

CIVIL SOCIETY AND THE NORM AGAINST THE WEAPONISATION OF DISEASE

Meeting the challenge¹

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The threat of biological disease has been significantly raised in the public consciousness in the past few years. Where previously state-run programmes were the most significant concern, increasingly policy makers are focusing on the threat that access to biological weapons by non-state actors can pose. The establishment and maintenance of effective regimes to prevent the spread of biological weapons requires efforts by different actors at different levels. Civil society organizations can play an important role in mobilising public awareness and increasing knowledge on preventing the spread of biological weapons. The establishment of a specific network to further these aims – the Bioweapons Prevention Project – has given civil society organizations a clear focus and direction for their efforts.

On any given day over two billion people worldwide are estimated to be seriously ill. One-quarter of all deaths and about 50% of all deaths in developing countries are caused by naturally occurring infectious diseases. The World Health Organisation (WHO) estimated in 1999 that each year more than 13 million people die from infectious diseases alone.²

Biological warfare is the intentional use of disease-causing micro-organisms, or other entities, that can replicate themselves – such as viruses, infectious nucleic acids and prions – against humans, animals or plants for hostile purposes. Biological warfare may also involve the use of toxins, which are poisonous substances produced by living organisms, including micro-organisms such as botulinum toxin, plants (for instance ricin derived from castor beans) and animals (for example snake venom). Synthetically manufactured toxins that

are used for hostile purposes are also biological weapons (BW). Biological weapons could cause casualties of the order of magnitude of a nuclear weapon.

The 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (Biological and Toxin Weapons Convention, BTWC) is the most important international tool against the use and development of biological weapons. However, since its entry into force in 1975 there have been confirmed cases in which states have breached the convention and several unconfirmed allegations of state biological warfare programmes. This has resulted in increased calls to equip the convention with instruments to verify and enforce compliance. To date, efforts to strengthen the BTWC by means of a supplementary legally binding protocol have failed.

The BTWC regulates the behaviour of states. In the current international security environment many states have come to believe that certain non-state actors (such as criminal or terrorist groups) pose the greatest threat in terms of biological weapons use, and therefore argue that the BTWC cannot adequately address their security concerns. However, national implementation of the treaty, which includes adopting legislation to criminalise the use and development of biological weapons, may go some way towards addressing this threat.

The ability of the BTWC to address the security concerns of states is additionally challenged by the rapid developments in the fields of biotechnology and genetic engineering. While biotechnology and genetic engineering offer many promises to improve the quality of life, much of this knowledge could easily be converted for hostile purposes in order to improve the stability and virulence of existing warfare agents, or even to create new agents based only on some components of an organism. While states parties reaffirm the prohibition in the light of the technological developments during the periodic review conferences of the convention, a consequence of the failure of the Fifth Review Conference in 2001 and 2002 was that the norm has not been updated since the Fourth Review Conference in 1996. Failure of the Sixth Review Conference in 2006 to address this issue would undermine the relevance of the BTWC.

The nature of the BW threat

There are three primary areas of concern with regard to the threat of biological weapons development and use: state biological weapons programmes; the apparently growing interest of non-state entities in non-conventional weapons, including biological agents; and the future threat posed by unconstrained developments in science and technology which may enable states, organisations or even individuals to develop stable and controllable agents to cause indiscriminate harm.

State programmes

After World War II the Soviet Union and the US (and to a lesser extent the United Kingdom)

continued their research into and development and production of biological weapons. The US formally halted its programme in 1969 and proceeded to destroy existing BW stockpiles. This unilateral gesture helped pave the way for negotiation of the BTWC. The Soviet Union, however, did not reciprocate and even accelerated its BW armament, despite the fact that it was one of the three co-depositories of the BTWC (the other two being the UK and the US).

