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# Great Powers and the Norms of the BW Prohibition Regime

**Alexander Kelle**
Senior Researcher IFSH & CBWNet Network Coordinator

**Eva Siegmann**
MA Candidate, Georgetown University

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**Executive Summary**

Great powers have significant impact on the creation of international regimes, including the biological weapons (BW) prohibition regime, which revolves around the 1972 Biological and Toxin Weapons Convention (BTWC, or BWC). In case of the BWC this led to a rather truncated regime without a verification principle and corresponding declaration and inspection norms. Against this background, this paper raises the question what impact great powers had on the regime's evolution over the past 50 years. Did they support the regime in a way that allowed its implementation along the path foreseen at the time of regime creation or did they seek to depart from it significantly? In case of the latter, have they sought to strengthen the regime?

- The United States of America has played a central role in creating the BW prohibition regime and in shaping its evolution over time. Initially limiting its scope, the United States appeared willing to reform the regime during the 1990s through additions to its normative basis. Since 2001, however, the United States has rejected the verifiability of the BWC and instead focussed on improving implementation of existing norms against BW using new approaches. Currently, the United States signals renewed readiness to discuss BWC verification and compliance measures. Whether this readiness expresses the conviction that the BWC can be verified remains unclear.
- The Russian Federation inherited the world's largest offensive BW program of the 20th century from the Soviet Union. Doubts about its complete dismantlement persist until today. When the BW prohibition regime was created in the early 1970s, Russia joined the US in limiting its scope. Efforts to strengthen the treaty regime with a compliance protocol received lukewarm Russian support. This notwithstanding, Russia since 2001-02 has consistently called for resumption of talks for a verification protocol. More recently, Russia focussed on its version of a science advice mechanism for the BWC, sought to promote its mobile medical units as useful BWC implementation tools, and increasingly spread disinformation about alleged offensive BW activities by the US and other BWC states parties.
- Due to the geopolitics of the time, the People's Republic of China was not involved in creating the BW prohibition regime. However, as the country emerged as a great power, it sought to influence regime evolution to match its growing role and bio-economic interests. While during the 1990s, China focussed its attention on the full implementation of the international cooperation norm, during the past two decades China has commented more positively on dual-use export controls. It also has put greater emphasis on domestic biosafety and –security policies and sought to strengthen the regime with an international code of conduct for life scientists.

In sum, none of the great powers emerged as a supporter of broadening the normative base of the regime during the 1990s. From the early 2000s onward the focus of activities at the regime level shifted to strengthening implementation of already agreed upon norms via joint understandings and common activities of BWC states parties. While all three great powers provided inputs in areas of particular interest to them, none of those initiatives resulted in a significant departure from the path charted for the BWC more than 50 years ago. Recent US and Chinese initiatives may still have a positive influence and strengthen the regime. The same cannot be said for the Russian disinformation campaign conducted over the past decade.

## 1 Introduction

International norms are seldom standalone, but are embedded in regulative frameworks consisting of multiple norms in one or more issue area(s). The prohibition regimes for chemical and biological weapons (CBW) contain additional types of clearly identifiable structural elements in the form of regime principles, rules and procedures.[1] This subdivision is based on Stephen D. Krasner, who has characterised the different building blocks of an international regime as follows: "Principles are beliefs of fact, causation and rectitude. Norms are standards of behaviour defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice."[2]

The principled idea behind the biological weapons (BW) prohibition regime is the general biological weapons taboo, which recognises that using BW is an abhorrent act.[3] This principle is expressed in the Preamble of the Biological and Toxin Weapons Convention (BTWC or BWC) and translated into normative guideposts for state action in the Articles of the BWC. The BW prohibition regime has been built on two more principles: First, peaceful uses of biology are allowed, and second, the protection / defenses against the use or threat of use of BW are permitted. In contrast to the chemical weapons (CW) prohibition regime, the BW prohibition regime does not rest on the principle that verification of BWC implementation is required and/or possible in order to confirm regime-compliant behaviour by states parties.[4] While in the CW prohibition regime the verification principle provides the foundation for the declaration, inspection and investigation norms, in the BW context there are no corresponding norms for declarations and inspections, and a much weaker one for investigations.

Scope and content of the BWC were significantly shaped by the historical context of the short period of time during which agreement on the treaty was reached. Negotiations on a stand-alone ban of BW began in 1968 with a British proposal to the Eighteen Nation Disarmament Committee (ENDC) of the UN in Geneva.[5] This proposal was welcomed by the US administration of President Richard Nixon, because – as summarized by Jonathan Tucker – "biological weapons had limited tactical utility on the battlefield and did not constitute a reliable and effective strategic deterrent. … At the same time, the secret field trials in the Pacific had demonstrated that biological weapons posed a potential mass casualty threat to US cities. … Finally, Nixon wished to be seen as a 'man of peace' at a time when the war in Vietnam was provoking strong opposition at home and abroad."[6] Once it became clear that the proposed new treaty would not contain any on-site verification provisions, the Soviet Union was willing to join it. As noted by Milton Leitenberg, the Soviet Union would not accept such measures before the second half of the 1980s.[7] After four years of negotiation, the BWC opened for signature in 1972.

1 While this introduction will briefly present the principles underlying the BW prohibition regime, the focus of the paper is on the norms of the regime and the extent to which the great powers have affected these norms over time. A discussion of the more detailed, regime rules and procedures is beyond the scope of this paper.

2 Stephen D. Krasner, "Structural Causes and Regime Consequences: Regimes as Intervening Variables", *International Organization*, 36(2), 1982, pp.185-205, quote on p.186.

3 Alexander Kelle, *Prohibiting chemical and biological weapons: Multilateral regimes and their evolution*, Boulder, CO: Lynne Rienner Publishers, 2014, p.49.

