the confidence of violators that they can work in secret, thus deterring violations of the convention in the first place. Any BWC protocol must therefore, first and foremost, serve as a deterrent.

NATO Longterm Scientific Study (LTSS)

The Study Group received a presentation on the results of a 3-year NATO study on chemical and biological defense. This study looked at a number of issue areas: evaluation of the hazards and NATO’s ability to respond, effect levels, detection, physical protection, medical countermeasures, contamination control, training, and CB terrorism (which was added to the study only after September 11th).

The study highlights the threat posed by the increased potential for new, possibly more virulent, biological agents as a result of developments in genomics and proteomics. There is also a potential threat from hidden stocks of biological weapons or agents in states both party and not

party to the BWC. Both of these aspects create unknowns with regard to the effect of and response to a chemical attack. A wider range of detection methods should be developed, including generic detection, which would allow the detection of many agents with a single procedure or mechanism. There was also a need for multivalent or generic vaccines that counteract a variety of biological agents instead of a vaccine targeted to one agent or virus. Radical new approaches to therapy must be developed in order to respond to genomic or proteomic agents. On the question of contamination, the question is “how dirty is clean enough?”—new decontamination techniques will be explored. Prior to September 11th, chemical and biological terrorism was not considered a military problem in the context of NATO; however with Article V (collective response) enacted, NATO must take the “war against terror” and the potential use by terrorists of chemical and/or biological weapons into account. In the study, it was concluded that a “web of deterrence” is of utmost importance, because, particularly with biological weapons, the development of reliable defense technology is unlikely.

The results of the NATO LTSS are a NATO unclassified document and will be released officially in 2003. Participants in the LTSS plan to evaluate progress and research biannually.

Progress in Implementing the CWC

On 29 April 2002, the OPCW marked the fifth anniversary of the CWC. Looking back over five years, the CWC has both met with great success and encountered serious difficulties. The OPCW has overseen the destruction of 10 percent of the declared stockpile of chemical agents, and 24 percent of the declared stockpile of munitions and containers. Both India and the United States have met the deadline to destroy 20 percent of their Category 1 chemical weapons. Russia and another state party of withheld identity have both submitted requests for the extension of their destruction deadlines. All states parties in possession of Category 2 and 3 chemical weapons have met the deadline to destroy 100 percent of their stockpiles, which coincided with the fifth anniversary. All states parties that declared chemical weapons production facilities met the deadline to destroy 40 percent of their production capacity. Difficulties previously encountered during the conduct of inspections at certain Schedule 2 facilities have been resolved bilaterally.

In both the United States and Russia destruction activities are increasing their pace and many facilities are scheduled to come on-line in the forthcoming year, including those at Aberdeen and Umatilla in the United States and Gorny in Russia. These developments will necessitate a larger budget for verification activities, such as continuous monitoring of chemical weapons destruction facilities (CWDFs). The number of CWDFs being monitored is expected to increase from one to five in the course of 2003. Furthermore, the Technical Secretariat is looking to re-examine, as part of the review process, inspection methodologies under Articles IV, V, and VI. The midterm plan for 2004-2006 foresees as many as 12 fully operation CWDFs by 2006, which will then necessitate even larger amounts of time spent on continuous and on-site monitoring inspections and even larger budget increases. Changes may also be imminent for the industry inspection regime under Article VI, including lower frequencies of inspection for Schedule 1 and 2 facilities. The emphasis will instead shift to Schedule 3 and DOC facilities and/or plant sites; this trend is already reflected in the draft 2003 budget. However, there will be a need to establish a new mechanism for the selection of sites/facilities for inspection, keeping in mind the type of facility and geographic distribution.

Progress has been achieved in the resolution of unresolved issues related to Article VI, such as boundaries of production and captive use, aggregate national data, low concentrations of Schedule 2A and 2A* chemicals, and the selection of other chemical weapons production facilities (OCPFS, i.e. DOC/PSF) for inspection. However there is a worrying lack of progress concerning the issue of transfers of Schedule 3 chemicals to states not party to the Convention, and whether or not to impose a trade ban; it is thought that the states parties will only be able to agree to some measure short of a total ban. The Technical Secretariat of the OPCW has been doing research into the under-declaration or non-declaration of declarable industrial facilities; using open-source public information, 44 such facilities were identified. The states parties involved have been contacted and were appreciative of the Secretariat's assistance.

