

Options for International Cooperation under Article X of the Biological Weapons Convention



ACKNOWLEDGEMENTS

Support from UNIDIR core funders provides the foundation for all of the Institute's activities. This project is supported by the Government of Norway. UNIDIR would also like to thank Alex Lampalzar, Ngoc Phuong Van Der Blij and Eleanor Krabill for their support in editing this paper.

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CITATION

James Revill and María Garzón Maceda (eds.), "Options for International Cooperation under Article X of the Biological Weapons Convention", UNIDIR, Geneva, 2022.
<https://doi.org/10.37559/WMD/21/BWC/04>.

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Abbreviations and acronyms

APM	Anti-Personnel Mine (Convention)
BWC	Biological and Toxin Weapons Convention
CBM	Confidence-building measure
CCM	Convention on Cluster Munitions
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organization
CWC	Chemical Weapons Convention
IABS	International agency for biosafety
ISU	Implementation Support Unit
NAM	Non-Aligned Movement
NDC	Nationally determined contribution
NPT	Non-Proliferation Treaty
OIE	World Organisation for Animal Health
OPCW	Organisation for the Prohibition of Chemical Weapons
SDG	Sustainable Development Goal
TFM	Technology Facilitation Mechanism
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WMD	Weapons of mass destruction



Summary

Progress in international cooperation under Article X of the Biological and Toxin Weapons Convention (BWC) is a prerequisite for success at the Ninth BWC Review Conference. This requires fresh thinking around options for Article X. To this end, UNIDIR sought input from a diverse range of experts on ideas for advancing Article X, with a particular

focus on the promotional aspects of this important article. These contributions reflect the personal views of the respective authors. Building on the contributions of authors, this report outlines 10 concrete ideas for the BWC States parties to consider in seeking to enhance the implementation of Article X.

	Standardize Article X reports and scrutinize these reports to determine challenges and priorities
	Establish a voluntary fund to promote peaceful cooperation, with contributions from States, private sector actors and non-governmental implementing entities
	Undertake a systematic review of existing cooperation to spot gaps, identify priorities and explore problems related to international cooperation
	Establish a cooperation entity to better understand – and respond to – challenges related to the implementation of Article X
	Foster track-2 relations and build an informed and active global community of life scientists involved in diplomacy
	Use Article X as a vehicle for cooperation around education and awareness-raising activities , including through a platform for regular exchanges of best practices
	Use Article X to facilitate capacity building in low-resource and developing countries to prevent and respond to public health emergencies
	Develop a matchmaking capacity to engage requestors and providers of cooperation along with a feedback mechanism to optimize the matchmaking system
	Develop tailored region-specific models for international cooperation that consider local context and challenges
	Develop mechanisms to coordinate and connect Article X implementation with wider activities, including the Sustainable Development Goals
	Build the necessary institutional support required to implement Article X and facilitate international cooperation through the BWC more effectively

M. KHAN

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1. Introduction

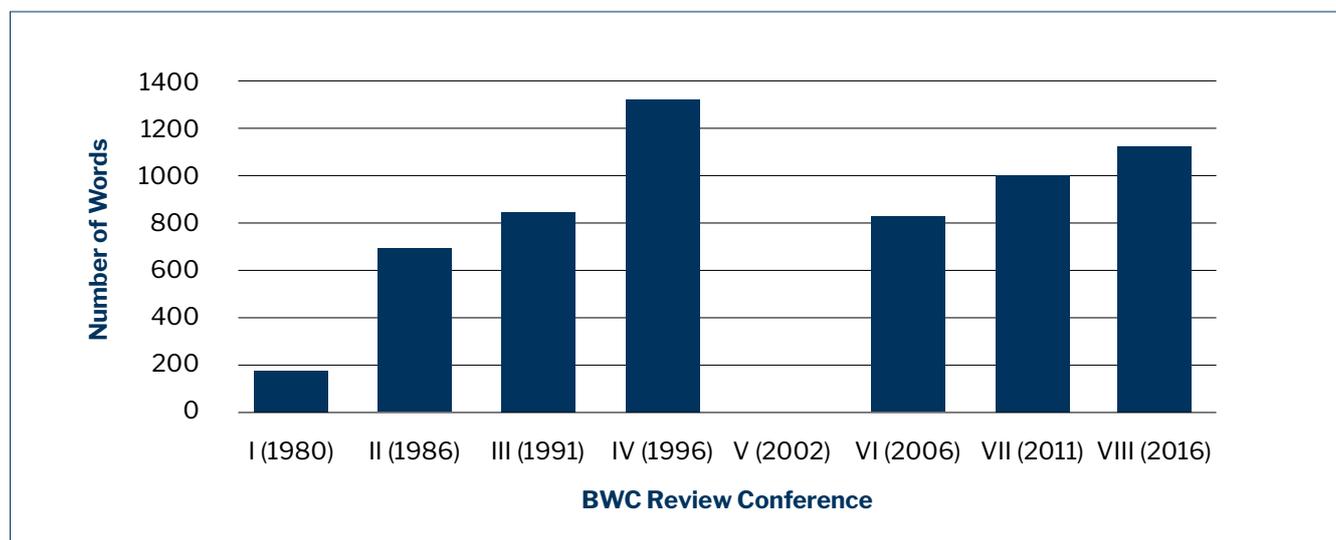
Article X of the 1972 Biological and Toxin Weapons Convention (BWC) states that:

- (1) The States Parties to this Convention undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes. Parties to the Convention in a position to do so shall also co-operate in contributing individually or together with other States or international organisations to the further development and application of scientific discoveries in the field of bacteriology (biology) for the prevention of disease, or for other peaceful purposes.
- (2) This Convention shall be implemented in a manner designed to avoid hampering the economic or technological development

of States Parties to the Convention or international co-operation in the field of peaceful bacteriological (biological) activities, including the international exchange of bacteriological (biological) agents and toxins and equipment for the processing, use or production of bacteriological (biological) agents and toxins for peaceful purposes in accordance with the provisions of the Convention.

This article was given limited attention during the negotiation of the treaty. However, over the course of the evolution of the BWC, Article X has become increasingly important as a result of evolving BWC politics and wider trends and developments. It has also become increasingly divisive, as has been made evident in successive BWC Review Conferences (see figure 1).

Figure 1. Number of Words on Additional Understandings for Article X in the Final Documents of BWC Review Conferences



The competition for public health resources over the course of the COVID-19 pandemic combined with wider geostrategic tensions suggest that Article X will almost certainly be a contentious topic at the Ninth BWC Review Conference in August 2022. To mitigate this challenge, fresh thinking is required ahead of the Review Conference on concrete options for Article X.

To this end, this report is designed to provide States parties with ideas for consideration in seeking to advance Article X. It is based on input from a diverse range of experts from Argentina, Australia, Finland, Germany, the Islamic Republic of Iran, the Russian Federa-

tion, Sudan, the United States of America and Zimbabwe who were each asked to submit ideas for advancing Article X. These contributions reflect the personal views of the respective authors; they should not be seen as a reflection of the views of UNIDIR or the United Nations. Moreover, in several cases, authors fundamentally disagree in both their interpretation of Article X and what should be done to advance it. As such, the authors are responsible only for the remarks in their respective sections of the report.

Table 1 presents the editors' summary of the results of this process, identifying options for Article X along with some provisional analysis.

Table 1. Summary of options for Article X

<p>Capacity building in public health security</p>	<p>Mohammadi suggests that implementation of Article X should be part of a wider programme of action involving multiple stakeholders designed to build capacity in low-resource and developing countries to prevent and respond to public health emergencies. Such a programme could involve the mapping to public health response capacities and developing a public health risk-management plan. This would lead to enhanced global public health security.</p>
<p>Develop a road map to connect the BWC to wider issues</p>	<p>Malygina suggests that Article X activities should be coordinated and connected with wider activities, including measures undertaken under the sustainable development programmes and wider initiatives such as the Technology Facilitation Mechanism (TFM) developed as part of the 2030 Agenda for Sustainable Development. The TFM is of particular note as it offers an online platform for information on existing science, technology and innovation for the Sustainable Development Goals (SDGs) that could be mined for possible Article X linkages. For Malygina, teasing out interconnections between biological risks and wider trends in areas such as climate change could help better understand the scale of an evolving challenge.</p>
<p>Develop and use Article X reports</p>	<p>Jeremias, Malinen and Moodie draw attention to the importance of national Article X reports, which some States parties have submitted to recent Review Conferences. Malinen suggests that these reports should be subject to more scrutiny and standardized through the establishment of common guidelines. Jeremias and Moodie both suggest that these reports should be structured to facilitate a clearer understanding of the needs of States parties. Moodie goes further, suggesting that this reporting could be made a politically binding obligation and that the reports should include information on current and planned cooperation as well as information on export control denials to help identify trends related to Article X, including in the area of export laws.</p>