4 For a discussion of the norms of the CW prohibition regime and great power impact on these regime norms, see Alexander Kelle, *Great Powers and the Norms of the CW Prohibition Regime*, Working Paper No. 7, Berlin: CBWNet, August 2023.

5 Previously, CW and BW were regularly treated together in disarmament discussions. See SIPRI, *The Problem of Chemical and Biological Warfare, vol.4, CB Disarmament Negotiations, 1920-1970*, Stockholm: Almquist & Wiksel, 1971.

6 Jonathan B. Tucker, "A Farewell to Germs: The US Renunciation of Biological and Toxin Weapons, 1969-70", *International Security*, 27(1), 2002, pp.107-148, quote on pp.127f.

7 Milton Leitenberg, *Biological Weapons Arms Control*, Project on Rethinking Arms Control, PRAC Paper No.16, May 1996, p.2.

Article I of the BWC explicitly bans five activities: development, production, acquisition, stockpiling, and retention, creating the non-acquisition and non-possession norms. These are based on the so-called general purpose criterion (GPC) with its emphasis on "types and quantities that have no justification for prophylactic, protective or other peaceful purposes". The convention's focus on the purpose of use, rather than on particular pathogens, ensures its applicability as technology advances. However, this approach leads to challenges in clearly defining what falls within the convention's boundaries. This concerns the distinctions between research and development, and offensive and defensive BW activities. On both of these distinctions the BWC remains silent. Similarly, the non-use norm, while explicitly spelled out in the 1925 Geneva Protocol, is only implicitly contained in BWC Article I. This has led four BWC Review Conferences (RC) to declare "that the use ..., in any way and under any circumstances of microbial or other biological agents or toxins, that is not consistent with prophylactic, protective or other peaceful purposes, is effectively a violation of Article I".[8]

The BW prohibition regime, however, goes beyond this initial standard of behaviour. Several additional norms define the treaty's scope and states parties' obligations:[9]

- The BW destruction norm contained in Article II obliges State Parties to destroy or divert to peaceful purposes all agents, toxins, equipment, and means of delivery related to their stockpiles.
- The non-transfer norm in Article III prohibits the transfer of biological agents to non-State Parties.
- The internalisation norm, contained in Article IV, supports most other norms by obligating State Parties to put the normative guideposts of the treaty into effect domestically.
- The assistance norm in Article VII obliges State Parties to provide assistance in case of biological weapons use or threat of use.
- The BWC also contains a normative requirement to continue negotiating a treaty prohibiting chemical weapons in Article IX, which was accomplished in the early 1990s.
- The cooperation norm as spelled out in Article X is, in the eyes of some State Parties from the developing world, closely related to the non-acquisition and non-transfer norms. These states maintain that implementation of the latter through export control regimes on dual-use goods, such as the Australia Group, must not prevent international cooperation in the peaceful uses.

Norms to determine compliance with the BWC implementation are not well-developed in the treaty: Article V lays out a rudimentary consultation norm in cases of disagreements about compliance, and a similarly rudimentary form of an investigation norm is contained in Article VI, which provides for a referral to the United Nations Security Council.

Although the 1925 Geneva Protocol marks the beginning of modern-day efforts to prohibit CBW, the BW prohibition regime in its current form has the entry into force of the BWC in 1975 as its founding moment. Regime evolution can be divided into three phases: In the first one, from 1975 to 1995, regime implementation largely focussed on existing regime norms. Following the Sverdlovsk anthrax incident in 1979, non-compliance by the Soviet Union was strongly suspected. However, this led to the establishment of politically binding Confidence Building Measures (CBMs) in 1986 and 1991, but not the creation of new declaration and inspection norms. Work of the

[8] This specific form of words was used at the Fourth, Sixth, Seventh and Eighth BWC Review Conferences, as summarized in *Additional understandings and agreements reached by previous Review Conferences relating to each article of the Convention. Background information document submitted by the Implementation Support Unit*, BWC/CONF.IX/PC/5, Geneva: United Nations, 10 January 2022, pp.3f.

[9] Kelle, Prohibiting chemical and biological weapons, 2014, pp.49-51.

Verification Experts group (VEREX) in 1993-94 and the Special Conference of BWC States Parties in 1994 paved the way for the transition to the second phase of regime evolution.[10] In this second phase from 1995 to 2001 BWC states parties attempted to broaden the normative basis of the regime by negotiating a legally binding compliance protocol that would have included a declaration and inspection norm with corresponding rules and procedures for their implementation. However, in the summer of 2001 the US administration of George W. Bush withdrew its support for this approach of strengthening the BWC. The third phase of BWC implementation since 2001-02 started with the split Fifth BWC Review Conference (RC-5) and "has been characterized by abandoning the idea of adding to the set of regime norms on the one hand, and by deepening implementation of existing regime norms on the other."[11]

Starting with the negotiations for the BWC in the late 1960s, the US and the Soviet Union took on a special role in the BW prohibition regime by significantly shaping its normative content. As mentioned above, the BWC does not contain a prohibition on research. Although originally included in the British draft treaty text, bilateral negotiations between the US and the Soviet Union removed BW research from the list of prohibited activities. In addition, the two great powers prevented the repetition and expansion of the non-use norm, already contained in the 1925 Geneva Protocol for BW use in war, and removed a procedure for the investigation of alleged BW use cases from the British draft.[12]

Thus, the US and the Soviet Union in the early 1970s were responsible for limiting the normative basis of the BW prohibition regime. This was largely attributable to the historical circumstances. However, as they were instrumental in limiting regime's ability to create confidence in compliance by states parties, they should therefore ensure the BWC's functioning at least within the boundaries that they set for it. The People's Republic of China, in contrast, did not play a role in the negotiations of the BWC at the ENDC, as China was represented at the UN by the Republic of China (Taiwan) until 1971. Cleary, the geopolitical and geo-economic changes since the early 1970s have been massive with the end of the Cold War in the late 1980s, dissolution of the Soviet Union in 1991, and the political and economic ascent of China.

