UNSCR 1540 LESSONS LEARNED FROM THE 'TENDING' OF THE BIOLOGICAL WEAPONS REGIME

Kofi Annan (third from left) delivers his remarks at the opening of the Sixth Review Conference of the Biological and Toxic Weapons Convention; Credit: UN Photo/ Eskinder Debebe

ABSTRACT

'Tending'[1] United Nations Security Council resolution 1540 (2004) (UNSCR 1540) and expanding its outreach requires several activities and sustained resources. These activities have principally been directed by the 1540 Committee, with the support of a wide range of entities within the United Nations system. Focusing on the regime against biological weapons, this paper will examine changes in implementation measures since the passage of UNSCR 1540 and illustrate how documenting such changes may facilitate States' national implementation. For illustrative purposes, the paper will also look at the evolution of what is required to implement the Biological Weapons Convention (BWC) at the national level, drawing on experience with developing a BWC national implementation measures database to explore evolving requirements related to emerging technologies more specifically.

1 In this context, 'tending' implies giving sustained attention to and proactively ensuring the resolution's implementation.

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* Please note that the opinions expressed in this article are the authors' own, and do not necessarily reflect the views of UNIDIR or the United Nations.

INTRODUCTION

Adopted in 2004, United Nations Security Council resolution 1540 (UNSCR 1540) identifies the proliferation of biological weapons and their means of delivery as a threat to international peace and security. Among other obligations, it encourages States to promote the adoption and implementation of the Biological Weapons Convention (BWC) and foster cooperation within this multilateral framework.[2]

UNSCR 1540 also 'calls upon all States to adopt national rules and regulations (…) to ensure compliance' with international conventions including the BWC. In particular, the resolution stresses the need to adopt domestic measures to establish, among other things, physical protection, border controls and criminal offenses.[3]

The fulfilment of obligations under disarmament treaties and related resolutions is neither automatic nor guaranteed. Rather, such processes require sustained attention and 'tending'. As Charles Flowerree, former US Ambassador for Disarma-

2 S/RES/1540

3 S/RES/1540

ment, remarked: 'The means by which these agreements survive and adapt to changing conditions after they enter into force deserve as much attention as the negotiations that produced them in the first place. They cannot simply be left to fend for themselves.'[4]

Tending to the implementation of UNSCR 1540 requires several activities and sustained resources. These activities have principally been directed by the 1540 Committee, which has led work in this area over nearly two decades. At the same time, there are a wide range of entities within the United Nations system that have also contributed to the implementation of resolution 1540 using various tools and strategies.

Focusing on the regime against biological weapons, this paper will examine changes in implementation measures since the passage of UNSCR 1540 and illustrate collecting and collating data on national activities can facilitate the implementation of such measures to prohibit and prevent such weapons. The paper will also explore the evolution of what is required to implement the BWC at the national level, drawing on experience with developing a BWC national implementation measures database to explore evolving requirements related to emerging and converging technologies.

UNSCR 1540 AND THE BWC

UNSCR 1540 and the BWC are complementary instruments that collectively form the foundations of the global regime against biological weapons. Indeed, UNSCR 1540 'calls upon all States to adopt national rules and regulations (…) to ensure compliance'[5] with international conventions including the BWC. In particular, the resolution stresses the need to adopt domestic measures to establish physical protection of related materials, border controls and criminal offenses.[6] These actions are primarily focused on preventing the development of biological weapons by non-State actors.

The 1972 BWC was negotiated by and for States. Nonetheless, Article IV of the BWC states:

> *'Each State Party to this Convention shall, in accordance with its constitutional processes, take any necessary measures to prohibit and prevent the development, production, stockpiling, acquisition or retention of the agents, toxins, weapons, equipment and means of delivery specified in Article I of the Convention, within the territory of such State, under its jurisdiction or under its control anywhere'.*[7]

Ahead of the Ninth BWC Review Conference in 2022, the BWC Implementation Support Unit (ISU) prepared a document compiling additional understandings and agreements from past Review Conferences.[8] This document

4 Charles C. Flowerree, 'On Tending Arms Control Agreements' in *The Washington Quarterly,* Volume 13, 1990, Issue 1, 199-214.

5 S/RES/1540

6 S/RES/1540

7 Biological Weapons Convention, 10 April 1972, available at : https://front.un-arm.org/wp-content/uploads/2020/12/BWC-text-English-1.pdf.