Table 1. *continued*

<p>Enhance education and awareness raising</p>	<p>Several contributors highlight the potential of Article X as a vehicle for cooperation around education and awareness-raising activities. There are several variations on this theme: Ndongwe suggests that Article X could feed into a universal education programme around public health best practices, including practices to deal with disinformation. Ameneiros identifies a role for Article X in fostering cooperation between universities on issues such as bioethics. Malygina suggests Article X activities could include the establishment of a platform for more regular exchanges of best practices and improving educational resources on BWC issues.</p>
<p>Enact consultative procedures</p>	<p>Measures to address export control denials are a long-standing component of demands from the Non-Aligned Movement (NAM) related to the BWC. Yet, as Revill and Garzón Maceda point out, routes to partially address specific export control grievances may already exist. For example, through Article V, the BWC provides a mechanism for consultation and coordination around any issues that may emerge in relation to the implementation or objectives of the BWC. This is unlikely to be enough to satisfy all States, but it does provide one avenue open to States parties to move the debate forward.</p>
<p>Establish a cooperation committee</p>	<p>Drawing on her wider experience in other regimes, Mohammed identifies several challenges to international cooperation, including the inability of some to identify gaps, competing national priorities and defective matchmaking. Lennane argues that challenges in the implementation of Article X are a systemic problem, rather than the result of governmental politics or individual decisions. Accordingly, he proposes the establishment of a cooperation working group or committee to better understand challenges related to the implementation of Article X and develop recommendations to respond to such challenges.</p>
<p>Establish a voluntary fund</p>	<p>Drawing on practices in the Anti-Personnel Mine (APM) Convention, Moodie raises the idea of establishing a voluntary fund to promote peaceful cooperation under the BWC. Through such a fund, governments, along with private sector actors, could contribute to activities under Article X. Mohammed also suggest considering a role for non-governmental implementing entities in the cooperation and assistance framework, highlighting precedents in other regimes.</p>
<p>Foster a global community of scientists for policy</p>	<p>The BWC has long served a convening function for various stakeholders. Ameneiros takes this a step further by suggesting that Article X could be a vehicle to foster track-2 relations and build a community of “scientists involved in diplomacy”. Of particular importance for Ameneiros, a participant in the Biosecurity Diplomacy Workshop for Young Scientists from the Global South, is bringing young leaders into the discussion to foster interaction between scientists and diplomats at different levels.</p>

Table 1. *continued*

Full-cycle match-making	Drawing from her experience with the provision of assistance in other regimes, Mohammed suggests that the BWC Implementation Support Unit (ISU) could be mandated and resourced to effectively engage requestors and providers of cooperation – both formally and informally – to achieve successful matches. This could be augmented with follow-up and feedback mechanisms to optimize the matchmaking system. Such a matchmaking process might also benefit from exploring opportunities beyond the BWC, for example opportunities provided through the TFM.
Systematic review cooperation	Several authors point to the importance of some form of systematic review of existing cooperation. Malygina suggests undertaking a review process to spot the gaps and overlaps in existing cooperation activities. Jeremias suggests that there could be value in surveying States parties to better understand priorities. Lennane suggests exploring the extent and magnitude of what he views as a systemic problem under Article X and recommending specific measures to ameliorate it.
Tailored cooperation plan	Malygina suggests that cooperation should address economic, social and ecological considerations of different regions of the world. Mohammed goes further, drawing on the model of the Africa Programme of the Organisation for the Prohibition of Chemical Weapons (OPCW) to suggest tailoring region-specific models that are suited for the context and delivered through iterative programmes.
Remedy the institutional deficit	As several authors note, further institutional activities related to Article X are unlikely to be feasible with the current three-person ISU. As such, more effective implementation of Article X will probably require increased resources. As Ndongwe points out, building an operational technical secretariat could play a valuable role in more proactively fostering cooperation and knowledge transfer. These could potentially draw on programmes from other regimes, such as the OPCW. Malinen, meanwhile, considers some of the components in Kazakhstan’s proposal for an International Agency for Biosafety (IABS).

2. Options for Article X: what are we aiming to address, and what lessons can be drawn from other regimes?

Amanda Moodie

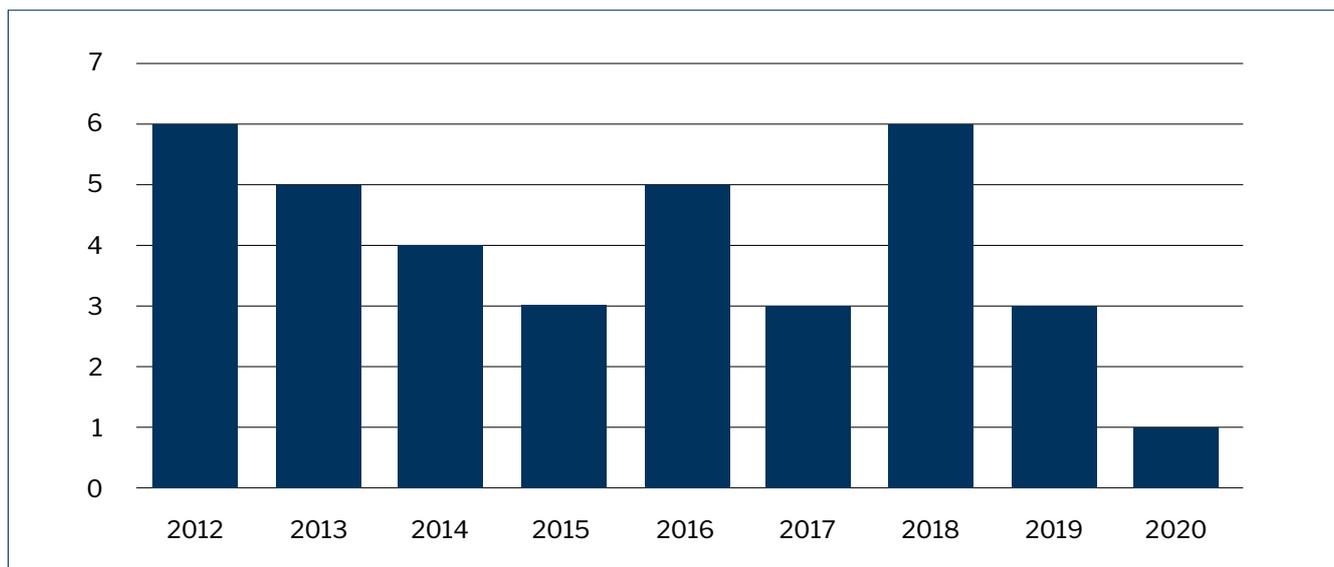
While the Biological and Toxin Weapons Convention (BWC) is ultimately a disarmament treaty, not a development-assistance tool, States parties nevertheless have an obligation to facilitate assistance and cooperation. This obligation cannot be ignored, although it does give rise to some fundamental questions:

- Is there agreement on exactly what constitutes fulfilment of a State party's obligation under Article X? If not, how can we reach such agreement?
- What is the right balance between individual State-led efforts to promote cooperation and collective efforts at the international or multilateral level?
- How do we collect data about what individual States are doing?
- Where does the BWC add value to other cooperation mechanisms? What are the things that can be done under Article X that are not well covered under other treaties or arrangements?
- Given that governments (usually) cannot compel the private sector to transfer technology or proprietary information, what can they do to encourage private-sector investment or other partnerships? Does private-sector cooperation fulfil the Article X obligation?
- What are the effects of export licensing arrangements on transfers of peaceful science and technology?

It is possible that the experiences of international cooperation under other treaty regimes may provide some tools to help answer these questions.

In terms of the first three questions, the 1992 United Nations Framework Convention on Climate Change (UNFCCC) may offer some useful lessons. The UNFCCC acknowledges that the global nature of climate change requires countries to cooperate to develop an appropriate response, but also specifically reaffirms the sovereignty of States to develop their own plans for how to implement the Convention, including through international cooperation. To accomplish this, the UNFCCC requires that each country outline and communicate their actions related to achieving the goals of the treaty in submissions known as nationally determined contributions (NDCs). These NDCs include information about each State's plans for partnership and cooperation with other States, as well as details about what types of cooperation and assistance they would find most valuable, including quantitative estimates of how much financial support would be needed to implement their plans. Implementing a similar approach under the BWC – that is, requiring States to submit details about their plans to provide assistance and cooperation and about activities they are undertaking – could be helpful in collecting data about what States are doing through bilateral or regional partnerships. This is arguably the central purpose of the Article X reports that States parties are currently encouraged to submit. Since that obligation was introduced in 2011, relatively few States have done so (see figure 2). Reframing these reports as a means for States to maintain their sovereignty while fulfilling their Article X obligation – and making the requirement to submit such reports a politically binding obligation similar to BWC Confidence-Building Measures (CBMs) – could help to make these reports more useful.

Figure 2. Article X Reports submitted, by year¹



The 1997 Anti-Personnel Mine (APM) Convention and the 2008 Convention on Cluster Munitions (CCM) might be instructive in answering the next two questions. While these treaties are not directly analogous to the BWC – their cooperation and assistance provisions are about helping States comply with their treaty obligations rather than about peaceful uses outside the scope of the treaty – their language is nevertheless instructive. For example, the APM Convention notes that, in addition to providing assistance through the United Nations System or bilaterally, States parties can contribute to the United Nations Voluntary Trust Fund for Assistance in Mine Action or other regional funds. The United Nations fund can also accept financial contributions from the private sector as well as in-kind secondments of experts in explosive ordnance disposal and removal and partnerships with private companies to supply equipment to deminers.² Perhaps it would be possible for BWC States parties to set up a similar

voluntary fund to promote peaceful cooperation, and governments could encourage the private sector to make contributions to such a fund in addition to their direct investments.