The Soviet programme survived the 1991 break-up of the Soviet Union essentially intact and, despite assurances by the Russian leadership, there remain considerable doubts as to whether Russia has terminated all of the activities prohibited under the BTWC. After having confronted Russia with detailed evidence of its prohibited BW programmes, the US, the UK and Russia agreed in September 1992 to reciprocal visits to certain facilities.³ These trilateral verification and transparency exercises soon faltered and the lack of access to key facilities increased international suspicion of Russian non-compliance. Meanwhile Russia closed key facilities to foreign researchers, and in August and September 2002 a US congressional delegation was refused access to one of the former Soviet BW facilities, even though the US provided Russia with millions of dollars to increase security and retrain Soviet scientists who had been involved in the programme.⁴

Russia is not the only country to have violated the BTWC, but it is difficult to draw firm conclusions about which countries have chemical or biological warfare programmes because of the secrecy which inevitably shrouds such programmes. Since the terrorist attacks on 11 September 2001 in the US, a few countries have become the focus of concern in relation to the proliferation of biological weapons. These are countries which are believed by Western nations to support terrorism and which are generally hostile to Western interests. Attempts to isolate these countries from the rest of the international community include the use of terms such as 'rogue state' or 'axis of evil'. However, there remains a great deal of uncertainty about whether these states have offensive BW programmes, and the criteria by which to judge this remain unstated.

Threats posed by non-state actors

In October 2001 letters containing anthrax spores were delivered to members of the US Congress and individual citizens, killing five people and infecting another 17. The fine quality of the spores suggested that a military laboratory – most likely located inside the US – was used in their preparation, but the perpetrator or perpetrators remain unknown.

In these incidents people who were not normally considered as being at risk from a biological terrorist attack (postal workers, secretaries and members of the public) became the first victims. The extensive and costly clean-up operations were hampered by the lack of consensus about what constitutes a safe environment following decontamination. Military standards to ensure the continuation of operations on the battlefield cannot be applied in a civilian setting.⁵

The mail-delivered anthrax spores also demonstrated the potential of such attacks to cause widespread social and economic disruption. Before the anthrax mailings security analysts were preoccupied by the threat of BW terrorist attacks which had the potential to cause large numbers of casualties. While the likelihood of large-scale biological warfare attacks occurring remains low – due to the technological challenges involved in the development, manufacture and dissemination of biological agents, and the demands these challenges place on the organisational structure of non-state groups – it is now clear that acts of biological terrorism could be directed at creating economic and social disruption.

Attacks on the agricultural sector through the use of plant or animal diseases also come within easy reach of single-issue groups, criminals and less-structured organisations. Biological agents arguably offer the prospect of large-scale economic disruption, as they can be used to infect livestock or destroy crops. The time needed for an animal or plant disease to develop after such an attack would invariably stretch over a prolonged period of time and the demand for containment, remediation and compensation would involve authorities at both national and local levels of governance. The economic damage in such a situation would not be limited to the destruction of produce, but would also

affect other enterprises that depend on agricultural products and would seriously affect international trade. Countries, regions or communities that depend on monocultures for their livelihood are particularly at risk.

Governments face a multitude of biological terrorism threats, but the most catastrophic scenarios involving mass casualties, though possible, are the least likely to occur. (Catastrophic scenarios involving non-conventional weapons, which feature in many policy debates, are often made plausible by insistence on the existence of a threat posed by state-sponsored terrorism.) Nevertheless, because of the potential consequences for the targeted society of a terrorist attack with BW, governments must be prepared for such an attack. The issue of key importance is thus to devise and execute balanced policies. Overreaction can lead to nationwide anxiety and paranoia. In such an atmosphere, hoaxes may become as efficient in terms of causing disruption as actual attacks with BW.

Scientific and technological developments

Biological warfare is closely related to knowledge of disease. The opportunities for the weaponisation of disease began with scientific breakthroughs in the early 1970s. In 1973 the first gene was cloned; three years later the first company to exploit technology based on recombinant DNA was founded in the US. The revolution has continued along two main lines: genomics and proteomics. Together, they represent powerful experimental and modelling techniques that enable the modification of living organisms and their products in precise and predictable ways. They also enable small molecules to be designed to interact in specific ways with proteins in order to predictably alter their functioning.⁶

Biotechnology has the potential to improve biological warfare capabilities through product and process improvements. Product improvements may involve the genetic modification of pathogens or the creation of novel agents, as well as the development of new equipment for analysis and production. Process improvements relate to the way in which the agents are manufactured. Optimisation of production processes, for instance, can lead to larger production batches in shorter time frames or

to the use of smaller, less conspicuous equipment (such as fermentors), which would make it easier to hide a BW programme in legitimate activities and installations.

Research and development in the field of biotechnology leads to many 'enabling technologies', which lay the foundation for future product and process improvements. Of particular importance today are the automation of sequencing in genome projects; bioinformatics, which contributes greatly to the storage and analysis of research data; and the advances in combinational chemistry and high-throughput screening of compounds.