8 BWC/CONF.IX/PC/5

provides insights into the evolution of States Parties' perspectives on national implementation of the BWC and illustrates how, over time, new expectations under Article IV have emerged,[9] including, for example, the establishment of national focal points and the growing interest around biosafety and biosecurity measures.

Table 1 Additional understandings agreed at BWC Review Conferences under Article IV as reflected in BWC/CONF.IX/PC/5

Theme	Review Conference								
	1	2	3	4	5[10]	6	7	8	9[11]
National focal points					-	X	X	X	-
Extraterritorial application			X	X	-	X	X	X	-
Physical protection		X	X	X	-				-
Penal legislation, designed to (…) ensure safety and security					-	X	X	X	-
Voluntary management standards on biosafety and biosecurity					-		X	X	-
Promote awareness of BWC					-		X	X	-
Promotion of a culture of responsibility					-		X	X	-
Inclusion in educational materials of (…) information on the BWC		X	X	X	-	X			-
Training and education programmes					-	X	X	X	-
Promote awareness among relevant professionals					-		X	X	-
Codes of Conduct					-	X			-
National measures to strengthen methods and capacities for surveillance and detection of outbreaks of disease					-	X	X	X	-
Information provided to the United Nations by States in accordance with resolution 1540 (2004) may provide a useful resource					-	X	X	X	-

9 BWC/CONF.IX/PC/5

10 No additional understandings were agreed at the Fifth BWC Review Conference

11 No additional understandings were agreed at the Ninth BWC Review Conference

Furthermore, the document points to additional understandings reached on the need for voluntary management standards on biosafety and biosecurity, as well as codes of conduct, education, and awareness raising activities among the scientific community.[12] Following the enactment of UNSCR 1540 in 2004, the Sixth (2006), Seventh (2011) and Eighth (2016) BWC Review Conferences explicitly recognized the interconnections between the BWC and UNSCR 1540, which BWC States Parties recognized as 'a useful resource for States Parties' in the implementation of Article IV.[13]

UNSCR 1540 and the BWC thus inform each other on key aspects of implementation. This has significant positive implications for the evolution of common understanding on best practices and relevant measures to reinforce the global regime against biological weapons.

THE KEY ROLE OF OUTREACH FOR NATIONAL IMPLEMENTATION

Member States are asked to share information on these measures with the 1540 Committee, and the information received is then summarized by the Committee in a matrix. Since the adoption of UNSCR 1540, there is evidence of considerable progress in the implementation of the biological dimension of

12 BWC/CONF.IX/PC/5

13 BWC/CONF.IX/PC/5

Consultant Experts on Chemical and Bacteriological (Biological) Weapons Holds Session in January 1969; Credit: UN Photo

the resolution. For example, the latest 2022 Comprehensive Review on the status of implementation of Security Council resolution 1540 notes that "74 per cent of the laws and enforcement measures required under paragraph 2 in relation to biological weapons were recorded. This represents an increase of around 9 per cent compared with 2016".[14]

Beyond the quantitative growth in the number of States implementing UNSCR 1540, the last two decades have seen a qualitative expansion of the types of measures undertaken by States. The current matrix includes information on, *inter alia*, national legislation prohibiting the possession of biological weapons, measures to secure the storage of related materials, the registration of facilities, end-user controls and points of contact.[15] This was not the case in the early days of the resolution when reports contained uneven and partial information on implementation.

Different factors may explain this shift, including national concerns over bioterrorism resulting from the advance and diffusion of technologies. However, outreach strategies undertaken by the 1540 Committee and other UN entities have also played an important role. In the case of the global regime against biological weapons, UNSCR 1540 and BWC related outreach activities have been critical in shaping thinking around best practices and implementation measures. Trainings and other awareness-raising events have encouraged States to be more transparent and adopt relevant national legislation by using matrices and fostering information sharing.

The spectrum of biological risks has, however, evolved over the course of the last two decades and so has the scope of 'necessary measures to prohibit and prevent' biological weapons at the national level and reinforce the international regime. For example, the digitization of DNA data and the increasing convergence of biological and cyber systems is leading to emerging interest in cyber-biosecurity and the prevention of digital 'information hazards'. This is compounded by an increase in the number of actors and facilities working with biological agents and toxins over this period.