Most of the conventions on landmines and cluster munitions, including the APM Convention, its Oslo Action Plan, and the CCM, incorporate language requiring States parties to submit reports detailing the number of mines they possess, national implementation measures, their progress in decommissioning the mines, and so on. They can also voluntarily opt to provide information on assistance provided to other States parties or on assistance they have received and how it has been used. This could provide valuable lessons for the BWC. Currently, reports on national implementation measures or other efforts to implement the Convention are submitted as part of CBMs, while reports on Article X assistance are a separate process. Greater harmonization between these two efforts could be useful in terms of identifying

1 Note that some reports are submitted by multiple States.

2 UN Mine Action Service, “How We Are Funded”, <https://www.unmas.org/en/how-we-are-funded>.

what types of assistance would be most valuable to States parties. Some might argue that such linkages are misplaced, as the BWC's obligation to provide assistance does not require that that assistance relate directly to the objectives of the treaty, unlike the landmine and cluster munitions conventions. However, such harmonization could help to ensure that assistance provided under the BWC does not duplicate efforts being undertaken elsewhere, such as under the International Health Regulations or by the International Atomic Energy Agency (IAEA).

The final question may be the easiest to answer. The United States provides details in its biennial Article X report on the proportion of biotechnology and life sciences exports that are subject to the US Department of

Commerce's export licensing requirements³ As we think about how to make these reports more useful, perhaps other States parties could be encouraged to provide similar information, or even additional details such as information on licensing denials. This may help provide a better understanding of whether export controls are having a negative effect on Article X cooperation. Although previous efforts to create a common format or template for Article X reports have been met with resistance from some States parties,⁴ such templates could be beneficial in helping States parties compile their report, by providing greater understanding of their specific needs and identifying trends, including in the area of export laws.

3 See, for example, Biological Weapons Convention, "Report on Implementation of Article X of the Biological and Toxin Weapons Convention", Working Paper Submitted by the United States of America, BWC/MSP/2020/MX.1/WP.1, 17 December 2020, <https://undocs.org/BWC/MSP/2020/MX.1/WP.1>.

4 Reaching Critical Will, "Report on the 2019 Meetings of Experts of the Biological Weapons Convention", 14 August 2019. <https://www.reachingcriticalwill.org/news/latest-news/14015-report-on-the-2019-meetings-of-experts-of-the-biological-weapons-convention#mx1>.



3. Connecting Article X to the problems of the 21st century Anastasia Malygina

Over the four and a half decades since the Biological and Toxin Weapons Convention (BWC) entered into force, the problem of biosecurity has become significantly broader than was envisaged by the Convention's architects. The BWC was designed as an instrument of disarmament, but it should not lose its effectiveness in the 21st century, when the problems of public health, food safety and biodiversity have become as pressing as ever.

Article X of the BWC may serve as an umbrella for developing innovative scientific and administrative solutions to meet the Sustainable Development Goals (SDGs). In this regard, States parties to the BWC may adopt a road map that will connect Article X with the 1992 Convention on Biological Diversity,⁵ its 2000 Cartagena Protocol on Biosafety,⁶ and the 1992 Rio Declaration on Environment and Development.⁷ International scientific and technical cooperation in the context of Article X of the BWC should address economic, social and ecological considerations of different regions of the world.

A process to review cooperation in the context of Article X may spot the gaps and overlaps in the programmes undertaken by different international organizations and other actors. Of particular note here could be exploring the connections between Article X and the Technology Facilitation Mechanism (TFM) outlined in the 2030 Agenda for

Sustainable Development, which, among other things, is designed to support the achievement of the SDGs and strengthen coherence and synergies among science and technology initiatives within the United Nations System.⁸ Increased coordination of the programmes will create synergies that may reduce costs and improve the effectiveness of collective efforts. Subsequently, States parties to the BWC may consider applying the Article X database to connect innovative research and development teams and business entrepreneurs with local needs. There is also a need to detect the weaknesses in national and regional institutional capacities that serve as an impediment to expanding international cooperation under Article X.

Article X cooperation may address biological risks occurring due to global climate change or urbanization. For instance, global climate change increases the risks of natural disasters, which may trigger infectious disease outbreaks among people and animals. Political instabilities and armed conflicts in urban areas also increase the risk of disease outbreaks. Another topic that requires collective attention and a comprehensive approach is the problem of waste management.

Reducing risks of bioterrorism against people, plants, animals and all types of water environment fits in the context of Article X cooperation. The diplomatic dialogue aimed at developing and adopting a convention on the

5 Convention on Biological Diversity, 5 June 1992, <https://www.cbd.int/convention/text>.

6 Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 29 January 2000, <https://www.cbd.int/doc/legal/cartagena-protocol-en.pdf>.

7 United Nations Conference on Environment and Development, "Rio Declaration on Environment and Development", 3–14 June 1992, [https://undocs.org/en/A/CONF.151/26/Rev.1\(vol.I\)](https://undocs.org/en/A/CONF.151/26/Rev.1(vol.I)).

8 United Nations Environment Programme, "Technology Facilitation Mechanism", <https://www.unep.org/explore-topics/technology/what-we-do/technology-facilitation-mechanism>.

suppression of acts of chemical and biological terrorism should continue.⁹ However, the lack of progress in this field must not prevent the States parties to the BWC from cooperating to protect hospitals, laboratories and other facilities that may pose a potential biohazard against acts of terrorism, including cyberterrorism.

At the Ninth BWC Review Conference, the States parties to the BWC could initiate a road map on biosecurity and non-proliferation education under Article X. To identify appropriate approaches and methods, they might consider the best practices of the International Atomic Energy Agency (IAEA), the Organisation for the Prohibition of Chemical Weapons (OPCW), the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) and the United Nations Interregional Crime and Justice Research Institute (UNICRI). Moreover, the existing United Nations formats may be filled up with new BWC-related content. For example, every two years, the General Assembly considers a disarmament and non-proliferation education report presented by the Secretary-General. BWC-related education could be reviewed more attentively and comprehensively in these

reports. In 1980, UNESCO held the World Congress on Disarmament Education. In 2001, UNIDIR hosted a disarmament forum with a focus on education. In the 2010s, the CTBTO Preparatory Commission hosted the CTBTO Academic Forum for several years in a row, which served as a link between social science and the science and technology communities.

This experience deserves attentive consideration. BWC-related educational programmes should be based on inclusiveness (equal representation of views of different regions of the world), multidisciplinary (balance of social and natural sciences) and freedom from politicization in all aspects. As part of the BWC review process, it would be possible to collect information about educational resources on the BWC issues already available in different regions of the world and then initiate a platform for regular exchange of best practices and improving teaching materials. In the 1990s, Russian and US specialists jointly prepared a bilingual biosafety and biosecurity glossary. This initiative could be revived and implemented in several languages. Work on such a glossary could reveal differences and similarities in national approaches and concepts.

9 United Nations, "Conference on Disarmament Hears from Russia on Draft Convention for Suppression of Chemical and Biological Terrorism", 4 August 2016, <https://www.un.org/en/news-media/press/taxonomy/term/175/47658/conference-disarmament-hears-russia-draft-convention>.

4. A practical proposal for Article X: taking a serious look at “Hampering” Richard Lennane

Throughout the history of the Biological and Toxin Weapons Convention (BWC), Article X has generated a lot of controversy and rhetoric among States parties, but surprisingly few concrete proposals. Even in the draft Protocol text (the “Composite Text”) presented towards the end of the Ad Hoc Group process in 2000, the provisions relating to strengthening the implementation of Article X were rather general and vague.¹⁰ On the rare occasions when specific, detailed proposals have been adopted at Review Conferences, they have proved disappointing in operation: the Article X database set up to match offers of and requests for assistance has been little used, and the adoption of a “standing agenda item” on Article X for the 2012–2015 inter-sessional work programme worked more as a forum for discussion of demands for the establishment of a “mechanism to implement Article X”, rather than functioning as such a mechanism itself.

This history suggests that there is a lack of concrete, workable ideas that actually meet the interests at stake. This is despite the keen and legitimate interest in improving Article X implementation among many States parties, particularly developing countries, and the sometimes grudging and unenthusiastic but nevertheless mostly sincere acknowledgment of the importance of the article among most developed States parties. Part of the reason for this is suspicion and distrust: it does not help that the loudest voices in the Article X debate over the years – on both sides – have been those countries involved in bilateral grievances and disputes. This has (understandably) focused thinking and discussion on political hotspots, sanctions

and embargoes, and other points of tension. These are certainly dramatic and may (sometimes) be important to the wider global security picture, but they represent only a small fraction of the global membership of the BWC. Thus, when reacting to calls for a “cooperation committee” or a “mechanism to implement Article X”, Western countries reflexively envision a scenario where their national export control decisions concerning exports of biological material or equipment to the “rogue state” *du jour* are overturned by some international tribunal. This fear in turn leads to responses that make the large majority of developing countries feel that their legitimate concerns about Article X implementation are being dismissed.