The following three sections will first provide some additional BW-related information on each of the great powers. This will be followed by a discussion of positions and policies on key regime norms, mostly as presented during BWC Review Conferences, and supplemented with positions, initiatives etc. put forward during inter-Review Conference periods.[13] Focus will be on those norms where great power behaviour has challenged a norm, sought to prevent or remedy such a challenge, or where policies have otherwise affected the path dependent evolution of the BW prohibition regime.[14] The final section of the paper will summarize the findings and assess the impact of great power policies on the evolution of the BW prohibition regime against the expectations of path dependency. Such a path dependent evolution in large part equals "business as usual", without any significant strengthening of the BW prohibition regime.

[10] This periodization aligns with the one put forward by Littlewood, who distinguishes between "minimalists" and "reformers" among BWC states parties, with the positions of the latter gaining the upper hand in 1994. See Jez Littlewood, *The Biological Weapons Convention: A Failed Revolution*, Aldershot: Ashgate, 2006, pp.10f.

[11] Kelle, Prohibiting chemical and biological weapons, 2014, p.98.

[12] Milton Leitenberg and Raymond A. Zilinskas, *The Soviet Biological Weapons Program: A History*, Cambridge, MA: Harvard University Press, 2012, pp.534f.

[13] In what follows we will primarily draw on documents issued during BWC Review Conferences, many of which can be accessed via the UNODA meetings place, supplemented by additional sources.

[14] For a more detailed description of the concept of path dependency see Alexander Kelle, *Great Powers and the Norms of the CW Prohibition Regime*, Working Paper No.7, Berlin: CBWNet, August 2023.

## 2 The United States of America

During the Cold War, the United States was a driving force in initiating and negotiating the BWC, in particular US President Nixon's interest in prohibiting biological weapons, paved the way for the treaty in its current form.[15] Until today, the United States remains a shaping force of the BW prohibition regime – yet US policies have not always promoted its strengthening or broadening.

The early years after the end of the Cold War offered numerous opportunities for arms control. In the context of the BW prohibition regime, these opportunities arose with President Yeltsin's public confession to the Soviet BW program. This confession led to the Trilateral Process involving the United Kingdom, the US, and the Soviet Union, aimed at dismantling the program. The Verification Expert Group 1993-94 and the ensuing negotiations of a legally binding protocol for the BWC sought to strengthen the regime. With the George W. Bush administration taking office in 2001, the era of multilateral arms control drew to a close.[16] Since the BWC Protocol negotiations failed, the United States has shifted its stance on the BWC, opposing legally binding verification while emphasizing national responsibility, ad hoc agreements, and preparedness. Recent developments, however, indicate a renewed readiness to discuss legally binding verification of BWC implementation.

US stakes in biological disarmament and combatting various biological threats remain high. While China's share of the global market for biological products is growing, the United States still has the world's biggest bio-economy, accounting for over half of the patents filed between 1999 and 2013.[17] Consequently, industry interests – worries about the intrusiveness of industrial inspections in particular – have impacted US BWC policy considerably (or at least served as the scapegoat for policy decisions).[18] Simultaneously, numerous high-containment laboratories within the United States created a critical need for rigorous biosecurity and biosafety regulations.[19] This, combined with experiences with and fears of bioterrorism, motivates US national legislation and BWC policy initiatives to strengthen biosafety and biosecurity.[20]

Two broader threads characterize the US engagement in the BWC through the post-Cold War period until today. First, the US rejection of the verification protocol in 2001 and its aftermath have inhibited progress towards a stronger implementation of the treaty norms, thus reinforcing path dependency. Second, since the early 2000s, US efforts in the BWC have shifted to mitigating of a broader array of biological threats compared to the BWC's original disarmament purpose. This has led to a new emphasis on pandemic response, as well as biosafety and -security within the BWC.

### Changing Approaches to Legally Binding Verification

The issue of legally binding verification of compliance is a long-standing point of contention within the BWC. At the 1991 Review Conference, States Parties agreed to establish an Ad Hoc Group of

[15] Jonathan B. Tucker, "A Farewell to Germs: The US Renunciation of Biological and Toxin Weapons, 1969-70", International Security, 27(1), 2002, pp.107-148, quote on pp.127f.

[16] Fey, Marco, Andrea Hellmann, Friederike Klinke, Franziska Plümmer, and Carsten Rauch. "Established and Rising Great Powers: The United States, Russia, China, and India". *In Norm Dynamics in Multilateral Arms Control: Interests, Conflicts, and Justice*, 1st ed., 145–80. Studies in Security and International Affairs Series 13. Athens, United States: University of Georgia Press, 2013.

[17] Joe Kenndy, How to Ensure That America's Life-Sciences Sector Remains Globally Competitive, Information Technology & Innovation Foundation, 26 March 2018.

[18] Rebecca Whitehair and Seth Brugger, BWC Protocol Talks in Geneva Collapse Following U.S. Rejection, *Arms Control Today*.

[19] National Institute of Allergy and Infectious Diseases, Biocontainment Research Facilities, 2023.

[20] Todd Kuiken, "U.S. Oversight of Laboratory Biosafety and Biosecurity: Current Policies, Recommended Reforms, and Options for Congress," Congressional Research Service, 15 September 2023, p.4.

Governmental Experts to examine potential verification measures.[21] Following the work of this Ad Hoc group, often referred to as VEREX, a Special Conference of States Parties in 1994 agreed to establish a further Ad Hoc Group to launch negotiations for a legally binding protocol to the BWC. When the chair of this second Ad Hoc Group proposed a compromise text in 2001, no agreement could be achieved at RC-5 in the same year.[22] States Parties had not established consensus on many substantial issues, but it was the definitive US rejection of a verification regime that put an end to the process.[23]

The United States prominently declared that it would not agree to the Protocol text, claiming that effective verification of BWC implementation is impossible. This standard of verification dates back to the Reagan administration, for whom effective verification meant that it would be able to detect every case of non-compliance with an agreement. [24] This proves particularly difficult for dual-use items and activities that may indicate an offensive BW program but could also serve legitimate peaceful purposes. Observers noted that this was also likely an attempt to protect US biodefense activities.[25] In effect, the US was opposing the establishment of both a declaration and an inspection norm under the BWC.

