



GLOBAL
GOVERNANCE
INSTITUTE

Niels van Willigen & Koos van der Bruggen

**THE BIOLOGICAL WEAPONS CONVENTION,
BIOTERRORISM AND THE LIFE SCIENCES**

GGI Briefing Paper 2/2012

April 2012

The Global Governance Institute
773 Chaussée de Waterloo
1180 Brussels, Belgium
Email: info@globalgovernance.eu
Web: www.globalgovernance.eu

Summary

One of the most shocking abilities of biological weapons is the ability to kill you without noticing a previous infection. This makes it a very powerful and dangerous source of modern weaponry. It can take days before a victim becomes ill or dies and it might be difficult to determine whether this was because of a natural outbreak of disease or because of an attack with a biological weapon. This raises serious problems for policymakers working on biosecurity, especially in relation to the threat of bioterrorism. With the advancements made in life sciences (such as biology, bio-nanotechnology, genetics) there is a growing concern among policymakers and academics that terrorists might misuse research intended for legitimate purposes. When it comes to global efforts to counter bioterrorism it is important to know to what extent the Biological Weapons Convention (BWC) - as the traditional cornerstone of the biological weapons non-proliferation regime - addresses this challenge. In this policy brief we argue that the tools at the disposal of the BWC to tackle bioterrorism and to monitor developments in the life sciences are rather limited. The most recent Review Conference, which took place at the *Palais des Nations* in Geneva in December 2011, changed little in that respect. We argue that the limited role of the BWC can be explained by the fact that the lowest common denominator the 165 States Parties can agree on is to preserve the BWC as a traditional arms control regime. As a result, countering bioterrorism and debating the right balance between scientific freedom and security in the life sciences will mainly take place outside the BWC. This has implications for global governance in the sense that it demands cooperation between a plethora of stakeholders, including states, international organizations, industry and scientists. Ideally the BWC would have to develop further into a hub in which these actors are able to create synergy in the global efforts to counter bioterrorism.

About the Authors

Niels van Willigen is Assistant Professor of International Relations at Leiden University and Senior Analyst at the Global Governance Institute.

Koos van der Bruggen was Secretary of the Working Group Biosecurity of the Netherlands Royal Academy of Arts and Sciences.

About the Global Governance Institute

The Global Governance Institute (GGI) is an independent think tank based in Brussels. By drawing on the expertise and analysis of its network of senior policy-makers, consultants and scholars from the world's leading institutions, the Global Governance Institute promotes comprehensive research and actionable advice in the fields of Peace & Security, International Law & Human Rights, Environment & Sustainable Development, Economic Policy, Forward Studies & Innovation .

Our vision is a more equitable, peaceful and sustainable global order based on effective but accountable international organizations, the global rule of law and the empowerment of the individual across borders and cultures. GGI places particular emphasis on the improvement of the United Nations system and its mutual reinforcement with strong regional organizations.

1. Introduction

Last September a team of Dutch virologists announced that they created a strain of the H5N1 Influenza virus (bird flu) which could be airborne transmitted between human beings. Until then, the transmissibility of the H5N1 virus was limited to birds. Upon request of the National Institute of Health (NIH) in the United States (US) the team experimented with the virus on ferrets, as these animals provide a standard model for studying the transmissibility of influenza viruses between humans. Information about a humanly transmissible H5N1 virus might lead to preventive measures and to the production of new vaccines and treatments. Although the aim of the research is to promote public health there are considerable risks attached. Knowledge about a humanly transmissible H5N1 virus could be misused by potential bioterrorists or by states interested in biological warfare. As such, the H5N1 research is of a clear dual use nature. In other words: the research can be used to improve public health, or it can be misused and turned into a weapon. Due to the dual use nature, the US National Science Advisory Board scrutinized the findings for Biosecurity (NSABB) before publication. Because of increasing concerns about bioterrorism the NSABB has as its task to “provide (...) advice, guidance, and leadership regarding biosecurity oversight of dual use research” ([The Secretary of Health and Human Services, 2010](#)). The NSABB advised a limited publication in which crucial details would be left out. It was the first time that NSABB gave such an advice. The advice turned out to be the starting point for a renewed debate on biosecurity in politics and science. Some scientists felt the NSABB decision infringed on academic freedom. Moreover, Ron Fouchier (the virologist who led the H5N1 research project) argued that the risks associated with the research were overstated.¹ The debate