One way around this would be for the BWC States parties to make a deliberate effort to consider the middle ground rather than continually and fruitlessly obsessing about the extremities. In this space there is both scope for practical action, and a pressing need for it.

The second paragraph of Article X states that implementation of the BWC shall “avoid hampering the economic or technological development of States Parties to the Convention or international co-operation in the field of peaceful bacteriological (biological) activities”. All States parties of course claim that they are indeed implementing the BWC in such a manner. But it is an uncomfortable fact that even if all States parties have, in good faith, designed their implementation of the BWC to avoid hampering economic and technological development of States parties and international cooperation in biology, such hampering is nonetheless taking place.

10 Biological Weapons Convention, “Protocol to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction”, BWC/AHG/CRP.08, 30 May 2001, <https://undocs.org/BWC/ADHOCGROUP/CRP.8>.

This has long been apparent to any impartial observer involved in global public health. Health workers, researchers and officials in many developing countries routinely encounter difficulties in obtaining needed biological agents (e.g., diagnostic reagents) and equipment. This is almost never due to export licences actually being denied by the supplying countries, but rather by an insidious combination of what might be described as emergent behaviour deriving from the existence and operation of export controls, other measures for the non-proliferation of weapon of mass destruction (WMD), and various transport safety and security regulations. That is, suppliers of biological agents (for example) are discouraged or inhibited from exporting to many developing countries for the following reasons:

- Obtaining an export licence, even if it is certain to be granted, involves too much time, expense or bureaucracy to be worthwhile, especially for a small order.
- Suppliers may not bother even to apply for a licence if there is any question at all over whether it will be granted. (One reason Western countries can typically cite a tiny number of export licence denials is that companies will generally not apply unless they are sure of approval.)
- Freight carriers often deal with potentially problematic cargo – such as that subject to WMD non-proliferation controls or biosafety or biosecurity restrictions – by simply refusing to carry it, especially to less profitable destinations.

The overall effect is a systemic problem, not directly linked to any single government's policy or individual decisions. It is certainly not the case that Western governments are deliberately trying to hamper the access of health workers in developing countries to

diagnostic reagents. But the access is being hampered, and claims of good intentions, good faith and compliance with the letter of Article X are not going to fix that. The significance of the phenomenon has been greatly amplified in recent months by the COVID-19 pandemic, which has highlighted the systemic problems that impede equitable access by developing countries to vaccines, diagnostics, protective equipment and other resources needed to control the pandemic in the global interest.

The BWC States parties could and should take action to address this problem, in a cooperative open-minded and pragmatic way, on an assumption of good faith and without resorting to finger-pointing and attributing blame. A reasonable way to approach this would be to establish some entity, activity or programme under the Convention to examine and explore the extent and magnitude of the problem, and to recommend specific measures to ameliorate it. This entity or activity could take the form of a working group or committee – if not the “cooperation committee” discussed in the Protocol negotiations (and reiterated in the Non-Aligned Movement (NAM) action plan¹¹) – consisting of representatives of States parties; or a group of technical experts appointed in their personal capacities (akin to a scientific advisory board); or an agenda item or otherwise designated component of a new intersessional work programme; or something else. The mandate of the enterprise could contain the following elements:

- To study any factors which are impeding access by States parties to biological agents and equipment needed for peaceful purposes, and to collect quantitative data on the extent and impact of these factors

11 Biological Weapons Convention, “BWC Article X Compliance Mechanism for the Eighth Review Conference”, Working Paper Submitted by Venezuela on behalf of the Group of the Non-Aligned Movement and Other States, BWC/CONFVIII/WP.23, 9 November 2016, <https://undocs.org/BWC/CONFVIII/WP.23>.

- To analyse and assess any systemic or structural problems that may be impeding international cooperation in biological science and technology, particularly in areas concerning public health and the prevention of and response to outbreaks of infectious disease
- To consider, elaborate and recommend to States parties possible measures to address the identified factors and problems in the interests of improving access to biological agents and equipment needed for peaceful purposes, increasing international cooperation in biological science and technology, and strengthening the implementation of Article X

The mandate should also make clear that the purpose of the exercise is not to examine or criticize individual national export control decisions, or to consider bilateral disputes or

specific instances of United Nations Security Council sanctions, etc. The mandate should also emphasize the importance of the effective implementation of Article III to ensure that direct and indirect transfers relevant to the BWC, to any recipient whatsoever, are authorized only when the intended use is for purposes not prohibited under the Convention.

This proposal contains nothing very dangerous or radical. But, given the long and sometimes bitter history of the Article X controversy in the BWC, getting it agreed will require a high degree of political resolve and engagement from the (large number of) States parties that occupy the middle ground on the issue.

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5. Understanding expectations of Article X

Gunnar Jeremias

The concept of a “cooperation pillar” was first introduced under Article III of the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT), negotiated four years before the Biological and Toxin Weapons Convention (BWC) was finalized. This pillar of the NPT was based on the concept of “atoms for peace”, which anticipated that nuclear technology would soon play a crucial role in energy production and, as such, a cooperative pillar could provide incentives for States that lacked such technology to join the NPT.¹²

In the negotiation of the BWC, international cooperation does not appear to have been controversial. Elements of what is now Article X first emerged in the Soviet Union’s draft Biological Weapons Convention in 1971. The language of the article in the Soviet draft was subject to minor amendments, in part designed “to follow more closely the wording of the NPT provision from which this text derived”.¹³ However, in contrast to the NPT, withholding technologies of concern from any State has never been debated in the BWC. Instead, access control has been outsourced to export control regimes and rarely comes under the public spotlight.

Although the origins of Article X appear uncontentious, over the course of the evolution of the BWC, the States parties have become increasingly divided over Article X. External developments, such as the emergence of a new international economic order¹⁴ and a “political-psychological overlap” with the NPT, have increased interest in the promotional aspect of Article X.¹⁵ Yet it remains difficult to adapt institutional conditions for the promotion of international cooperation in a similar fashion to the NPT. More specifically, it remains unclear exactly what is required in terms of the function and focus of the provision; as the United Kingdom remarked in 2021, “there is no definitive definition of what constitutes assistance and cooperation under Article X (1)”.¹⁶

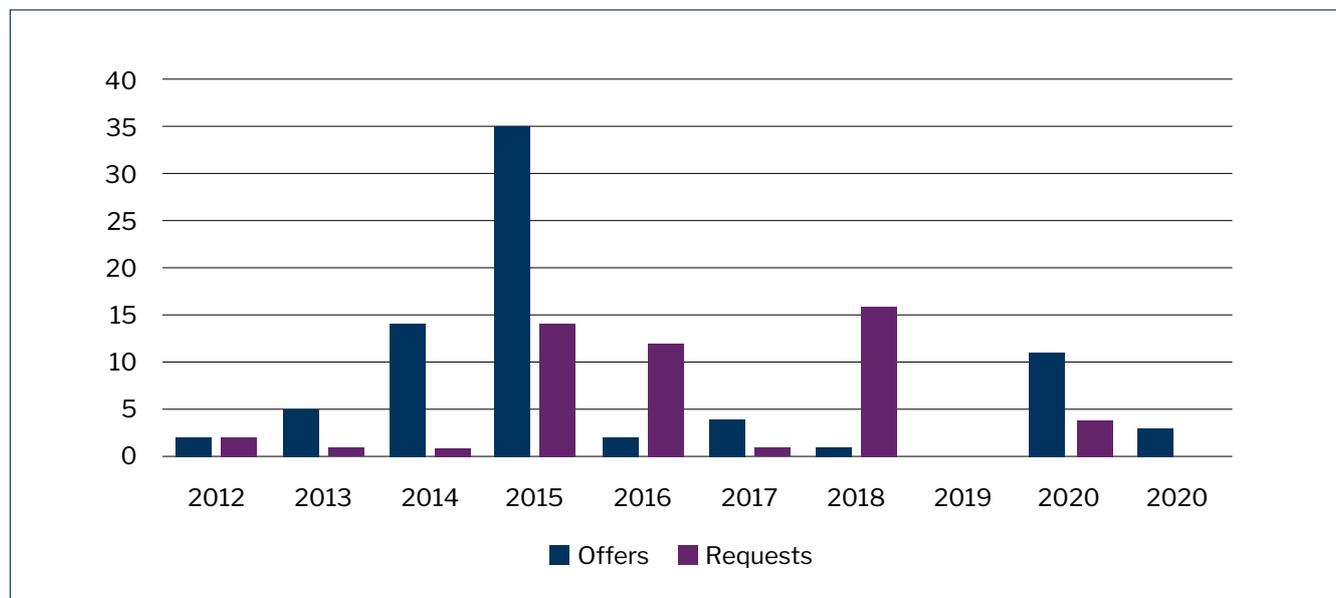
Moreover, many Western States claim that they adequately contribute to the implementation of Article X, through various activities such as offering assistance in biosafety and biosecurity education programmes, help with the national implementation of the Convention, and technology transfer.¹⁷ While all of this is clearly highly valuable, States of the Non-Aligned Movement (NAM) have long