While difficult to ascertain, it is likely that other States Parties would have objected to the 2001 draft of the verification protocol had the US not rejected it first. For example, many NAM countries declared in a statement in the run-up to the Conference that they wanted to further discuss the issue. Similarly, the firm NAM position in favour of a legally binding verification protocol only evolved after the 2001 debacle in opposition to the United States antagonizing any attempt to bring up discussions on the issue. Nonetheless, firm US opposition over almost two decades ruled out any further attempts to bring the topic of legally binding verification back on the table.

Acknowledging that verification in the narrow sense of the word is not possible in the BWC, the US focus shifted to measures aimed at increasing "confidence in compliance". Instead of legally binding international verification of potential BW activities, the United States promoted confidence-building measures, national implementation and ad hoc initiatives outside of the BWC (for examples, see the section below). For example, alternatives to the verification protocol proposed by the US included national legislation criminalizing all activities prohibited in the treaty, or the extradition of bioterrorists.[26] These US initiatives introduced the concept of biosecurity, meaning the theft and misuse of dangerous pathogens specifically, as a goal towards which States Parties should work using the provisions of the BWC.[27] Recent statements during the 2018-2020 intersessional process and the Ninth Review Conference (RC-9) indicate a change of direction. The US have signalled its readiness to discuss verification measures. Its statement during RC-9 states that there is a "need to explore what measures – yes, including possible verification measures – might be effective in today's context."[28] Despite strong geopolitical tensions that prevented States Parties from agreeing on an Article-by-Article review in the Final document of the Conference, RC-9 has agreed to discuss verification and compliance measures during the intersessional process.[29]

21 James Revill, John Borrie, and Richard Lennane, Back To The Future For Verification In The Biological Disarmament Regime?, UNIDIR, June 2022, p.3.
22 Ibid, p.4..
23 Boyd, Kerry. BWC Review Conference Meets, Avoids Verification Issues | Arms Control Association. *Arms Control Today*, no. 12, 2002.
24 Fey, Marco, Andrea Hellmann, Friederike Klinke, Franziska Plümmer, and Carsten Rauch. "Established and Rising Great Powers: The United States, Russia, China, and India". In *Norm Dynamics in Multilateral Arms Control*, p.171.
25 Brugger, Seth. 'U.S. BWC Proposals: Useful but Insufficient'. *Arms Control Today*, 12, 2001.
26 Brugger, Seth. 'U.S. Presents Alternatives to BWC Protocol at Review Conference'. *Arms Control Today*, 12, 2001.
27 Fey et al., 'Established and Rising Great Powers: The United States, Russia, China, and India,' 2013.
28 Statement as delivered by Bonnie Jenkins, United States Under Secretary of State for Arms Control and International Security, Geneva, 29 November 2022, p.2.
29 *Final Document of the Ninth Review Conference*, United Nations: Geneva, 22 December 2022, p.10.

**Changing Perception of the BWC's Purpose**

2001 marks a larger shift in US security policy which also affects the BWC, as discussed above in the case of legally binding verification. Shortly after the terrorist attacks of September 11, the so-called Anthrax attacks brought biological terrorism in the limelight. State-level BW programs did not constitute the only threat anymore, but the US saw significant risks stemming from both individuals and states, with advances in the life sciences putting them in closer reach of dangerous pathogens.[30] Naturally occurring outbreaks as well as accidental leaks of dangerous pathogens also received more attention as a security problem.[31]

This changing threat perception within the United States also reshaped the US approach across BWC norms. The following considers the effect of this shift to a broader array of biothreats on US policy in relation to national implementation, biosafety and -security, and the cooperation norm. Across these issue areas, a focus on concrete steps to prevent and mitigate accidental or deliberate outbreaks of dangerous pathogens can be observed, with these measures focusing on domestic regulation and small international coalitions.

*Biosafety and biosecurity*

Since the 2000s, the United States government has increasingly focused on biosafety and biosecurity issues domestically. In response to the 2001 anthrax attacks and advances in the life sciences that could enable bioweapons development, the US has regularly published national biosecurity strategies in addition to national security strategies. Multiple laws now aim to establish oversight over potential dual-use research in areas like infectious agents and toxins, recombinant DNA, human subjects, animals, agriculture, and more. [32] For example, the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 tightened control over dangerous biological agents and toxins.[33] The Agricultural Bioterrorism Protection Act of 2002 did the same for pathogens threatening agriculture.[34] The recommendations and oversight established by these and other laws acknowledge the dual-use potential of life sciences research while aiming to promote biosafety and biosecurity domestically.

While the most recent proposals on a Code of Conduct for scientists have been spearheaded by China, the US already called for a "Professional Code of Conduct" for scientists at RC-5 in 2001, in order to encourage peaceful research in the life sciences.[35] Acknowledging additional challenges stemming from advances in the life sciences, the US also advocated for an S&T review mechanism.[36] In the wider international system, the United States has been involved in and initiated non-proliferation efforts such as the G7 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction as well as the UNSC Resolution 1540 to combat WMD terrorism and the spread of related materials.[37]

[30] *Statement by Thomas M. Countryman, Acting United States Under Secretary of State for Arms Control and International Security, Eighth Biological Weapons Convention Review Conference*, Geneva, 7 November 2016.

[32] Kuiken, "U.S. Oversight of Laboratory Biosafety and Biosecurity: Current Policies, Recommended Reforms, and Options for Congress," p.4.