Programming in the area of international cooperation and assistance had been severely affected by the cash deficit, but results have been achieved nonetheless. In 2002, two meetings were held for regional National Authorities, in Slovakia and Brazil. Also in Brazil, there was an international meeting on assistance and protection. The annual National Authority Day meeting is scheduled to take place in the fall, as are basic and advanced training courses for National Authority personnel. The Technical Secretariat is planning a major exercise on the delivery of assistance, to take place in Croatia in November. The third annual Associate Programme will begin in July 2002, this time with the support of a chemical company in Italy, in addition to the University of Surrey, United Kingdom, and chemical companies in Belgium, France, and the Netherlands.

Although no states have become party to the CWC in 2002, the Technical Secretariat continues to pursue universality, through a regional approach and bilaterally. In addition, there was a need to reevaluate the public outreach strategy of the OPCW.

Since January 2001, the OPCW has been experiencing a severe cash flow problem, which has reduced program delivery (including inspections) by as much as 50 percent. The funding of programming has been prioritized based on the CWC mandate, with the monitoring of the destruction of chemical weapons taking precedence. There has been a marked reduction in the inspection of chemical weapons storage facilities (CWSFs) and in industry inspections; in 2002, there will be only between 45 and 50 industry inspections rather than the 132 originally planned. The financial crisis first arose most directly from discrepancies in the income budgeted and that received in reimbursements for the costs of Article IV and V inspections. The reasons for this are varied, including late or non-payment by the states parties concerned and late invoicing by the Secretariat. New mechanisms are being explored to more accurately estimate the amount of income this area generates in any given year and for the payment of these funds, i.e. advance payments instead of reimbursements. As inspection activities in this area are expected to increase with the upsurge in destruction activities, action must be taken as soon as possible. The argument can be made that verification is being held hostage by the untimely payment of arrears and that perhaps it is time to question the possessor pays principle. Since verification provides confidence for all in the regime, should not all states parties fund these activities?

In addition to the financial crisis, there is a political crisis facing the OPCW in the form of a lack of Director-General. The first Director-General was voted out by a special session of the Conference of the States Parties in April 2002, citing a loss of confidence. It is hoped that a new Director-General will be appointed prior to the seventh session of the Conference of the States Parties in October 2002 and that both the Secretariat and the states parties can soon put

the financial and political problems behind them and focus on the critical issues, such as preparations for the first review conference.

HSP Draft Convention on CBW Criminalisation

As in previous workshops, the Study Group was provided an update on the progress achieved by HSP in promoting its draft convention on CBW Criminalisation, which aims to establish universal jurisdiction for crimes involving violations of the prohibitions contained in both the CWC and the BWC. States will have an obligation to either extradite or prosecute offenders no matter their nationality or where the crime was committed. This convention is a necessity given that only a minority of states are in full compliance with the legislative provisions of the CWC (Article VII) and the BWC (Article IV), and legislation, regulation, and penalties vary widely. Furthermore, the statutes of the new International Criminal Court do not provide jurisdiction over chemical and biological crimes. The two possible routes for the draft convention to take to become international law are the sixth committee of the United Nations or a separate diplomatic committee. Either action would immeasurably aid efforts to maintain the moral norm against chemical and biological weapons.

The draft convention text has already been discussed by the public international law working group of the EU, which has submitted it to the EU governments for consideration. The draft convention also merited mention in the April 2002 UK Green Paper on measures to strengthen the BWC. One important aspect of such a convention is that it will also criminalize the production, development, or use of chemical or biological weapons by states not party to the CWC or BWC, or their nationals, as well as by non-state actors. It will also cover riot control agents and other so-called non-lethal weapons, if they were used for prohibited purposes (i.e. warfare rather than domestic riot control).

Concerns were raised about the combining of chemical and biological crimes in one treaty and the lack of involvement by the OPCW in this project. The HSP draft does, however, aid efforts to harmonize international criminal law.