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- 12 It could be more broadly discussed if there ever was a chance for economically fair sharing of technology. More generally, this is also a good starting point for discussing promises of “techno-fix” approaches, but this leads too far from the present subject.
- 13 Biological Weapons Convention, “What Constitutes Assistance and Cooperation under Article X?”, Working Paper Submitted by the United Kingdom of Great Britain and Northern Ireland, BWC/MSP/2020/MX.1/WP.2, 13 August 2021, <https://undocs.org/BWC/MSP/2020/MX.1/WP.2>.
- 14 United Nations General Assembly, “Declaration on the Establishment of a New International Economic Order”, 1 May 1994, A_RES_3201(S-VI)-EN, [https://undocs.org/en/A/RES/3201\(S-VI\)](https://undocs.org/en/A/RES/3201(S-VI)).
- 15 N. Sims, “The Evolution of Biological Disarmament”, SIPRI Chemical and Biological Warfare Studies no. 19, 2001, p. 122.
- 16 Biological Weapons Convention, “What Constitutes Assistance and Cooperation under Article X?”, Working Paper Submitted by the United Kingdom of Great Britain and Northern Ireland, BWC/MSP/2020/MX.1/WP.2, 13 August 2021, <https://undocs.org/BWC/MSP/2020/MX.1/WP.2>.
- 17 See, for example, Biological Weapons Convention, “Report on Implementation of Article X of the Biological and Toxin Weapons Convention”, Working Paper Submitted by the United States of America, BWC/MSP/2020/MX.1/WP.1, 17 December 2020, <https://undocs.org/BWC/MSP/2020/MX.1/WP.1>.

argued that there is a deficiency in the implementation of Article X by the States of the Global North.¹⁸ The Article X database was established to provide a standing communication channel in-between States offering and asking for assistance.¹⁹ But the reported rate of use of the database is low (see figure 3). Simultaneously, there is an unaltered, high

number of calls by NAM States for greater action in this area, including ongoing complaints of poor implementation. These raise the question of what NAM States are seeking under the promotional paragraph of Article X and if there could be any applicable scale to define adequate implementation.

Figure 3. BWC Assistance and Cooperation Database Offers and Requests per Year



To this end, there may be merit to proposals (made in the NAM action plan on Article X and elsewhere) to map gaps and needs related to Article X and assistance offers.²⁰ Alternatively, Article X reports could be structured to facilitate a clearer understanding of the needs of States parties. Such a step is unlikely to generate a single coherent definition of Article X expectations; indeed, some have

suggested such a step may unhelpfully narrow the scope of the article.²¹ However, some process of surveying States parties' requirements could allow improved understanding of priority requirements. In turn, this could also help to build a better understanding of what constitutes "other peaceful purposes" under Article X.

18 See, for example, Biological Weapons Convention, "Institutional Mechanism for International Co-operation and Compliance with Article X", Working Paper Submitted by Venezuela on behalf of the Group of the Non-Aligned Movement and Other States Parties, BWC/MSP/2019/MX.1/WP.3, 24 July 2019, <https://undocs.org/BWC/MSP/2019/MX.1/WP.3>, Section II, "Article X Action Plan", paragraph 9.

19 Biological Weapons Convention Implementation Support Unit, "Assistance and Cooperation Database", <https://bwc-articlex.unog.ch>.

20 Philippines, "Statement to the Biological Weapons Convention Meetings of Experts MX1 on Cooperation and Assistance, with a Particular Focus on Strengthening Cooperation and Assistance under Article X", 30 August 2021, http://149.202.215.129:8080/s2t/UNOG/BWC-30-08-2021-AM_mp3_en.html, 11:00. See also Biological Weapons Convention, "BTWC Article X Compliance Mechanism for the Eighth Review Conference", Working Paper Submitted by Venezuela on behalf of the Group of the Non-Aligned Movement and Other States, BWC/CONF.VIII/WP.23, 9 November 2016, <https://undocs.org/BWC/CONF.VIII/WP.23>.

21 Biological Weapons Convention, "What Constitutes Assistance and Cooperation under Article X?", Working Paper Submitted by the United Kingdom of Great Britain and Northern Ireland, BWC/MSP/2020/MX.1/WP.2, 13 August 2021, <https://undocs.org/BWC/MSP/2020/MX.1/WP.2>.

6. Views and proposals on strengthening the implementation of Article X Einas Mohammed²²

The political dynamics among States within a multilateral instrument's decision-making platforms may vary. However, operationalizing the assistance and cooperation provisions of instruments seems to be a common challenge across several regimes. Moreover, it is important to recognize that there is already a great deal of assistance and cooperation taking place that serves the objectives of the Biological and Toxin Weapons Convention (BWC) but takes place outside its framework. This is a result of policies and commitments by a State or a group of States as well as assistance from international and regional organizations.²³

Challenges exist at different points on the assistance and cooperation continuum, with demand and supply side problems as well as challenges in assistance facilitation and matchmaking. Addressing these challenges could go a long way, not only in terms of improving operational aspects of Article X, but also in fostering confidence among States, softening the divisive discourse and revitalizing the BWC's authority more broadly. Challenges include:

- **Inability to identify gaps and needs** for which cooperation or assistance is required. This could be due to limited understanding by States of the instrument's requirements, or limited capacities to undertake a needs assessment (especially when the instrument is non-prescriptive or when common needs assessment or gap analysis tools do

not exist). This results in incoherent or unrealistic cooperation or assistance requests that often go unmet.

- **Competing national priorities** and a preference to receive cooperative assistance that is not only non-proliferation focused but which also responds to broader development needs. This is especially the case with developing States that could be committed to weapon of mass destruction (WMD) regimes but at the same time feel that they are not reaping the rewards of peaceful cooperation.
- **Assistance offered through cooperation is insufficient or limited in scope**, hence they do not match the expressed needs. An example of this is when requests for equipment are met with offers of advisory support.
- **Poorly coordinated or geographically unbalanced assistance.** This can be a result of a combination of factors, including perception of proliferation risks or "ease of doing business".²⁴
- **Challenges to transforming external assistance to sustainable national policies** and practices. This can result from problems with short-term projects; the absence of sustainability plans; or a lack of political will or capacity to invest national resources to sustain positive outcomes.

22 The views expressed in the article are those of the author and do not necessarily reflect the views of the United Nations Office for Disarmament Affairs.

23 See, for example, the assistance reported through Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, "Programming Annex", 2020, <https://www.gpwmd.com/resources#ProgrammingAnnex>

24 This is a problem common in both the conventional arms and WMD fields. A security event can cause donors to shift to a certain region or country. In other cases, assistance providers (understandably) concentrate efforts in States more willing to receive assistance. For example, a recent paper by Stimson on Resolution 1540 indicates that assistance is concentrated in Latin American and the Caribbean, while requests from Africa are almost double in number. M. Vecellio, "Well, Somebody Has to Arrange the Matches: Understanding the Shortcomings of the 1540 Nonproliferation Assistance Process", Henry L. Stimson Center, 26 July 2021, <https://www.stimson.org/2021/well-somebody-has-to-arrange-the-matches>.

- **Defective assistance matchmaking processes or mechanisms** that are unable to link needs to resources in an efficient and timely manner. This is particularly problematic if institutional entities are under-resourced or restricted in their mandate to support cooperative activities.
- **Lack of dedicated and regular assistance and cooperation platforms** that can help gather feedback on matches made, resolve bottlenecks, foster shared understanding, continually draw lessons to improve the process and publicize successes.
- **Exclusion of certain implementing entities from the assistance framework**, thereby forfeiting substantial technical know-how and resources that can benefit the regime. This is often the case when cooperation and assistance frameworks are limited to States only, while other intergovernmental and non-governmental organizations may hold expertise and resources that can be of service.²⁵

Based on these observations and building on the Article X discussion to date, as well as wider lessons learned in other disarmament and non-proliferation spheres, the concrete steps in table 2 could be considered in seek-

Table 2. Concrete steps to advance Article X of the BWC

Enhance States' capacity to determine and communicate needs	Develop tools, under the guidance of working groups of the BWC Meetings of Experts, that can help States better assess needs. The public health domain is already rich with tools and guidelines that can be adapted to fit the BWC's scope. ²⁶ Additionally, States parties might consider developing a common international cooperation-request template that is sufficiently detailed to communicate States' needs and enable potential assistance providers to engage.
Expand and enhance assistance sources and offers	Develop a common assistance-offer template to specify the scope, nature, duration and eligibility criteria for the offer, and thereby manage expectations and reduce transaction costs. Such a template might consider a role for non-governmental implementing entities in the cooperation and assistance framework. Several entities have proven their value in advancing other regimes, including the World Health Organization (WHO), the Food and Agricultural Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), the World Customs Organization (WCO), the United Nations Office on Drugs and Crime (UNODC), the African Union (AU), the Verification Research, Training and Information Centre (VERTIC), and the Stimson Center.