[33] Ibid.

[35] United States, Proposals, document BWC/CONF.V/COW/WP.17, 26 November 2001, p.4.

[36] Statement as delivered by Bonnie Jenkins, United States Under Secretary of State for Arms Control and International Security, Ninth Biological Weapons Convention Review Conference, Geneva, 29 November, p.1.

[37] Karlas, Jan. "Major Powers, Middle Powers, and Multilateral Arms Control Negotiations: The Case of China", in Fulvio Attinà and Yi Feng (eds), *China and World Politics in Transition: How China Transforms the World Political Order*, pp.75–93, Cham: Springer Nature Switzerland, 2023.

*National implementation*

The United States is not the only country considered in this report that regularly emphasizes the importance of national implementation for achieving the objectives of the BWC. This includes, among others, criminal legislation on BW production and use as well as sufficient oversight regulation of dual-use research. However, the US stance differs from Chinese and Russian positions in that it has occasionally connected national implementation to building public health capacities. For example, the US Statement during the General Debate of RC-8 in 2016 notes that "States Parties should also take steps to enhance national and international capabilities to detect, investigate, and respond to the use of such weapons rapidly and effectively". [38]

*International Cooperation and Assistance*

The United States discourse on the cooperation norm stresses that while Article X "was not meant to impose restrictions and/or limitations on exchanges for purposes consistent with the objectives and provisions of the Convention ..., this article does not impose any obligation mandating transfers between state parties". [39] This is fundamentally different to the NAM approach which argues that the norm implies a duty for full cooperation. In line with the overall focus on concrete steps to reduce biological risks, US proposals specifically evoke international cooperation as a means to implement risk-reduction measures, for example to increase the early detection of outbreaks. [40] The United States stress the overlap between the cooperation and assistance norms in Article VII and X respectively. [41] The discussion of the cooperation norm (and the assistance norm) here often blurs biological weapons threats specifically and global health security generally.

To conclude, the United States have been and are a crucial shaping force of the BWC. It has been largely responsible for the negotiation of the BWC, yet the country also has inhibited normative progress over the past decades. For example, its longstanding blockade of any talks about legally binding verification has stifled normative strengthening of the BWC's core prohibition. Simultaneously, its domestic focus on threats from substate actors, as well as a broader conception of biosafety and -security including natural and accidental outbreaks have caused a shift across the board of the BWC agenda.

[38] *Statement by Thomas M. Countryman, Acting United States Under Secretary of State for Arms Control and International Security, Eighth Biological Weapons Convention Review Conference*, Geneva, 7 November 2016.

[39] United States, Proposals, document BWC/CONF.V/COW/WP.17, Geneva, 26 November 2001, p.10.

[40] United States, Remarks at the 7th Biological and Toxin Weapons Convention Review Conference, Geneva, 7 December 2011, p.2.

[41] See, for example, United States, *Implementation of Article VII: advance version of input by the United States*, 1 September 2022.

## 3 The Russian Federation

The interest of the former Soviet Union in developing an offensive BW capability dates back to at least 1928. The Soviet BW program lasted until the Soviet Union dissolved in December 1991, but some parts of it may still be active. The program's infrastructure has remained under the Russian Ministry of Defense, with no outsiders having been granted access to confirm the dismantling of the offensive BW capability. While this lack of independent verification is not different from most of the other past offensive BW programs, what sets the Soviet offensive BW program apart is its longevity, size and sophistication when compared to other BW programs of the 20th century.[42] The program received a boost in the early 1970s when genetic engineering techniques were seen as a useful tool for military R&D. It employed at its height between 40,000 and 65,000 staff. This second-generation Soviet BW program treated BW as "a system of formulated pathogen, munition, and dispersal mechanism," and focused "most of the effort … on weaponizing bacterial and viral pathogens."[43] When in 1979 reports surfaced that over 60 people in Sverdlovsk, a city several hundred miles east of Moscow, had died of anthrax, this raised the question whether the incident was caused by a leak in a military BW facility. The Soviet government at the time denied this and attributed the anthrax outbreak to food poisoning with tainted meat. However, Russian officials several years later confirmed as the source of the outbreak a military facility working on anthrax as a BW.[44] Similarly, the existence of the long denied offensive Soviet BW program overall was acknowledged by Russian President Boris Yeltsin in early 1992, which he characterized as a "lag in implementing" the BWC by the former Soviet Union.[45] The trilateral process between Russia, the United States and the United Kingdom that followed and lasted until 1996 did neither result in the clarification of the extent of the offensive Soviet BW program, nor did it provide certainty that the program had indeed been dismantled, and Russia, consequently would have come into compliance with BWC Article II.[46] The lingering concerns have been regularly reflected for example in the annual US Department of State reports on compliance with arms control agreements. In its most recent 2023 report "the United States assesses that Russia maintains an offensive BW program and is in violation of its obligations under Articles I and II of the BWC."[47] Even in this latest report, a military facility in the city of Yekaterinburg – the former Sverdlovsk – is highlighted as being of concern due to its recent modernization.

A review of the general direction of Russian engagement with the BW prohibition regime at the level of BWC review conferences since 1990s shows as most salient issues those related to verification –often in the context of a legally binding compliance protocol to the BWC – and questions related to treaty compliance and the use of the Article V consultation procedure. In addition, Russia has sought to advance ideas and proposals on the establishment of a Scientific Advisory Committee for the BWC, the strengthening of the protection norm via its mobile medical units, and improving existing CBMs, including through a form on "Military Biomedical Activity Conducted Abroad". This latter point also has to be seen in the context of the unfounded accusations against the US and some former Soviet republics who today are independent states on the Russian periphery.

[42] For an overview, see the concluding chapter of the monumental study by Milton Leitenberg and Raymond A. Zilinskas, *The Soviet Biological Weapons Program: A History*, 2012, pp.689-712.