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Universality and Emerging Challenges

One of the major challenges for the CWC at the beginning of the twenty-first century is to reaffirm a commitment to its core mandate: to take all and any measures to eliminate all chemical weapons worldwide. Because today's international environment differs significantly from what it was when the CWC was negotiated (10 years ago) and first implemented (5 years ago), the OPCW (states parties and Technical Secretariat) must ask themselves what today's threats are and what resources are available. For example, as the threat of state use of chemical weapons decreases, the number of threats from non-state actors is increasing; the goal in 1993 was disarmament, the goal for 2002 may be considered non-proliferation.

Another example, is the obligation of the OPCW to respond to international terrorism and work towards the response to and prevention of acts of terrorism using chemical weapons. To this end, the OPCW Executive Council has established an open-ended working group on the role of the OPCW in international anti-terrorism efforts. Although terrorism is not explicitly mentioned in the CWC, many of its provisions—Article IV, V, VI, VII, X, etc—have direct relevance to efforts to combat terrorism. One measure that the Council has taken so far in this

respect is to adopt a decision on national implementation measures, stressing the need for every state party to criminalize chemical weapons offences in order to rid the world of “safe havens” for any potential violators of the Convention.

Universal adherence to the treaty, or universality, is one mechanism for helping to eliminate any safe havens for would-be violators of the Convention. Universality will also greatly aid efforts to ensure the non-proliferation of both chemical weapons and toxic chemicals and precursors. The OPCW, however, must be careful not to overemphasize the role of universality at the expense of key parts of the CWC mandate, such as the verification of destruction. There are a total of 49 states not party to the Convention, according to OPCW calculations, including 29 signatory states. The states that remain outside of the OPCW can be found in four main regions—Caribbean, South Pacific, Middle East, and Africa—and their reasons for not joining fall into a number of broad categories: unawareness of the treaty, infrastructural or economic deficiencies, a lack of the capacity to implement the Convention, government instability, or security concerns. Those states with the latter, found mainly in the Middle East, will not join until they perceive that the Convention is being implemented to its fullest and most complete extent, including full assurance of compliance by all states parties.

For those states outside of the Middle East, the OPCW can and should engage in programming and activities designed to encourage membership, including regional seminars and bilateral assistance meetings. The members of the Executive Council could be involved in a focused way to encourage universality, perhaps by working with states not party in their own region or with whom they have special relationships. One example is the recent EU practice of carrying out demarches in the capitals of states not party in support of CWC adherence. The Council could also help by adopting stricter controls on the transfer of Schedule 3 chemicals to states not party. Regional National Authorities as well as NGOs, activists, and academics within the states not party can also be encouraged to get involved in the universality efforts.

Impact of Relevant Developments in Science and Technology

The dominant issue when it comes to developments in science and technology are the great advances being made in biotechnology; science will not stand still and neither should the CWC. The Convention, under the general purpose criterion (GPC), defines a chemical weapon as any chemical intended to cause harm, thereby not limiting the application of the CWC provisions to Scheduled chemicals. This definition, which includes substances such as bioregulators, calmatives, maloderants, and other so-called non-lethal weapons, must be reaffirmed by the states parties during the review conference. Otherwise, there is a danger of an explosion of non-lethal weapon development by state actors—they could be viewed as an alternative to lethal weapons and may assuage public outcry over death tolls in conflict. It was also noted that if terrorists were to employ toxic chemicals they would most likely not use any found on the Schedules.

The CWC GPC also applies to toxins, and in the wake of the failure of states parties to adopt measures to strengthen the BWC, the CWC states parties should reaffirm the overlap between the two regimes and more assiduously apply the CWC provisions to toxins. Currently, only three toxins can be found on the CWC Schedules: hydrogen cyanide, ricin, and saxitoxin.

IUPAC and the OPCW SAB are preparing an analysis of scientific and technological developments. The results of the study will be released after an IUPAC workshop in Norway in July 2002.

For the OPCW, scientific developments may lead to more declarations, more inspections, and more expertise, meaning more activity and larger budgets. The states parties must be prepared to accept such a situation as inevitable.