Implementation measures have evolved to address elements of this challenge, as reflected in the growth of additional understandings under Article IV reached by States Parties to the BWC. However, the pace of evolution of implementation measures is at risk of being outpaced by technological advancements. For instance, there is growing concern over cyber-biosecurity risks emerging from the growing reliance on cyber tools and cyber-physical systems in various infrastructures, such as laboratories, hospitals and biological product production facilities.[16] Yet, very few countries have implemented cyber-biosecurity measures and they do not form part of the measures considered in the 1540 matrices or the BWC Article IV Additional Understandings.

14 S/2022/899

15 United Nations, 1540 Committee, '1540 Matrices', available at : https://www.un.org/en/sc/1540/national-implementation/1540-matrices.shtml.

16 Siguna Mueller, 'Facing the 2020 pandemic : What does cyberbiosecurity want us to know to safeguard the future ?' in *Biosafety and Health*, Volume 3, Issue 1, February 2021, 11-21.

Moreover, the 1540 Committee and the BWC ISU have limited resources and lack the mandate to push forward major additions to the areas of implementation.

OUTREACH EXPANSION

The implementation of UNSCR 1540 and the BWC does not operate in a vacuum, but is supported by a number of tools and activities undertaken by other entities. The work of such actors can be useful in sustaining the resolution and reinforcing the broader international regime against biological weapons.

The World Health Organization (WHO), for example, has advanced work on dual-use research governance, including through the publication of a Global Guidance Framework for the Responsible Use of the Life Sciences;[17] the United Nations Interregional Crime and Justice Research Institute (UNICRI) has "taken steps to enhance biosafety and biosecurity" through its Chemical, Biological, Radiological and Nuclear (CBRN) Risk Mitigation and Security Governance Programme;[18] the United Nations Office for Disarmament Affairs (UNODA) has launched several initiatives designed to promote effective

17 World Health Organization, *Global guidance framework for the responsible use of the life sciences: mitigating biorisks and governing dual-use research*, 13 September 2022.

18 James Revill, Vivienne Zhang and María Garzón Maceda, 'Stakeholders perspectives on the Biological Weapons Convention', UNIDIR, 2022.

Secretary-General meets with President-designate of Ninth Review Conference of Biological Weapons Convention; Credit: UN Photo/Ariana Lindquist

implementation of the BWC, including a four-year initiative supporting universalization and effective implementation of the BWC in Africa;[19] and in 2023, the United Nations Institute for Disarmament Research (UNIDIR) and the Verification Research, Training and Information Centre (VERTIC) launched the BWC National Implementation Measures Database, which collects information on measures adopted by States Parties to the BWC and makes it available in the six official UN languages.[20] Drawing from open-source material, this database includes country summaries of, *inter alia*, prohibitions, export and transfer controls, biosafety and biosecurity measures, as well as measures on international cooperation along with links to official sources from government websites.

Cybersecurity measures are defined, for the purpose of the database as: 'measures aimed at preventing harmful or intrusive activities related to information and communication technologies against facilities where activities involving biological agents and toxins are conducted.'[21] While the database is not a ranking or enforcing tool, the availability of open source information can help States to broaden and deepen national measures to prohibit and prevent biological weapon proliferation.

CONCLUSION

There has been considerable progress in the implementation of national measures since the passage of UNSCR 1540, which has taken place at the same time as broader activities by a range of UN entities to strengthen the global regime against biological weapons. In view of the expansion of biological risks, notably those related to the development of emerging technologies, UNSCR 1540's general call for the prevention of proliferation to and by non-State actors remains enduringly pertinent for States seeking to prevent the spread of biological weapons-related capabilities. Equally, risk reduction measures recommended by the BWC and other international instruments continue to build upon the foundations laid by UNSCR 1540. In this context, 'tending' the resolution and sustaining outreach through the work of other UN entities remains critical.

> **"The spectrum of biological risks has [...] evolved over the course of the last two decades"**

19 UNODA, Global Partnership Support, available at https://disarmament.unoda.org/global-partnership-support/ (accessed on 20 February 2024).

20 UNIDIR and VERTIC, Biological Weapons Convention National Implementation Measures Database, available at: https://bwcimplementation.org/ (accessed on 20 February 2024).

21 UNIDIR and VERTIC, 'Glossary', Biological Weapons Convention National Implementation Measures Database, available at: https://bwcimplementation.org/ (accessed on 20 February 2024).