Many of these products and processes are being researched and developed for civilian application in medicine, pharmaceuticals, and agriculture, as well as for purposes that are legitimate under the BTWC, such as defence, detection, protection and prophylaxis. However, their investigation also generates considerable knowledge about the potential offensive use of certain substances to interfere with the biological processes in humans, animals and plants. In certain cases, the offensive properties of known or potential biological warfare agents are being actively investigated in order to develop adequate defensive technologies and procedures. Such activities raise the question whether they are permissible under the BTWC. The question may be difficult to answer, because it ultimately depends on the intentions of the state conducting such research and development programmes. Transparency is one of the keys to protecting against the hostile use of new technologies, greater secrecy will make the international community less inclined to accept the benign purpose of these programmes.

The Biological and Toxin Weapons Convention

The BTWC is at the heart of the norm against biological weapons. It was opened for signature on 10 April 1972 and entered into force on 26 March 1975. As of October 2004, 152 states have ratified or acceded to the BTWC and another 16 have signed, but not ratified the convention. The BTWC encompasses a comprehensive prohibition of preparation for biological warfare. According to Article I, states parties cannot

acquire or retain BW under any circumstances, which serves to implicitly ban the use of biological and toxin weapons. This prohibition was reaffirmed by the Fourth Review Conference of States Parties, held in 1996.

By current standards the BTWC is a weak treaty, because it lacks effective mechanisms for monitoring and verifying whether or not states parties are complying with their treaty obligations. In particular, the review process has reaffirmed the applicability of the core prohibition of Article I to the rapid developments and discoveries in the field of biotechnology. The review conferences have also attempted to increase the transparency of activities relevant to the convention on a voluntary basis. During the Second Review Conference in 1986 the states parties agreed on annual data exchanges to serve as confidence-building measures (CBMs). However, participation in these confidence and transparency-building measures has been limited and, in most cases, is not systematic. In addition, the parties are only required to provide their declarations in one of the six UN languages and no organisation has been designated to administer, translate, distribute or analyse the submissions. While some states have acted in the interests of transparency by making their CBM declarations publicly available on the Internet, most have not. Doing so would be an important step towards engendering public confidence in the BTWC.

Most importantly, the question of verification and compliance enforcement has still not been resolved. Efforts since 1991 to redress this imbalance, culminating in the draft protocol negotiated by an ad hoc group of states parties to the BTWC,⁷ was rejected by the US in 2001 based on its assessment that the draft protocol would negatively affect its national interests. The Fifth Review Conference in 2001 was hastily adjourned until November 2002 following a last minute effort by the US to terminate the negotiation mandate of the ad hoc group.⁸ In 2002, the Fifth Review Conference did not finalise its review of the operation of the BTWC, but instead adopted a compromise proposal calling for a Sixth Review Conference to be held no later than 2006 and a series of annual meetings between 2003 and 2005, which would be preceded by expert group meetings. The

meeting only have a limited mandate to discuss five sets of topics and they cannot reach legally binding agreements.⁹ At present the efforts to strengthen the BTWC through a supplementary legally binding document are stalled.

NGO responses

At times failure is as significant a catalyst for action as success. When the protocol negotiations failed in 2001, it served as a strong signal to the community of non-governmental organisations (NGOs) that action needed to be taken to prevent this event and its aftermath from weakening the international norm against biological weapons. During the five years of negotiation (1996–2001) the effectiveness of the proposed protocol had been consistently compromised in an attempt to reach consensus. By 2001 the text was indeed significantly weaker than some states parties and the NGOs monitoring the negotiations would have wished. That they had accepted several key compromises in order to meet US concerns made the US justification for pulling out of the negotiation – that the proposed agreement would weaken its national interests – hard to bear.

The failure was a wake up call for civil society. It had become painfully clear that there were too few NGOs undertaking research and monitoring activities on BW-related issues to significantly influence the process. Furthermore, the then existing BW NGO community was mostly based in the US and Europe (particularly in the UK). In addition, the homogeneity of NGO community meant that the views of civil society were not reflected at international level. In most parts of the world, the BTWC negotiations had attracted little or no attention. If NGOs were to prevent the failure from casting a shadow over the future of the BTWC, it was essential that civil society organisations around the world become aware of the issues and actively press their national governments and the negotiators at international level to strengthen the treaty. It was believed that civil society had to organise itself better to contribute actively to a positive outcome of future negotiations and to monitor activities inside countries and at international forums in order to ensure that the norm against the weaponisation of disease was not undermined.