Ensuring Non-Proliferation

Article VI of the CWC is dedicated to the non-proliferation of toxic chemicals and their precursors that could be used to manufacture chemical weapons. The mechanism it establishes to achieve this is the industry verification regime. Facilities that produce and/or consume Schedule 1, Schedule 2, or Schedule 3 chemicals are all subject to declaration and inspection procedures. There is an additional category of OCPFs (OCPFs), which must be declared and inspected. These facilities produce discrete organic chemicals (DOCs), and it is the concern that the facility itself could be diverted for prohibited purposes that justifies declarations and inspections. There are more DOC plant sites than Schedule 1, 2 and 3 facilities put together—more than 4,000 have been declared so far. The selection of DOC plant sites for inspection is an issue that merits serious attention. As does the over-inspection or non-inspection of Schedule 1, 2 and 3 facilities.

The trade in Scheduled chemicals is in need of more effective monitoring, and an effort is being made to correlate import and export data submitted by the chemical industry to National Authorities and reported to the OPCW. The states parties are also exploring issues related to the enforcement of the transfer bans on Schedule 1 and 2 chemicals and what restrictions to impose on the transfer of Schedule 3 chemicals, short of a ban.

As part of efforts to combat terrorism, the security of CWSFs and any other locations where chemical stockpiles are stored and/or present is being evaluated. Also, to ensure non-proliferation, the industry regime might at some point have to be expanded beyond the Schedules, beyond DOCs even, to capture all possible dual-use chemicals, processes, and equipment. Although, some participants felt that the addition of chemicals to the Schedules was counterproductive and/or that amending the Schedules is still a politically unthinkable action, and that the OPCW should rather expend resources on inspecting those facilities already declared.

Verification in General

The first topic taken up by the Study Group under this agenda item was an update on the issue of site access during industry inspections in the United States. According to the report, where there were previously problems, solutions have been found and the inspection of U.S. industry is proceeding smoothly. The main issue was access to the “plant”—location where activities involving Scheduled chemicals were taking place—versus access to the “plant site”—wider area in which the Scheduled chemicals were present. OPCW inspectors were granted full access to the plant, but were only permitted to inspect the perimeter of the plant site. Bilateral consultation resulted in inspectors being allowed to walk through the plant site, thereby avoiding any “ambiguities” in the final inspection report.

It was determined that the issue of plant or plant site delineation is one for the facility agreement, and therefore should not hamper on-site activities. It was also noted that document control has increased significantly since September 11th and that currently no documents are allowed to leave the inspected site.

It was noted during subsequent discussion that under the Convention, inspectors should be granted unimpeded access to the entire plant site and that a facility agreement is not necessary. The sort of managed access practiced by U.S. industry is not permitted; the Convention only provides for managed access to protect national security in the context of a challenge inspection. It is important to note that in order to achieve a level playing field within the industry regime; all states parties must be treated similarly.

The Study Group next considered the issue of boundaries of production within the context of declarations under Article VI. Related issues include the declaration of intermediates and the production of low concentrations of Schedule 2 chemicals within DOC plant sites. It was pointed out that nearly all of the chemicals on the Schedules are intermediates and not end products.

There are many other serious issues under consideration and in need of attention with regard to the OPCW verification regime, both for chemical weapons related sites and industrial facilities. The verification concept must be defended from erosion. The key principles in this concept are that verification is designed to demonstrate compliance with the provisions of the CWC and verification must be carried out in the least intrusive manner and through cooperative means. Verification begins and ends with the independence of the Technical Secretariat, and thus of inspectors, to carry out their mandate. While there have been no gross violations of the CWC to date, and the verification regime is functioning, it is also impeded by numerous roadblocks erected by the states parties—managed access, lack of transparency, reinterpretation of the Convention, underbudgeting, reservations, etc. These restrictions have resulted in less than optimum performance and may gradually erode the confidence placed by the states parties in the CWC.