[43] Ibid, p.701.

[44] Jeanne Guillemin, "The 1979 Anthrax Epidemic in the USSR: Applied Science and Political Controversy", in *Proceedings of the American Philosophical Society*, 146(1), 2002), pp. 18-36.

[45] Leitenberg and Zilinskas, 2012, p.631f.

[46] For an insider account of the trilateral process, see David C. Kelly, "The Trilateral Agreement: lessons for biological weapons verification", in Vertic: *Verification Yearbook 2002*, London, Vertic, pp.93-109.

[47] U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, Washington, D.C., April 2023, p.26.

### Verification principle and declaration and inspection norms

In principle, Russia has supported strengthening the BWC, including through verification measures. In practice, Russia during the formulation of the mandate for the Ad-hoc Group in 1994 insisted on inclusion of "definitions of terms and objective criteria", which, according to Kenneth D. Ward, it then used during AHG negotiations to "shield ongoing, illicit BW activities in the Russian Federation by establishing legal 'safe harbors'."[48] In a similar vein, Jez Littlewood has linked efforts to limit the intrusiveness of any verification measures under the Compliance Protocol to Russian positions on "definitions of terms and the issue of threshold quantities" as well as "its approach to the actual declaration formats, and its objections to on-site activity."[49] Thus, Russia was at best a reluctant supporter of the establishment of declaration and inspection norms through the BWC Compliance Protocol, and able to hide behind the US, when the latter led to the collapse of the AHG process in 2001.

Since then, Russia has repeatedly asserted that "development and adoption of a legally binding verification mechanism is the most effective way to reinforce the regime on the prohibition of biological and toxin weapons" and supported "the resumption of work, suspended in 2001, on the Verification Protocol."[50] At RC-7 it added that only "the possibility to verify the compliance by all the States with their BTWC obligations is a guarantee that the provisions of the Convention are not violated", noting "it is impossible to ensure this confidence through transparency measures alone … That is why we strongly believe that a legally binding BTWC verification mechanism should be developed."[51] At RC-8 in 2016 Russia again took up the issue and asserted that it, "together with the overwhelming majority of States believes that the BWC efficiency could be enhanced through the adoption of a universal, legally binding, non-discriminatory protocol relating to all articles of the Convention, in particular verification, in a balanced and comprehensive manner."[52] Given the rather generic Russian demands for compliance measures over the past 30 years and its concomitant reluctance to agree on specific measures to verify compliance, it remains to be seen how Russia will position itself in the context of the newly established working group of BWC states parties to address *inter alia* "measures on compliance and verification."[53]

### BWC compliance, consultations, and disinformation

Notwithstanding concerns over the fate of the former Soviet offensive BW program and admission of implementation gaps by previous government officials, Russia over the past two decades has consistently presented itself as a BWC state party in good standing. For example in 2006 Russia stated that it "fully and consistently complies with its obligations under the Convention"[54] and called for "common approaches, standards and criteria" to "carefully examine the situation in the field of compliance with the BWC". This should be based on BWC Articles V and VI because "only on the basis of the procedures envisaged by the Convention the settlement of ambiguities can be ensured,"
thereby rejecting any "unilateral attempts to determine who complies with the Convention and who

[48] Kenneth D. Ward, "The BWC Protocol: Mandate for Failure", *The Nonproliferation Review*, 11(2), 2004, pp.1-17, quote on p.3.
[49] Jez Littlewood, *The Biological Weapons Convention*, 2006, p.207.
[50] Russia, Statement by H.E. Anatoly I. Antonov, Head of the Russian Delegation, at the 6th Review Conference of the BWC, Geneva, 20 November 2006, p.3.
[51] Russia, Statement by H.E. Mr. Gennady Gatilov, Deputy Minister of Foreign Affairs of the Russian Federation at the 7th Review Conference for the Biological and Toxin Weapons Convention, Geneva, 5 December 2011, p.2.
[52] Russia, Statement by the Head of the Delegation of the Russian Federation Mikhail I. Uliyanov at the VIII BWC Review Conference, Geneva, November 2016.
[53] *Final Document of the Ninth Review Conference*, document BWC/CONF.IX/9, Geneva: United Nations, 22 December 2022, p.10.
[54] Russia, Statement by H.E. Anatoly I. Antonov, 2006, p.2.

does not."[55] In 2011 during RC-7 Russia stated that it "fully implements its obligations under the BTWC [and] has enacted effective laws that ensure that any attempts to violate the Convention are prevented, revealed and suppressed."[56] This position was repeated in 2016 and in 2022, when at RC-9 Russia noted that it is "fully and unwaveringly … carrying out its obligations under the Convention" and even asserted that "strengthening of the Convention regime, fulfillment of the international obligations relating to the prohibition and non-proliferation of biological and toxin weapons is one of the fundamental priorities of Russia's national policy."[57]

In parallel to assurances of its own treaty-compliant behavior, Russia has tried to sow doubt about the compliance of other BWC states parties with the provision of the treaty, most notably the United States and some former Soviet republics, such as Georgia and Ukraine.[58] This disinformation campaign gathered momentum following the Russo-Georgian war in 2008 when Russia accused Georgia of pursuing BW, or allowing the US to do so on its territory. Subsequent allegations grew in intensity from 2013 onward.[59] Many of them were directed in particular against the Lugar Center for Public Health Research in Tbilisi. These were debunked by a group of international experts visiting the Center in 2018.[60] More recently the focus of Russian disinformation shifted to US support of public health institutes in Ukraine, especially since Russia's war of aggression against the latter country. A raft of baseless accusations culminated in Russia invoking Article V of the BWC, which resulted in a formal consultative meeting (FCM) of its states parties in the fall of 2022. When that meeting did not support its accusations, Russia invoked Article VI of the BWC and took the matter to the UN Security Council, where in November 2022 it was also rebuffed by the majority of Council members. As noted by Jean Pascal Zanders, this process overshadowed BWC RC-9 and was in large part responsible for the Conference failing to agree on an assessment of treaty implementation since 2016.[61] In addition, the FCM also revealed that prior Russian accusations that had misrepresented international public health cooperation among BWC states parties as being linked to offensive military BW research – in this case leveled against Canada and Kyrgyzstan – had resulted in the cancellation of such cooperation.[62] In other words, the false Russian allegations had led to international cooperation activities under the BWC being abandoned. Beyond undermining the cooperation norm in BWC Article X, this had real-world consequences for the recipients of the Canadian support in strengthening the Kyrgyz public health system.