The success of the international campaign to ban landmines and the international movement to monitor and control small arms use and proliferation were inspirational. The role that civil society had played in bringing about the Ottawa Convention and in informing the negotiations on small arms control provided useful insights for the BW NGO community. In March 2002 the Geneva Forum organised a meeting for civil society organisations and government representatives entitled: ‘Civil society monitoring: comparing experiences, exploring relevance to biological weapons’. This meeting provided sufficient impetus for nine NGOs to initiate the process which resulted in the formation of the BioWeapons Prevention Project (BWPP), which was launched eight months later.

Establishing a global network

The original founding organisations of the BWPP, with one exception, had little experience of working on BW issues outside North America and Europe. It was, therefore, essential for the BWPP in its early phase to develop an understanding of the specific issues of concern to organisations, individuals and governments in other parts of the world. In order to broaden and deepen its knowledge of how biological weapons issues are viewed in the developing world, and to establish a strong basis from which to draw conclusions about how a sustainable network may be grown, the BWPP initiated a pilot project in South Africa in 2003.

South Africa was chosen as the location for the initial programmatic development of the BWPP because, first, the South African public and NGO community had been exposed to the consequences of chemical and biological weapons development and use through publication of the details of the apartheid Chemical and BW programme¹⁰ and there was consequently an existing interest in the issue and awareness about the need for effective international and national controls, and second, the NGO sector in South Africa is well established and has a long history of engagement with disarmament issues.

An important advantage was the involvement of a South African NGO in founding the BWPP. This meant that in developing its

networking activities the BWPP could rely on the organisations' experience, knowledge of geography and political dynamics, as well as the relationships between the NGOs and government. In addition, the South African government had, since 1994, demonstrated its commitment at an international level to strengthening the BTWC. Had the BWPP initiated its activities in a country that was less well known to its member organisations and staff, the learning curve would have been much steeper and important lessons about the natural constituencies for BWPP activities may have been missed in an effort to identify people and organisations with which to work.

Since 2003 the BWPP has held four workshops in South Africa. Besides acquiring valuable experience and insights for future networking activities, six new organisations from southern and South Africa have joined the network. This number is likely to increase in 2005. In 2004 the BWPP gained eight network members, bringing the number to 32.

Lessons for BWPP

It is clear from the process followed in South Africa that a phased approach to network development can result in the establishment of a sustainable process. For the BWPP, sustainability depends on generating sufficient interest and awareness about the potential harm that can be caused by the misuse of biotechnology for hostile intent. For organisations and individuals at a national level to integrate BW research and advocacy into their programme of activities it is crucial that they identify their stake in the issue. This is now beginning to happen in South Africa. New network members, having been made aware of the key issues relating to BW control and disarmament, have identified this as an important area of work. Reaching that point required an initial investment of BWPP staff time and resources in a phased programme that evolved over a six-month period.

The networking process as developed in South Africa can be broken down into the following phases:¹¹

- initial introductory meeting with NGOs, government agencies and departments, and the press;

- individual meetings with organisations and individuals in the above constituencies;
- multi-constituency workshops to introduce the issues of concern and to explore national responses and views to the future threats; and
- engagement with specific communities to develop an approach to dealing with the concerns raised during multi-constituency workshops.

During workshop discussions with NGOs in the early phase of the project it became clear that the BWPP needed to convey a very clear understanding of what biological weapons are, and why it is important for civil society organisations in the developing world to be concerned about BW issues. Participants in these discussions were clear that these two issues were far more important than arguing the need to strengthen the BTWC as a starting point for discussion. This had an impact on the structure of the subsequent workshops, resulting in greater involvement of the participants in discussions.

While the South African public and NGO community were aware of the harm caused by the past CBW programme, there was little awareness about the future threats posed by the possible misuse of new technologies to food and health security, the economy or human rights. Raising these matters during the workshops provided an opportunity for participants from government departments, NGOs and the scientific community to find issues of common concern and identify ways in which they could work together to minimise the risk.