A large piece of the verification puzzle is the ability to the OPCW Executive Council to take the decisions necessary to enable the verification regime to fully function, such as the approval of detailed plans for the verification of destruction of chemical weapons and CWPFs, for the conversion of CWPFs, and facility agreements, as well as decisions on the unresolved industry issues: low concentrations, aggregate national data, boundaries of production and captive use, transfers of Schedule 3 chemicals, etc. The Executive Council, rather than making quick decisions, has a tendency to defer decision from session to session, often for as much as a year or more. At the root of the problem is an emphasis on consensus-decisionmaking, which is not mandated by the Convention and which effectively holds decisions hostage to the whims of one or a few states parties. As well, over the last couple years, the Council has been plagued by a dominance of administrative and procedural issues over substantive topics. In order to ensure effective verification, the Council must function more efficiently and effectively, which requires better focus, more preparation, and greater political will and participation.

In addition to Articles IV, V, and VI (the chemical weapons-related and industry verification provisions), the OPCW must turn its attention to the implementation of Article IX of the CWC: challenge inspections. The fact that no state party has called for a challenge inspection to be conducted anywhere in the first five years of the OPCW's existence is seen by some as proof of the CWC's effectiveness and believe that the role of a challenge inspection is deterrence, while others see the non-implementation of Article IX as a deficiency that must be corrected as soon as possible. They view challenge inspections as important CBMs that should become routine practice. If a state party does have concerns about the compliance of another state party, it has an obligation to pursue such allegations through either the consultation and clarification procedures provided for in the Convention or via a challenge inspection. The fact that this has

not occurred and the role challenge inspections should play in CWC implementation must be addressed during the review process.

The Convention is viable, but only if those responsible for its implementation—the states parties and the Technical Secretariat—take their obligations seriously. Change is sorely needed.

National Implementation

Universality is not just about numbers, but is also about application. It is not enough for the CWC to be adopted universally, it must be implemented universally as well.

Article VII of the Convention requires states parties to take the necessary measures to implement the CWC at the national level, including implementing legislation that criminalizes the CWC prohibitions. The verification regime will only fully function with the collaboration of all the states parties, and the states parties must be empowered to collaborate. To date, only a minority of states parties (63) have enacted implementing legislation, and the forms and provisions of such legislation vary widely. Although international law can, for some legal systems, automatically become the law of the land, regulatory legislation is still necessary to ensure proper implementation. Work must be done towards the enactment and the harmonization of domestic legislation among all 145 states parties.

One area in which the divergence in legislative measures is most pronounced is in the definition of what constitutes a chemical weapon—some states parties limit it to the Schedules while others rightly use the GPC. Under the Convention, states parties are obligated to do the latter, but there is much debate over how to implement the GPC, which by its very nature is broad and all inclusive leading to greater resources for monitoring, analysis, and declaration. The states parties and their National Authorities must work diligently to prevent the misuse of all toxic chemicals.

On the issue of the GPC and national implementation in general, the OPCW should show leadership and promote awareness among the states parties. This it has done to some extent already, most recently via two questionnaires sent to states parties requesting information about their national implementation measures, both in regard to the import and export of toxic chemicals and penal legislation.

In other areas of national implementation, the OPCW has made great progress: the training of National Authorities, the exchange of information, capacity building, support for the work of National Authorities, and encouraging communication between National Authorities regionally and internationally. Another OPCW program, the ethics project, is in its preliminary stage. This project seeks to engage academia and research centers within the scientific field for the purpose of ethical education; reaffirming the global norm against the unethical activities involving chemical weapons. The ethics project will work to increase awareness of the CWC within the chemical sciences and educate students and scientists about the deleterious applications of their work. Scientists must be made to realize that any activities involving chemical weapons are not only unethical but also illegal. Industry must also be made more aware of the CWC and industry's role in the implementation of the global chemical weapons ban.

In addition to discussion of the topics addressed above, the Study Group received a paper on Russia's national implementation measures, including details about the request to extend its destruction deadline to 2012. Russia views national implementation of the Convention as an international project, particularly with respect to the destruction program, which can not be completed without international financial assistance.

Although much is being done already, there is more that could be done by both the Technical Secretariat and the states parties in the area of national implementation. A greater commitment of political and economic resources is needed from the states parties to ensure the reliability and viability of national implementation.