1 For instance during a debate in Washington DC: <http://www.asmbiodefense.org/index.php/program-information/nsabbs-recommendations-for-h5n1-research> (accessed on 22 March 2012)

resulted in a temporal moratorium on research and publication during which all parties involved would try to find a solution. During a special meeting of the World Health Organization (WHO) in February 2012 consensus was reached that “there is a preference from a public health perspective for full disclosure of the information in these two studies. However there are significant public concerns surrounding this research that should first be addressed” ([World Health Organization, 17 February 2012](#)). The research team prepared a new version of the article, which – again – was reviewed by NSABB. This new procedure led to the decision of a majority of NSABB (30 March 2012) to give a recommendation for unrestricted publication of this new version. Meanwhile the debate had broadened. The Dutch government defined a publication of the research results as ‘strategic good’ and obliged the H5N1 research team to request an export licence ([Herderschee, 2012](#)). Fouchier and his team refused to do so, because he considers the risk of misuse by bioterrorist small. Moreover, Fouchier argued that it would infringe on academic freedom ([Bekker, 2012](#)). At the time of writing this policy brief (April 2012) neither the position of the government, nor the position of Fouchier had changed.

The case of the H5N1 virus shows the importance to think about the proper balance between academic freedom and security concerns. Concerns about biological weapons are not new. Since 1975 the Biological and Toxins Weapons Convention (BWC) has been in force. It prohibits the stockpiling, production, acquisition, and transfer of biological weapons and related toxins.² As a Cold War product the BWC

2 Formally the BWC does not prohibit the use of biological weapons, but this prohibition can be found in the 1928 Geneva Protocol which is regularly referred to by the States Parties of the BWC. The Geneva Protocol was concluded in order to prevent states from using biological weapons in warfare. Different from the BWC, the Geneva Protocol allows states to develop, produce, stockpile and trade biological weapons.

focuses on states as the most likely users of biological weapons. However, especially since 9/11 the possibility of terrorists using biological agents to carry out an attack became an increasing concern for many policy makers. In 2004 the G8 Action Plan on Non-Proliferation stated 'Bioterrorism poses unique, grave threats to the security of all nations, and could endanger public health and disrupt economies' ([G8 Action Plan on Non-Proliferation, 2004](#)). In 2006, former United Nations (UN) Secretary-General Kofi Annan called for more awareness of the threat of bioterrorism: 'The most important under-addressed threat related to terrorism, and the one which requires acutely new thinking on the part of the international community, is that of terrorists using a biological weapon' ([Secretary-General of the United Nations, 2006](#)). And in 2008 the US Commission on the Prevention of WMD Proliferation and Terrorism warned that bioterrorism is a 'more likely' threat than nuclear terrorism ([Commission on the Prevention of WMD Proliferation and Terrorism, 2008](#)).

In spite of these alarming statements about underestimation, the seriousness of the bioterrorist threat is heavily debated ([Epstein, 2012:29](#)). Doubts about the likeliness of a bioterrorist attack are explained by the fact that so far only a few (attempted) terrorist attacks involved biological weapons. The three most often cited examples are the salmonella poisoning of salad bars by the Rajneeshee sect in 1984 in the USA, the failed attempt to use anthrax as a biological weapon by the Japanese Aum Shinrykio sect in the 1990s, and the anthrax letters which circulated in the USA right after 9/11. There is also some evidence that Al Qaeda was trying to obtain biological weapons, but they failed. The small occurrence of bioterrorism has led several analysts to conclude that the concerns about bioterrorism are mainly the result of a process of securitization of the life sciences. In other words, politicians and policymakers present the application of methods and knowledge of the life sciences by terrorists as an existential threat. The question

whether the threat actually exists does not matter: it is the perception of the threat which influences governments to take countermeasures ([Kelle, 2005](#), [Miller et al., 2011](#)).

Securitized or not, the life sciences have become much more important since the inception of the BWC. The life sciences and the related industry were rather small in the 1970s. Since then, developments in the life sciences have progressed to such an extent that it might revolutionize society in the 21st century. Developments in fields such as genomics, proteomics, systems biology, nanotechnology, and synthetic biology will make us understand diseases better and lead to better cures. At the same time, they might provide new weapons for states and non-state actors pursuing biological weapons ([National Research Council of the National Academies et.al., 2011](#), [Van der Bruggen and Ter Haar, 2011:61-71](#)).