BWPP workshops in July and October 2004 (in Johannesburg and Cape Town respectively) brought together NGOs involved in security and disarmament, human rights and environmental issues; representatives from government departments and agencies; representatives of the scientific and health professional communities; and industry representatives. The BWPP workshops were the first opportunity these constituencies had to jointly discuss an issue of common interest and concern. For many participants it provided an opportunity not only to question what government departments were doing to

minimise the risk of the use of BW, but to discuss ways in which they could address the need to minimise the risk in their own communities, and how they could cooperate with government officials to reduce the threat. For government departments the converse was true. It was an opportunity to talk about the steps that the government was taking, share issues of concern, including the constraints on the ability of the health infrastructure to cope with an infectious disease outbreak and the challenges faced by prosecuting authorities to undertake investigations into violations of national laws which prohibit the development, use or transfer of pathogens for harmful purposes. The value that can be gained from initiating and facilitating dialogue between these constituencies was an important lesson for the BWPP.

Before undertaking this pilot project the BWPP had identified the NGO community as its primary constituency. Yet, the enthusiasm with which representatives of the scientific and health professionals communities responded to the discussions during the workshops made it clear that the support base for the network is far broader. One of the most practical and positive outcomes of these meetings was the request for assistance by the BWPP to develop educational materials and curricula to inform scientists and students about the risk of the misuse of science, the responsibilities of scientists and the international treaties, and national laws and regulations to which they should adhere. The BWPP is currently working with the Health Sciences Faculty of the University of the Witwatersrand to develop a curriculum for science students which incorporates these aspects. Other universities represented at the workshop have expressed an interest in introducing such courses too. Through this the BWPP is able to reach a wide range of future scientists to convey the need to act responsibly and to be aware of the harm which can be done through unethical behaviour.

The challenge for the BWPP is to integrate the lessons from this pilot project into an approach which will ensure the sustainable development of issue awareness and engagement in other countries. It is likely that through the process in South Africa network members will

become involved in the process of engaging NGOs in other countries on the African continent. Since biological weapons-related issues are both technically complex and are not a priority concern in many countries, the process of building the network will be slow and require extensive capacity-building. The BWPP believes that strengthening global involvement in preventing the misuse of science and technology will lead to the strengthening of the international norm against the weaponisation of disease.

Notes

- 1 This commentary is based on a chapter prepared by the authors for the first edition of the *BioWeapons Report*, the annual publication of the BioWeapons Prevention Project. The BioWeapons report is available on the BWPP website, <<http://www.bwpp.org>>.
- 2 World Health Organisation (WHO), *Removing obstacles to healthy development*, WHO document WHO/CDS/99.1, WHO, Geneva, 1999, <<http://www.who.int/infectious-disease-report/pages/ch1text.html>>.
- 3 Joint statement on biological weapons by the governments of the United Kingdom, the United States and the Russian Federation, 10–11 September 1992, <<http://projects.sipri.org/cbw/docs/cbw-trilateralagree.html>>.
- 4 J Warrick, Russia denies US access on bioweapons, *Washington Post*, 8 September 2002, p 25.
- 5 For a detailed overview of the attacks with mail-delivered anthrax spores, see J P Zanders, J Hart and F Kuhlau, Chemical and biological weapon developments and arms control, *SIPRI yearbook 2002: armament, disarmament and international security*, Oxford University Press, Oxford, 2002, pp 696–703.
- 6 M Wheelis and M Dando, New technology and future developments in biological warfare, *Disarmament Forum* 4, 2000, p 44.
- 7 For a summary of the history of the negotiations and the contents of the last version of the draft protocol before the negotiations collapsed, see J P Zanders, J Hart and F Kuhlau, Biotechnology and the future of the Biological and Toxin Weapons Convention, *SIPRI fact sheet*, Stockholm International Peace Research Institute, Stockholm, November 2001, <<http://projects.sipri.org/cbw/research/cbw-papersfactsheets.html>>.
- 8 Zanders, Hart and Kuhlau, Chemical and biological weapon developments and arms control, op cit, pp 673–77.
- 9 UN Department of Disarmament Affairs, Draft Decision of the Fifth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling

of Bacteriological (Biological) Weapons and on Their Destruction, document BWC/CONF.V/CRP.3, 6 November 2002.

10 In 1998 the Truth and Reconciliation Commission held a public hearing on the apartheid chemical and biological warfare programme. The hearing

was widely covered in the press as was the trial of the former head of the programme that followed a year later.

11 The seminar reports detailing the development of the networking strategy are available from <<http://www.bwpp.org/publications.html>>.