The Contributions of NGOs

In response to a letter sent from a group of NGOs to the Director-General—an initiative that began at the Study Group workshop in June 2001—NGOs have been informed that they are welcome to attend the Review Conference under the usual rules of procedure and that they are additionally invited to submit papers to the WGRC. There is the added possibility of NGOs briefing the WGRC directly or being provided with an informal session or forum during the Review Conference at which to speak. A general acknowledgement of the value of NGO participation has been voiced within the WGRC, but NGOs must push for more formal involvement; one way to do this is by answering the WGRC's invitation for papers, the sooner the better.

The one NGO currently most involved in the review process is IUPAC, which is preparing its study of scientific and technological developments relevant to the CWC. An effort is being made to involve National Authorities and particularly their technical advisors in this process, in order to provide the states parties a channel for participation. It is important that the IUPAC study remain pertinent and relevant to the review process and not make wide-ranging recommendations that cannot be translated into near-term action.

Industry should also be encouraged to take a more active role in the review process and participate in the review conference.

Assuring an Effective Outcome

There is a real potential crisis in that the states parties do not yet seem engaged or interested in the review process. This will hopefully change when national papers are finalized and submitted. The states parties find themselves preoccupied with the question of appointing a new Director-General of the Technical Secretariat. There is also a need to determine what the end product of the review conference will be: a final declaration, a set of decisions, a report? The outcome has not yet been decided.

Preparation and participation will be the keys to a successful review. There must be consensus on an agreed clear vision of what the review should accomplish. The circle of active participants must be extended wider than the 9-10 delegations that are most active in the work of the OPCW. The CWC and the OPCW are about upholding an international norm; therefore, the review process must be inclusive and involve all stakeholders: the states parties, the Technical Secretariat, NGOs, academia, industry, etc. To this end, transparency and public participation are key not only to the review process but also to the longterm success of the OPCW.

Counteracting Biospecific Terrorism

The issue of how to protect people and animals from chemical and biological weapons, particularly if such weapons are used by terrorists, is an important topic of discussion in a post-September 11th world. The two facets of this problem are deterring the use of chemical and biological weapons and establishing the proper mechanisms for passive defense: protection, detection, and decontamination. As one example, the Study Group heard a report of a practical exercise conducted to determine whether people are safer inside of sealed or ventilated rooms during a chemical attack. The conclusion was surprising and contradictory to much of the information released in recent months. People are safer in a room with some ventilation than in a room that is “completely” sealed—a complete seal is almost impossible to achieve and ventilation will help to dissipate any agent that did gain access to the room.

The Study Group was also presented with an analytical framework of armed violence. The determinants of the effect armed violence has on a population include: the potential of the weapon to cause the effect, the number of potential armed users, the vulnerability of the victim, and the potential for a situation to come to violence in the first place. In order to respond to armed violence, protect populations, and save lives, answers must be sought to these questions, as well as the questions of the context and intent of weapons use and how to prevent or limit the effects of a particular weapon or weapons.

With this framework in mind, there is much that the international community can do to reduce the potential for and the impact of the use of intentional disease as a weapon. Number one is the conclusion of a verification protocol for the BWC and universal adherence to both the Convention and the protocol, as well as criminalisation at both the national and international levels of biological weapons offences. Better disease surveillance and control of known pathogens in combination with better preparation within the health services will significantly advance global response capabilities. All of this is only possible, however, if there is an effort to increase awareness within the scientific community of the hazards of both chemical and biological weapons and the international treaties designed to control and eliminate them.

Future Work of the Study Group

With over 50 years of work to its credit, Pugwash has made great strides in the linking of science with world affairs, particularly in the area of disarmament. However, in the twenty-first century there may be a need to reevaluate role and strategy of Pugwash. In the last few decades, civil society and the public at large has taken on a greater role in large areas of public policy and international politics. Until now, Pugwash has had little interaction with these groups. Perhaps it is time for Pugwash to enter into coalitions with civil society, and to become more advocacy oriented? Pugwash also must explore ways to reach out to and involve the next generation of scientists and policymakers. One example is the nascent BW monitoring group. Should Pugwash join them?

The Study Group hopes to hold its eighteenth workshop in Geneva during 9-10 November 2002, just prior to the resumption of the fifth review conference of the BWC on 11 November. This workshop will focus on the fifth review conference and on efforts to ensure the establishment of a verification mechanism for the BWC.