²⁶ These include, but are not limited to, tools for conducting WHO's Joint External Evaluation; the WHO Laboratory Biosafety Manuals series; WHO Benchmarks for International Health Regulations Capacities; and the Global Health Security Index.

²⁷ Notably the NAM action plan on Article X refers to the "operationalization of offers and supplies proposed and/or requested by States Parties" as one function of the envisaged cooperation committee. See Biological Weapons Convention, "BTWC Article X Compliance Mechanism for the Eighth Review Conference", Working Paper Submitted by Venezuela on behalf of the Group of the Non-Aligned Movement and Other States, BWC/CONF.VIII/WP.23, 9 November 2016, <https://undocs.org/BWC/CONF.VIII/WP.23>, paragraph 14.

Table 2. *continued*

Establish a full-cycle assistance matchmaking mechanism	Expand the mandate, size and resources of the BWC Implementation Support Unit (ISU) to administer a matchmaking mechanism. This mechanism could apply flexible matchmaking practices that enable the augmented ISU to effectively engage assistance requestors and providers – both formally and informally – to achieve successful matches. ²⁷ This could be further enhanced through the development of cost-effective follow-up and feedback mechanisms that enable the ISU to keep track of matches made, facilitate further matches as required and publish the status of requests. States parties might also consider measures to evaluate the assistance matchmaking mechanism and present feedback and recommendations at regular intervals, for example at the five-yearly Review Conferences.
Foster and encourage tailored assistances models	Recognize that States have varying capacities and priorities under Article X: no one size fits all in terms of cooperation. To this end it could be useful to consider tailored region-specific models that are suited for the context and delivered through iterative programmes. The Africa Programme of the Organisation for the Prohibition of Chemical Weapons (OPCW) provides one example of such tailored programmes. ²⁸
Do not re-invent the wheel	Acknowledge the existence of several mechanisms and platforms with shared objectives that have achieved success in the area of cooperation and assistance under Article X. There is much that could be learned from these experiences which further present opportunities for synergies and cross-fertilization.

28 Organization for the Prohibition of Chemical Weapons, “Capacity Building – Africa Programme”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/africa-programme>.



DIRECTOR-GENERAL

7. Addressing the elephant in the room: export controls decisions James Reville & María Garzón Maceda

The Non-Aligned Movement (NAM) action plan for implementation of Article X of the Biological and Toxin Weapons Convention (BWC) proposes, among other things, the establishment of a “a procedure to settle disputes if a State Party is restricted and/or denied by another State Party or a group of States Parties on drugs, medicines, vaccines, diagnostics and related equipment and materials for peaceful purposes as inconsistent with in the Article X of the Convention, including by considering establishment of a standing body”.²⁹ This reflects a long-standing aspiration of NAM countries and a topic of contention in the negotiations around a Protocol for the BWC.

During the Ad Hoc Negotiations, several Western States were resistant to the idea of surrendering decision-making power around export controls to any international entity.³⁰ In contrast, several NAM countries argued forcible in favour of the establishment of a dispute-settlement mechanism to deal with export control denials.³¹ The result

was an impasse.³² In an attempt to find a compromise, Article 14(E) of Tibor Toth’s Composite Text made provision for the envisaged Executive Council to “review concerns raised by a State Party on the implementation of Article X of the Convention” and, as a result of this review, to “consider the matter at its next regular session” and possibly “make recommendations to the States Parties concerned”.³³

The Composite Text of the Draft Protocol was criticized by several States.³⁴ Ultimately, the process collapsed at the hands of the United States.³⁵ Yet interest in some form of dispute-settlement mechanism to address export control denials has not diminished; rather, it has increased over the last 20 years – but particularly following the public health competition for resources related to COVID-19.³⁶ Dispute settlement is likely to be raised in discussions at the Ninth BWC Review Conference, although establishing a dispute-settlement mechanism for the BWC will be a step too far for many States parties.

29 Biological Weapons Convention, “BTWC Article X Compliance Mechanism for the Eighth Review Conference”, Working Paper Submitted by Venezuela on behalf of the Group of the Non-Aligned Movement and Other States, BWC/CONFVIII/WP.23, 9 November 2016, <https://undocs.org/BWC/CONFVIII/WP.23>, paragraph 10(b).

30 J. Rissanen, “Pressure Mounts at Protocol Negotiations”, *Disarmament Diplomacy*, no. 54, February 2001, <http://www.acronym.org.uk/old/archive/dd/dd54/54bwc.htm>.

31 Ibid.

32 As Rissanen notes, “Given these two apparently irreconcilable positions – one which would grant power in cases of a denied transfer request to a body associated with the Protocol, and the other adamant that such power should remain with individual Member States – finding agreement on this highly controversial issue will be a major challenge”. Ibid.

33 Biological Weapons Convention, “Protocol to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction”, BWC/AHG/CRP.08, 30 May 2001, <https://undocs.org/BWC/ADHOCGROUP/CRP.8>, paragraphs 26, 28.

34 This claim is based on a joint statement released on 4 May 2001: “We firmly believe that the Ad Hoc Group should immediately resume substantive negotiations based on the rolling text to achieve consensus on outstanding issues”. Biological Weapons Convention, “Joint Statement on the Process of the BTWC Ad Hoc Group Negotiations”, Working Paper Submitted by China, Cuba, Iran, Indonesia, Libya, Pakistan and Sri Lanka, BWC/ADHOCGROUP/WP.451, 4 May 2001, <https://digitallibrary.un.org/record/442588>, paragraph 4.

35 D. Mahley, “Statement by the United States to the Ad Hoc Group of Biological Weapons Convention States Parties”, US Department of State, 25 July 2001, <https://2001-2009.state.gov/t/ac/rls/rm/2001/5497.htm>.

36 International Cooperation on Peaceful Uses in the Context of International Security”, Draft Resolution Submitted by Belarus, Burundi, Cameroon, China, Equatorial Guinea, Eritrea, Ethiopia, Kiribati, Pakistan, Russia, Syria, Vanuatu, Venezuela and Zimbabwe, A/C.1/76/L.55, 14 October 2021, <https://undocs.org/A/C.1/76/L.55>.

However, it is possible that routes to addressing specific export control grievances may already exist. For example, through Article V, the BWC provides a mechanism for consultation and coordination around any issues that may emerge in relation to the implementation or objectives of the BWC. This includes issues related to the implementation of Article X. Reaffirming or developing steps and timelines for the processes of invoking Article V could therefore be useful to consider further. Indeed, during the Protocol negotiations, China, Cuba, India, Indonesia, the Islamic Republic of Iran, Mexico and Pakistan identified “consultation and clarification procedures” as a first step to address transfer denials.³⁷

The use of these tools would be politically contentious and unlikely to satisfy any State party to the BWC. Certainly, for many NAM States, the option of consultation would fall far short of the envisaged dispute-settlement mechanism. Nor would it provide any guarantee of successful resolution of grievances around export control denials. However, in conjunction with wider measures, such as the establishment of a cooperation entity (as discussed here by Lennane), it could present a small step towards progress in the BWC.

37 Biological Weapons Convention, Working Paper Submitted by China, Cuba, India, Indonesia, Iran, Mexico and Pakistan, BWC/ADHOCGROUP/WP.432, 23 November 2000, [https://docs-library.unoda.org/Biological_Weapons_Convention_-_Ad_Hoc_Group_Twenty-First_session_\(2000\)/BWC_AHG_wp.432.pdf](https://docs-library.unoda.org/Biological_Weapons_Convention_-_Ad_Hoc_Group_Twenty-First_session_(2000)/BWC_AHG_wp.432.pdf).

8. The role of Article X in tackling misinformation and building an operational technical secretariat

Nomsa Ndongwe

The current COVID-19 pandemic has driven home the need to strengthen technical assistance and cooperation within the context of the Biological and Toxin Weapons Convention (BWC). Article X of this near-universal treaty is a natural, built-in opportunity for States parties to work together towards mitigating the spread and impact of disease (which may or may not be intentionally released).

As the World Health Organization (WHO) points out, disinformation surrounding COVID-19 has polarized public discussion, amplified hate speech, and heightened the risk of conflict, violence and human rights violations.³⁸ In the case of the 2014 outbreak of Ebola Virus Disease, the fear and mistrust of public health measures contributed to prolonging the disease's impact. There are also countless examples of this happening in the United States, France, the United Kingdom, and all over the world with COVID-19 and vaccines in general.

Dis- and misinformation are likely to be prominent in any future natural disease outbreak and are almost certain to emerge in any sophisticated biological attack, confounding life-saving health measures and exacerbating tensions. To this end, there could be logic to exploring the role that Article X cooperation could play in the development of action

plans to address any future “infodemic” related to biological weapons. BWC States parties could also consider developing and implementing a universal public education programme, from elementary school level onwards, about public health best practices. These best practices can be disseminated in conjunction with other United Nations bodies, such as WHO, the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the United Nations Development Programme (UNDP) and would include topics as simple as correct hand-washing; mask wearing when sick; recognizing and tracking symptoms of health issues as common as “the flu” for respiratory tract-related illness or a “stomach bug” for illnesses like cholera and Ebola; and seeking medical assistance when symptoms persist for more than three days.