### A science and technology review mechanism for the BWC

Based on the realization that a solid grasp of science and technology of relevance to the BWC underpins many of the normative obligations of BWC states parties, BWC Review Conferences regularly addressed advances of such S&T. Under the heading of reviewing the scope of the BWC, such reviews have become increasingly detailed since BWC entry-into-force. Realizing that these

55 Ibid, p.3f.
56 Russia, Statement by H.E. Mr. Gennady Gatilov, 2011, p.1.
57 Russia, *Compliance by States Parties with all their obligations under the Convention: advance version of input by the Russian Federation*, Geneva, 1 September 2022, p.1.
58 On earlier Soviet/Russian disinformation campaigns at the intersection of public health and BW see Milton Leitenberg, "False allegations of biological-weapons use from Putin's Russia", *The Nonproliferation Review*, 27(4-6), 2020, pp.425-442.
59 Raymond A. Zilinskas and Philipp Mauger, *Biosecurity in Putin's Russia*, Boulder: Lynne Rienner Publ., 2018, pp.308ff.
60 Filippa Lentzos, 'The Russian disinformation attack that poses a biological danger', Bulletin of the Atomic Scientists online, 19 November 2018.
61 Jean Pascal Zanders, *The Biological and Toxin Weapons Convention Confronting False Allegations and Disinformation*, NonProliferation and Disarmament Papers No.85, October 2023.
62 See Canada, Disinformation and Article X of the Biological and Toxin Weapons Convention: A case study, BWC/CONS/2022/WP.5, Geneva: United Nations, 6 September 2022.

five-yearly reviews no longer suffice to keep up with the growing speed of S&T advances, RC-7 tasked subsequent intersessional BWC meetings with an even more detailed annual discussion.[63]

At RC-8 Russia presented a proposal to put S&T reviews under the BWC on a firmer institutional footing by creating a scientific advisory committee.[64] This was very detailed, containing rules of procedure and terms of reference for the committee to operate until the following Review Conference. The proposal was clearly modelled after the OPCW Scientific Advisory Board established under the CWC to advise the OPCW Director General. While in principle a possible next step to achieve a more systematic and in depth S&T review under the BWC, especially when taking some of the differences between the two prohibition regimes into account, the committee proposed by Russia would have required support by the small and already stretched BWC Implementation Support Unit, and would have had only limited independence given its proposed time-bound nature and the right of BWC states parties to interfere with the committee's agenda. Due to the minimalist outcome of RC-8, no steps to strengthen the S&T review process were agreed.[65] This led Russia to resubmit its proposal for a scientific advisory committee in a slightly modified form again at RC-9 in 2022.[66] RC-9 did not reach agreement on an S&T review mechanism and instead tasked a newly established working group to address the issue (among several others).[67]

### Russian mobile military medical units as multi-purpose tool for strengthening BWC implementation

After some preliminary consultations from 2014 onwards Russia introduced a proposal on mobile biomedical units at RC-8 in 2016, as part of a "broad-based and balanced package of measures" to strengthen BWC implementation.[68] In particular, use of such units – which would be provided by Russia, but funded by all BWC states parties – was supposed to strengthen implementation of the international cooperation norm contained in Article X, the assistance and protection norms of Article VII and the investigation norm contained in Article VI. With the exception of a small number of Russian allies, the proposal did not receive any support from the large majority of BWC states parties.

As Zilinskas and Mauger have noted, Russian diplomatic initiatives at RC-8, including the mobile biomedical units and the scientific advisory committee, seem to have been motivated by the goal to appear constructive in strengthening the BWC with concrete proposals. Combined with the Russian support of a Chinese export control proposal and attempts to blame Western countries for the failure of RC-8 they conclude that the aim of Russia's BWC policy during this period was "to score a propaganda victory at the expense of the United States."[69] This assessment is supported by the abovementioned disinformation campaign, asserting secret offensive BW activities, leveled at the US, Ukraine, and others. In this context, BWC Review Conferences, much like the UN Security Council, are used by Russia as venues for its attempts to criticize the US and the Western Alliance more broadly, not for strengthening the norms of the BW prohibition regime.

63 For an overview see Kelle, *Prohibiting Chemical and Biological Weapons*, 2014, pp.91-97.
64 Russia, Strengthening the Biological Weapons Convention. Proposal for the Establishment of a Scientific Advisory Committee, BWC/CONF.VIII/PC/WP.2/Rev.2, Geneva: United Nations, 4 July 2016.
65 Catherine Rhodes, *Workshop Report. Eighth Review Conference of the Biological Weapons Convention: Where Next?* Cambridge: CSER, 21 March 2017.
66 Russia, Strengthening the Biological Weapons Convention: Proposal for the establishment of a Scientific Advisory Committee, BWC/CONF.IX/WP.14, Geneva: United Nations, 7 November 2022.
67 Una Jakob, *The 9th Review Conference of the Biological Weapons Convention*, PRIF Blog, 7 February 2023.
68 Russia, Strengthening the Biological Weapons Convention. Operationalising mobile biomedical units to deliver protection against biological weapons, investigate their alleged use, and to suppress epidemics of various etiology, BWC/CONF.VIII/PC/WP.1/Rev.2, Geneva: United Nations, 4 July 2016.
69 Zilinskas and Mauger, *Biosecurity in Putin's Russia*, p.330.