To what extent does the BWC effectively address the challenges that are posed by the threat of bioterrorism and the misuse of advances made in the life sciences? In this policy brief we show that the role of the BWC is rather small. We also argue that the Seventh Review Conference of the BWC changed little in that respect. This conference, in which 103 States Parties participated, took place from 5 to 22 December 2011 in order to review the treaty and to address contemporary challenges.

2. Addressing bioterrorism in the BWC

The BWC focuses on preventing states from developing biological weapons. Negotiations on the BWC started in 1969 because of a renewed interest in controlling chemical and biological weapons. It helped that biological weapons were considered to be abhorrent, but increasingly also of limited military relevance ([Van der Bruggen and Ter Haar, 2011:22](#)). The treaty entered into force in 1975 without a verification system. That makes it difficult to enforce compliance and therefore the success of the

BWC mainly depends on cooperation, transparency, and confidence building measures among the States Parties. Although there have been some (suspected) instances of non-compliance by States Parties, the general track record of the BWC is good.

The question is whether the BWC can effectively deal with the threat of bioterrorism. None of the Convention's articles explicitly refer to terrorism. However, articles III and IV implicitly address the issue of bioterrorism. First, the Second Review Conference (1986) confirmed that Article III, which prohibits the transfer of biological weapons to recipients such as states and international organizations, also includes recipients at 'sub-national' levels. Secondly, Article IV of the Convention demands from States Parties that they take 'any necessary measures to prevent the development, production, stockpiling, acquisition or retention' of biological weapons. These national implementation measures not only prevent States Parties to develop biological weapons, but also aim to prevent terrorists getting hold of biological weapons.³

The implicit nature of both articles and the increasing concerns about bioterrorism since 9/11 resulted in several references to the threat of terrorism in Final Declarations of Review Conferences and reports of intersessional Meetings of States Parties of the BWC. References to terrorism are difficult in multilateral environments. No commonly agreed definition exists, mainly because such a definition entails political implications for many states that are facing violent opposition. The difference between political motives and terrorist motives are not always easy to distinguish. As a result, countries are prevented from agreeing on a common definition. In case of the BWC a rather broad and general reference to the danger of bioterrorism can be found in the

³ For the most recent interpretation of this article see the Final Document of the Seventh Review Conference.

Final Declaration of the Seventh Review Conference ([Biological And Toxins Weapons Convention, 2012:9](#)):

‘Their [states parties] conviction that terrorism in all its forms and manifestations and whatever its motivation, is abhorrent and unacceptable to the international community, and that terrorists must be prevented from developing, producing, stockpiling, or otherwise acquiring or retaining, and using under any circumstances, biological agents and toxins, equipment, or means of delivery of agents or toxins, for non-peaceful purposes, and their recognition of the contribution of the full and effective implementation of United Nations Security Council Resolution 1540, United Nations General Assembly Resolution 60/288, and other relevant United Nations resolutions.’

While confirming that – in spite of its emphasis on states – the BWC also attempts to prevent the use of biological weapons by terrorists, the quotation from the Final Declaration suggests that the BWC relies mainly on other international initiatives to reach that goal. Reference is made to UN Security Council Resolution 1540, which obliges all UN member states to implement legislation against terrorism, including bioterrorism. The UN Global Counter-Terrorism Strategy (UN General Assembly Resolution 60/288) is also mentioned. These initiatives, as well as for example the G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction, the G8 Action Plan on Non-Proliferation, and Interpol's bioterrorism prevention programme are much more relevant than the BWC in addressing bioterrorism.

Calls by analysts preceding the Seventh Review Conference to make substantial steps towards measures tackling bioterrorism within the BWC were largely ignored.⁴ Bioterrorism as such was not even

⁴ See for example the discussion that took place on the website of the biological weapons prevention project: <http://www.bwpp.org/revcon->

on the official agenda of the Review Conference. As the only multilateral treaty explicitly dealing with biological weapons, the BWC can be considered as the cornerstone of the biological non-proliferation regime, but it is clearly not the principal international treaty to address the threat of bioterrorism. This has not changed during the Seventh Review Conference.