A second point for consideration in options for Article X is strengthening and expanding the BWC Implementation Support Unit (ISU) into a fully operational technical secretariat, similar to the Organisation for the Prohibition of Chemical Weapons (OPCW). The OPCW has a number of activities dedicated to the peaceful uses of chemistry (see table 3 on the following page for an illustrative list of these programmes).

38 Paraphrased from WHO, UN, UNICEF, UNDP, UNESCO, UNAIDS, ITU, UN Global Pulse and IFRC, “Managing the COVID-19 Infodemic: Promoting Healthy Behaviours and Mitigating the Harm from Misinformation and Disinformation”, 23 September 2020, <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-info-demic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>.

Table 3. Illustrative examples of OPCW Programmes on Chemical Knowledge Promotion and Exchange

	Research Projects Support Programme: provides funds for “problem-oriented and scientifically valid projects from individual research groups or institutions based in Member States with developing or transitioning economies” ³⁹
	Fellowship Programme: provides support for young scientist “to work in advanced laboratories or facilities in another Member State to enhance skills and transfer knowledge” ⁴⁰
	Conference Support Programme: provides financial support for conferences and sponsorship of participants on topics of relevance to the Chemical Weapons Convention ⁴¹
	Women in Chemistry: provides support “to promote the role of female chemistry professionals in the promotion of the peaceful uses of chemistry” ⁴²
	Peaceful Uses of Chemistry Forum: serves as a forum to “discuss cutting-edge issues concerning peaceful chemistry”, among other things ⁴³

Strengthening and expanding the current three-person ISU could enable a number of such creative activities designed to proactively foster cooperation and knowledge transfer. This is very important for a treaty that bans a whole class of weapons (bio-

logical and toxin) and would also bring the implementation aspect of the BWC in line with its sister treaties, such as the Chemical Weapons Convention and the Comprehensive Nuclear-Test-Ban Treaty.

39 Organization for the Prohibition of Chemical Weapons, “Capacity Building – Research Project Support Programme”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/research-project-support-programme>.

40 Organization for the Prohibition of Chemical Weapons, “Capacity Building – Fellowship Programme”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/fellowship-programme>.

41 Organization for the Prohibition of Chemical Weapons, “Capacity Building. Conference Support Programme”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/conference-support-programme>.

42 Organization for the Prohibition of Chemical Weapons, “Capacity Building – Women in Chemistry”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/women-chemistry>.

43 Organization for the Prohibition of Chemical Weapons, “Capacity Building – Peaceful Uses of Chemistry Forum”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/peaceful-uses-chemistry-forum>.

9. Strengthening biosecurity under Article X

Katri Malinen

State parties to the Biological and Toxin Weapons Convention (BWC) are all working towards the enhancement of biosafety and biosecurity. However, there is no one-size-fits-all approach to implementing these measures; indeed, given the context and the considerably variety of available resources across BWC States parties, a standardized model is not possible. Nonetheless, measures developed to build capacity in biosafety and biosecurity – including such activities as codes of conduct (drawing on the recent Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists⁴⁴) or education and awareness raising – could be collected and collated under the same platform, with the materials and approaches of local actors feeding into a centralized body.

Drawing from these existing experience, bespoke actions plans for the enhancement of biosecurity and biosafety could be developed through some form of Article X mechanism. Potentially, these could be augmented by an institutional twinning system, drawing on and adapting the World Organisation for Animal Health (OIE) Laboratory Twinning Programme, which “directly supports OIE’s strategy to improve global capacity for disease prevention, detection, and control, through capacity building and networking”.⁴⁵

A second approach could be the development of national Article X reports or exploring the BWC Confidence-Building Measures (CBMs) to build a better understanding of initiatives in the areas of biosecurity and biosafety. Submissions of CBM reports peaked in 2020, even though they are voluntary in

nature. The BWC Implementation Support Unit (ISU) could undertake an analysis of these reports and use the information that they contain to populate a common database or platform of initiatives. This would, however, require improvements in the quality of the CBMs and the national Article X reports. In the case of the Article X reports, this perhaps points to standardizing reporting and creating common guidelines to enhance their value.

Any initiative designed to strengthen biosecurity through Article X will need institutional support. The proposal from Kazakhstan for the creation of an international agency for biosafety (IABS) lays out an ambitious plan to considerably enhance the resources allocated to biosafety (and biosecurity) in a manner that complement the BWC.⁴⁶ Some of the envisaged functions of the IABS may be overly ambitious in the short term. Certainly, more detail is required around how the IABS would, as Kazakhstan proposed, “oversee/control developments in modern biological technologies” and such a proposal could generate concern amongst stakeholders, in particular industry actors. However, there could be value in further exploring the IABS and, in particular, some of the proposed functions related to creating a “Catalogue of Confidence Building Measures in biological safety” and promoting “research work in biological safety”. As other have noted elsewhere in this report, there is also value to addressing the current institutional deficit in the BWC, perhaps taking forward the idea of a “small compact staff with sufficient expertise and capacity in biosafety, based on the principle of equitable geographical representation”.⁴⁷

44 The Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists were submitted by China and Pakistan to the 2021 BWC Review Conference for endorsement. See Chinese Ministry of Foreign Affairs, “Working Paper on The Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists”, 22 September 2021, https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zjzg_663340/jks_665232/kjfywj_665252/t1908721.shtml.

45 World Organisation for Animal Health, “Laboratory Twinning”, <https://www.oie.int/en/what-we-offer/improving-veterinary-services/pvs-pathway/targeted-support/sustainable-laboratory-support/laboratory-twinning>.

46 Biological Weapons Convention, “Concept Note on the Creation of an International Agency for Biological Safety (IABS)”, Working Paper Submitted by Kazakhstan, BWC/MSP/2020/MX.5/WP.4, 16 August 2021, <https://undocs.org/BWC/MSP/2020/MX.5/WP.4>.

47 Ibid., paragraph 12.



10. Implementation of Article X as an important tool to counter global health emergencies

Ali A. Mohammadi

Communicable diseases caused by infectious agents continue to be the major cause of illness, incapacity and death among human beings and animals. Unfortunately, many developing countries that face an outbreak of infectious diseases lack efficient capability to respond promptly and effectively to these outbreaks. Indeed, epidemic and pandemic public health emergencies such as Ebola, H5N1, H1N1, SARS, MERS, Zika and now COVID-19 have all in turn caused morbidity and mortality of millions of people around the world but in particular in developing and low-resource countries, where they further create huge economic losses to trade, productivity and tourism.

Morbidity and mortality are exacerbated by low hygienic and safety conditions in hospitals and laboratories as well as a lack of knowledge on the safe handling of infectious materials. This is a major source of dissemination of infectious materials to medical personnel and the environment and has very real consequences for the health and well-being of populations. Moreover, there is an increasing concern about the possible misuse of dual-use pathogens and toxins as a means of causing harm or death in a population. Reducing these threats alone needs special attention and effective planning since, if not managed properly, they may have catastrophic consequences for the effected communities.⁴⁸

In this respect, for many developing countries, the primarily priority in public health planning is to build capacity to respond to public health

emergencies. Such a capacity-building mechanism could take the form of a global biological risk-management (GBRM) programme. This would bring together representatives of States parties of the Biological and Toxin Weapons Convention (BWC), working under Article X, as well as specialized United Nations agencies and non-governmental organizations and any other related entities. The programme would need to focus on capacity building in low-resource and developing countries. Specifically, it would provide timely and adequate detection and response capabilities in the face of public health emergencies, including emergencies caused by the deliberate release of biological agents. This will help in controlling and containing communicable diseases at the national, regional and even international levels. It would also help in mitigating the consequences of a biological weapon, should one ever be used.

The situation underlines the importance of a collective effort that works across States, United Nations entities and non-governmental organizations to build capacity to respond to disease outbreaks. Not all of these activities could realistically fall on the BWC and its three-person Implementation Support Unit (ISU). But there is certainly a role to play for Article X of the Convention and the ISU along with the World Health Organization (WHO) and other bodies in facilitating international cooperation in the activities listed in table 4 on the following page.

48 In brief, dangerous pathogens may cause risk to public health through natural epidemic and pandemic outbreaks of infectious diseases; poor laboratory and clinical conditions and practices; careless handling of infectious materials containing dangerous pathogens, and deliberate misuse of such materials to cause harm, disease, incapacity or death among populations.

Table 4. *BWC-related Components of a Global Biological Risk-Management Programme*

Mapping exercise	Map and assess public health response capacity, in particular in respect to dealing with biological agents and toxins, with a view to enhancing national biological preparedness as well as All-Hazards management. This requires developing suitable protocols; raising awareness among frontline responders; and connecting the health sector with other parts of government, foreign affairs, justice, environment, commerce and intelligence.
Cooperation and capacity-building policies	Drawing on the above mapping exercise, States parties could consider facilitating cooperation in the development of national policy and strategic planning to respond to deliberately caused disease outbreaks. In terms of biological weapon-specific measures, this could include capacity-building measures designed to raise awareness among public health communities of biological weapon risks and ensure familiarity with relevant biological incident-management guidelines; and sharing of information on public information and communications packages to inform communication strategies related to biological weapon events.
Online discussion forum	Develop an online forum to keep the relevant national actors informed and connected with regard to public health response to biological weapons. This could include the establishment of discussion channels addressing specific issues related to biological weapon preparedness, such as approaches to dealing with “infodemics”, which are likely to be particularly acute in any biological weapon attacks.

Underlying these activities is the notion of exploring international cooperation within and in concert with actors beyond the BWC – including the Food and Agricultural Organization of the United Nations (FAO), the World

Organisation for Animal Health (OIE) and WHO – to build global capacity for biorisk management, particularly in countries of the Global South.

11. Fostering a young global science diplomacy community

Mayra Belén Ameneiros

With the development of new technologies such as gene editing, artificial intelligence and synthetic biology, among others, new risks are rising – particularly as technologies spread and become increasingly accessible and decentralized. Amid all the supposed benefits, we must question the risks to global health security and take innovative steps to ensure that we are prepared to deal with these new technologies. Yet there remains a disconnect between scientific research and the product of that research. This is compounded by limited awareness of wider security concerns or diplomatic processes. Our work ends up in a scientific publication or it remains on paper, but we could do much more with this knowledge, which can benefit individuals, the environment, organizations or nations if suitably applied.

To help bridge this gap and merge our knowledge with policy and diplomacy, scientists need to develop new skills and get out of our comfort zone. In this regard, it is important for governments or international organizations to create opportunities and forums for scientists to connect with the world of diplomacy. There is also a need to provide policy initiatives for scientists, to ensure they have the right skills for better communication. Furthermore, diplomats would also benefit from a closer engagement with scientists. To this end, Article X of the Biological and Toxin Weapons Convention (BWC) could be further used as a vehicle to create a global community of scientists involved in diplomacy and policy. Such a step would be consistent with paragraph 1 of Article X, which obligates States parties to engage in “the fullest possi-

ble exchange of equipment, materials and scientific *and technological information*” (emphasis added).

There is an opportunity to build a network of young scientists interested in exchanging with peers and diplomats. The initiative could offer training and provide them with interactive opportunities that take them out of their comfort zone. They would acquire new skills and foster partnerships between different stakeholders, at the national, regional and global levels.

One model for this international collaboration is the Youth for Biosecurity initiative, created after the Biosecurity Diplomacy Workshop for Young Scientists from the Global South organized by the United Nations Office for Disarmament Affairs (UNODA).⁴⁹ This workshop informed a cohort of young scientists about their critical role in biosafety and biosecurity. The interactive training programme focused on multilateral disarmament diplomacy and ways to enhance and promote biosecurity. The programme’s agenda included responsible innovation in science and technology, ways to strengthen regional biosecurity networks in the Global South, and international cooperation in the peaceful uses of biology. Participants (including the present author) were able to connect with diplomats, learn from them, and engage in focused training on the BWC, dual-use research and emerging technologies. By connecting participants with diplomats and policymakers, the workshop gave visibility to young scientists interested in these topics, who can collaborate and enrich the debate.

49 United Nations Office for Disarmament Affairs, “Young Scientists from the Global South Join the Second Edition of the Youth for Biosecurity Workshop”, 26 March 2021, <https://www.un.org/disarmament/update/young-scientists-from-the-global-south-join-the-second-edition-of-the-youth-for-biosecurity-workshop>.

However, these connections must go beyond one initiative, and Article X could serve as a means to create long-term bonds if we are to achieve the “fullest possible exchange”. Looking into the future, BWC States parties could consider further supporting this sort of exercise to foster a better-informed cohort of next-generation researchers, as well as building research networks, partnerships and academies.

The Associate Programme of the Organisation for the Prohibition of Chemical Weapons (OPCW) offers one model that could be adapted to achieve a more systematic process for building next-generation capacity.⁵⁰ In the longer term, such initiatives can also work towards ensuring that universities address issues such as bioethics, science diplomacy and biosecurity, to engage youth from the grassroots level. Moreover, we must work for equitable, full and effective participation in leadership roles of all genders and particularly support marginalized groups. The Women in Chemistry symposium and training programme is another example from the OPCW that could be translated to the BWC under Article X.⁵¹

Another option to build long-term bonds between scientists and diplomats from BWC States parties is the creation of a scientific

advisory group. This should comprise experts in biosecurity-related subjects serving in a personal capacity, with the aim of fostering assistance and cooperation through their specialized advice in scientific and technological matters. Two examples of these are the Scientific Advisory Board (SAB) of the OPCW and the Scientific Advisory Group on the Origins of Novel Pathogens (SAGO), recently created by the World Health Organization (WHO) during the COVID-19 pandemic.⁵² Discussion in the BWC has also resulted in a proposal for an open-ended model of scientific advice open to a larger number of scientists, or some form of hybrid model that combines elements of both these approaches.⁵³ There are also examples in the non-governmental sector bridging science and diplomacy, such as the Geneva Science and Diplomacy Anticipator (GESDA).⁵⁴

If we can unite science and young people and give more space to women, we can change something fundamental, which is the way we look at the problems and opportunities brought by new developments in science and technology. Utilizing Article X of the BWC can be an option for these stakeholders to obtain tools, strengthen their skills and engage to co-create better solutions.

50 Under the OPCW Associate Programme, “Scientists, chemical engineers, and technological specialists from Member States whose economies are developing or in transition are invited to take part in a capacity-building project to enhance their knowledge of the Chemical Weapons Convention and to develop the skills necessary to operate in a modern chemistry environment”. Organization for the Prohibition of Chemical Weapons, “Capacity Building – Associate Programme”, <https://www.opcw.org/resources/capacity-building/international-co-operation-programmes/associate-programme>.

51 The annual Women in Chemistry Symposium “attracts talented women from government, industry and academia to illustrate the strength and depth of contributions women have made to the peaceful uses of chemistry ... Each Symposium is followed by an Analytical Chemistry Course to assist qualified analytical chemists from Member States, whose economies are developing or in transition.” Organization for the Prohibition of Chemical Weapons, “Capacity Building – Women in Chemistry”, <https://www.opcw.org/resources/capacity-building/international-cooperation-programmes/women-chemistry>.

52 Organization for the Prohibition of Chemical Weapons, “Scientific Advisory Board”, <https://www.opcw.org/about/subsidiary-bodies/scientific-advisory-board>; and World Health Organization, “Scientific Advisory Group for the Origins of Novel Pathogens (SAGO) Terms of Reference”, 20 August 2021, [https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago-tors-final-20-aug-21_-\(002\).pdf](https://cdn.who.int/media/docs/default-source/scientific-advisory-group-on-the-origins-of-novel-pathogens/sago-tors-final-20-aug-21_-(002).pdf). The SAGO’s first member list was criticised by some experts for the lack of biosecurity professionals and social scientists, which have an important role for this scientific advisory mechanism.

53 J. Revill, A. Anand and G. Persi Paoli, “Exploring Science and Technology Review Mechanisms Under the Biological Weapons Convention”, UNIDIR, 2021, <https://doi.org/10.37559/SECTEC/2021/SandReviews/01>.

54 See Geneva Science and Diplomacy Anticipator (GESDA) Foundation, <https://gesda.global>.

12. Reflections

If history is any guide, international cooperation under Article X of the Biological and Toxin Weapons Convention (BWC) will be a major point of debate at the Ninth BWC Review Conference in August 2022. Progress on this topic will be critical to achieving a package of measures acceptable to all States. Part of the challenge to progress in this area is political; yet, as authors in this volume point out, there are nonetheless other, systemic challenges to enhancing cooperation at different stages of the cooperation process.

The Ninth Review Conference is unlikely to be able to resolve these systemic issues completely. Identifying gaps, building effective matchmaking processes and ensuring that cooperation can be effectively absorbed cannot be achieved over the course of the two or three weeks of a Review Conference that must deal with several important issues. However, at the Ninth Review Conference, States parties can set in motion a serious and systematic process of addressing these systemic challenges and enhancing international cooperation under Article X.

In this regard, the Non-Aligned Movement (NAM) action plan on implementation of Article X as well as the proposals of the authors above have much to offer. Collectively, proposals related to establishing a voluntary fund, providing a technical assessment of systematic challenges to the provision and receipt of cooperation through some form of cooperation entity, and making more of national reports, for example, could be fruitful and feasible outcomes.

Achieving progress in this area will, however, require greater institutional support. The BWC Implementation Support Unit (ISU) is not an international organization focused on development. However, as some BWC States parties have pointed out, if adequately resourced and mandated, the ISU could potentially play a much greater role in fostering international cooperation.⁵⁵ Progress will also require a degree of cooperative pragmatism by all States parties, as well as preparations and consultations on and around this topic at the earliest possible date.

55 As much is evident in references to a “Cooperation Officer” within the ISU. See BWC, “Non-paper Submitted by the Chairperson of the 2020 Meeting of States Parties and the Chairpersons of the 2020 Meetings of Experts to the Biological Weapons Convention”, BWC/MSP/2020/INF.2, 26 November 2021, <https://undocs.org/bwc/msp/2020/inf.2>, p. 5.

Options for International Cooperation under Article X of the Biological Weapons Convention

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