3. Addressing scientific and technological developments in the BWC

One of the topics that were addressed during the Review Conference was the agenda points for the so-called intersessional meetings. Since 2003, these meetings take place annually in the five-year period between the Review Conferences. They consist of a Meeting of Experts, followed by a Meeting of States Parties. December 2011, the States Parties decided that developments in the field of science and technology related to the BWC should be one of the three topics to be discussed until the next Review Conference in 2016. Under this heading any scientific and technological development of relevance to the BWC may be discussed. In addition, the Final Declaration mentions a few particular topics, such as developments that potentially lead to uses breaching the provisions of the BWC, developments that have potential benefits for the BWC (for example disease surveillance, diagnosis and mitigation), measures for strengthening biological risk management, voluntary codes of conduct for scientists, academia and industry, education and awareness raising, and scientific and technological developments relevant to organizations such as the World Health Organization, World Organization for

[bioterrorism.html](#). Bioterrorism and the related topics of biosecurity and dual use were also headings of some of the articles that were published in the Think-zone that was available in preparing the 7th review Conference:
[http://www.unog.ch/80256EE600585943/\(httpPages\)/BF4050089BB59EEDC12579300045A924?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/BF4050089BB59EEDC12579300045A924?OpenDocument)

Animal Health, the Food and Agricultural Organization, the International Plant Protection Convention and the Organization for the Prohibition of Chemical Weapons ([Biological And Toxins Weapons Convention, 2012:23](#)).

The decision to discuss scientific and technological developments every year until 2016 is a modest step forward. For the first time advancements in science and technology will be discussed on a yearly basis. At the same time it is important to realize that this is no permanent arrangement and that the mandate of the intersessional meetings is rather limited. First of all, the question whether there will be an intersessional process at all and what topics will be discussed are always decided by the preceding review conference. The topic of scientific and technological developments is therefore not by definition permanently on the agenda.⁵ This differs from the Organization on the Prohibition of Chemical Weapons (OPCW), where a permanent Scientific Advisory Board advises the States Parties on relevant developments. Secondly, the States Parties are not allowed to take decisions at the intersessional meetings. The purpose is to ‘discuss, and promote common understanding and effective action’ on issues relevant to the BWC. However, concrete action can only be taken at the next Review Conference. This also differs from the OPCW where the States Parties are allowed to take decisions in their annual Conference of the States Parties.

From the beginning the BWC aimed to find a proper balance between its non-proliferation objectives and promoting the development of life sciences. Article X explicitly allows and even stimulates cooperation for peaceful purposes. Theoretically the BWC ‘enshrines the

⁵ For an overview of the topics until 2010, see: Bansak, Kirk C. (2011b) Enhancing Compliance with an Evolving Treaty: A Task for an Improved Bwc Intersessional Process. *Arms Control Today* 41 (June).

debate on the balance between scientific freedoms (..) and the need to prohibit and prevent the use of biology to cause harm (..)’ ([Millet, 2011:4](#)). However, as illustrated by the H5N1 discussion, in practice the debate on that balance takes place outside the BWC. This is hardly surprising given the absence of a permanent structure in which scientific and technological developments are assessed and followed by concrete action.

4. Concluding remarks

The BWC is still the cornerstone of the biological weapons non-proliferation regime in the sense that it is the only treaty specifically dealing with biological weapons. Given that position, one could expect the BWC to play a more prominent role with respect to countering bioterrorism and the potential misuse of science and technology. However, that is not the case and this situation is unlikely to change in the near future. During the Seventh Review Conference several States Parties explicitly denied the relevance of the BWC for tackling bioterrorism and even rejected references to Security Council Resolution 1540 ([Bansak, 2012](#)). It is therefore unlikely that bioterrorism will become an important topic on the BWC’s agenda in the near future. The Seventh Review Conference did reach some incremental progress by putting scientific and technological developments on the agenda of the intersessional meetings. However, proposals to enhance the mandate and for introducing standing working groups failed to reach consensus ([Bansak, 2011a](#)). It seems therefore likely that discussions like those surrounding the H5N1 virus will continue to take place outside the BWC.⁶

This has clear implications for global governance. The biological weapons non-

proliferation regime consists of ‘a plethora of parallel national, regional, (..) international and multilateral initiatives’ ([Millett, 2006:47](#)). A few of these initiatives and relevant institutions such as UN Security Council resolution 1540 and the World Health Organization have been mentioned above. The challenge is to create synergy between these stakeholders and to establish a coherent approach towards facing the challenge of bioterrorism in relation to the evolving life sciences. Ideally, the BWC would play a substantial role in creating this synergy. That would require the political will of States Parties to make the BWC the centre of a wide network. According to Millet (2011) the BWC has already adopted a network approach in addressing the danger of biological weapons. The BWC intersessional program until 2016 should be used to expand and deepen this network approach. This could lead to a situation in which the BWC would become the hub in which issues as bioterrorism and scientific development are addressed by the most relevant stakeholders. This would make the BWC a 21st century arms control agreement, transcending the current limitations imposed by a narrow focus on states and traditional threats. Developments in this line could imply:

- Structural attention for relevant developments in science and technology;
- Structural attention for new and non-state threats of misuse of life sciences;
- Active involvement and participation of more States Parties;
- More direct involvement of non-state actors (NGO’s, industry, scientists);
- More cooperation with other international organizations and initiatives;

⁶ In the H5N1 debate some references have been made to the BWC. A member of the Dutch Parliament suggested that the possibility of a verification regime for the BWC would have to be reconsidered as one of the means to prevent misuse of scientific research. Given the recent BWC history this proposal does not seem very promising.

References

- Bansak, Kirk C. (2012) A Hinge Moment for the Bwc? *Bulletin of the Atomic Scientists: Web Edition*.
- (2011a) Issues Develop as Bwc Review Approaches. *Arms Control Today* 41 (January/February).
- (2011b) Enhancing Compliance with an Evolving Treaty: A Task for an Improved Bwc Intersessional Process. *Arms Control Today* 41 (June)
- Bekker, Sander. 23 april, 2012 Zulke censuur zie je alleen in Rusland. *Trouw*.
- Biological And Toxins Weapons Convention. (2012) Final Declaration of the Seventh Review Conference.
- Biological Weapons Convention Think Zone for the Seventh Review Conference:
[http://www.unog.ch/80256EE600585943/\(httpPages\)/BF4050089BB59EEDC12579300045A924?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/BF4050089BB59EEDC12579300045A924?OpenDocument)
- Biological Weapons Prevention Project:
<http://www.bwpp.org/revcon-bioterrorism.html>
- Commission on the Prevention of WMD Proliferation and Terrorism. (2008) *World at Risk. The Report of the Commission on the Prevention of Wmd Proliferation and Terrorism*. New York: Vintage Books.
- Epstein, Gerald L. (2012) Biosecurity 2011: Not a Year to Change Minds. *Bulletin of the Atomic Scientists* 68:29-38.
- G8 Action Plan on Non-Proliferation. (2004).
- Herderschee, Gijs. 9 Maart, 2012 Bleker: Recept Vogelgriep Geheim. *de Volkskrant*.
- Kelle, Alexander. (2005) Bioterrorism and the Securitization of Public Health in the United States of America – Implications for Public Health and Biological Weapons Arms Control. Bradford Regime Review Paper No. 2. Bradford: Bradford University.
- Miller, Seumas, Michael J. Selgelid, and Koos Van der Bruggen. (2011) Report on Biosecurity and Dual Use Research. A Report for the Dutch Research Council.
- Millet, Piers. (2011) Why the 2011 Btwc Revcon Might Not Be Business as Usual. In *Beyond the Btwc Revcon*, edited by Kerstin Vignard and Ross McRae, pp. 3-12. Geneva: United Nations Institute for Disarmament Research (UNIDIR).
- Millett, Piers. (2006) The Biological and Toxin Weapons Convention in Context: From Monolith to Keystone. In *Disarmament Forum. Toward a Stronger Btwc*, edited by Kerstin Vignard. Geneva: United Nations Institute for Disarmament Research.
- National Research Council of the National Academies et.al. (2011) *Life Sciences and Related Fields: Trends Relevant to the Biological Weapons Convention. Summary of an International Workshop*. Washington D.C.: The National Academic Press.
- Secretary-General of the United Nations. (2006) *Uniting against Terrorism: Recommendations for a Global Counter-Terrorism Strategy*. New York: United Nations.
- The Secretary of Health and Human Services. (2010) *Charter National*

Science Advisory Board for
Biosecurity. Washington, D.C.

Van der Bruggen, Koos, and Barend Ter
Haar. (2011) *The Future of
Biological Weapons Revisited. A
Concise History of the Biological
and Toxin Weapons Convention*. The

Hague: Netherlands Institute of
International Relations Clingendael.

World Health Organization. (17 February
2012) Public Health, Influenza
Experts Agree H5n1 Research
Critical, but Extend Delay.