## 4 China

The People's Republic of China became a State Party to the Biological Weapons Convention in 1984. Upon joining the BWC, China positioned itself as a firm proponent of the prohibition of biological weapons. Its experiences as the victim of bacteriological warfare in World War II motivated its accession to the BWC and advocacy for the prohibition and destruction of all biological weapons.[70] China has emerged over the last decades as an (aspiring) great power with global ambitions and interests.[71] This materializes in economic cooperation globally, increasing efforts to shape international norms[72] and signalling military readiness and resolve.[73]

Domestically, expanding national security thinking has come to include biology and public health. First introduced in 2014, the "comprehensive national security" concept as of 2021 comprises 16 policy domains, including biosecurity.[74] Two trends related to the securitization of health and the life sciences have emerged in China. First, a high-level Chinese commitment to developing its bio-industry has led to a significant expansion of activities over the past decades.[75] Today, the Chinese bio-industry is considered to be "at the forefront of those of developing and emerging countries"[76], and a potential contender for the US lead in the sector.[77] However, a surge in high-containment laboratories has caused concerns about the research's potential dual-use character.[78] These concerns are only exacerbated by the civil-military fusion in life science research, with many prominent firms cooperating closely with the People's Liberation Army (PLA).[79]

Second, and despite the ambiguous intentions behind some of its research efforts, China increasingly puts emphasis on anthropogenic and natural biological threats domestically. Numerous regulations and strategy documents have been put into place since the 2003 SARS outbreak, culminating in the 2021 Biosafety/Biosecurity law to ensure appropriate biosecurity and biosafety levels.[80] While judged as insufficient by some,[81] these efforts are important context for Chinese biosafety and -security initiatives in the BWC framework.

The domestic landscape, featuring the rapidly evolving biotechnology sector and increasing biosecurity regulation, sets the stage for Chinese engagement in the BWC. Since the Cold War, China has focussed its efforts in the BWC on two key issues: the *non-transfer and cooperation norms*, as well as *biosafety and biosecurity issues*. In the following, Chinese stances on confidence-

[70] China, *Position of principle of the Chinese delegation on the Biological Weapons Convention and its third review conference*, document BWC/CONF.II/18, Geneva, 20 September 1991, p.1.
[71] Yan Xuetong, Becoming Strong, *Foreign Affairs*, 22 June 2021.
[72] Jinghan Zeng and Shaun Breslin, 'China's "New Type of Great Power Relations": A G2 with Chinese Characteristics?', *International Affairs*,92(4), 2016, p.773–94.
[73] Stanzel, Angela (2021), Konflikt und Kooperation, *Internationale Politik Quarterly*, 2021 (3), p.33–35.
[74] Katja Drinhausen and Helena Lagarda, "Comprehensive National Security" Unleashed: How Xi's Approach Shapes China's Policies at Home and Abroad, Berlin: MERICS, 15 September 2022.
[75] Chloe Lee, China's Take on Biosecurity: A Report on China's View, Institutions, Processes, and Technology, January 1, 2023, p.8.
[76] Ruiyan Wang, Qin Cao, Qiuwe Zhao and Yin Li, "Bioindustry in China: An Overview and Perspective", *New Biotechnology*, 40, January 2018, p.46–51.
[77] Scott Moore, China's Role in the Global Biotechnology Sector and Implications for U.S. Policy, Brookings Institution, April 2020.
[78] In its 2023 Compliance Report, the US Department of State reiterated its long-standing concerns that the "People's Republic of China (PRC) continued to engage in biological activities with potential BW application, which raise concerns regarding its compliance with Article I of the BWC," U.S. Department of State (2023), *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, p.23.
[79] See for example Kirsty Needham, "Exclusive: China Gene Firm Providing Worldwide COVID Tests Worked with Chinese Military", *Reuters*, 30 January 2021, and Elsa B. Kania and Wilson Vorndick, "Weaponizing Biotech: How China's Military Is Preparing for a 'New Domain of Warfare'", *Defense One*, 14 August 2019.
[80] Yang Xue and Lijun Shang, "Towards Better Governance on Biosafety and Biosecurity: China's Advances and Perspectives in Medical Biotechnology Legislation", *Frontiers in Bioengineering and Biotechnology* 10, 2022, p.6.
[81] Cong Cao, "China's Evolving Biosafety/Biosecurity Legislations", *Journal of Law and the Biosciences*, 8(1), 10 April 2021, p.18.

building measures and other issues related to compliance with the convention, such as legally binding verification measures, will also be discussed.

### Balancing Cooperation and Non-Transfer in the BWC

In the BWC, China is a member of the "Non-Aligned Movement and other States" regional group (in the following shortened to NAM). The group holds that "[t]here are marked disparities that result from asymmetries in the development of the States Parties", and that "Article X of the Convention is a fundamental tool to enable States Parties to fulfil the objective of the Convention."[82] Whereas others focus on the prohibition norms in the Convention, the NAM continues to emphasize that the Convention needs to be implemented as a "composite whole"[83], meaning that positive obligations for cooperation in Article X has the same value as the other norms in the Convention, and therefore deserves the same attention.[84] The group argues that full implementation includes the further institutionalization of the cooperation norm on the one hand and that the cooperation norm deserves primacy over a (faulty) implementation of the non-transfer norm on the other hand.

As part of the NAM group, China has been a vocal proponent of these global justice claims. Previously, China has harshly criticised national export controls on dual-use goods. In 1991, China proposed at RC-3 to adopt language that "no State party should in any way restrict or hinder the international cooperation and exchange among States parties", assigning special responsibility to the developed countries.[85] The Chinese Working Paper on Article III submitted at RC-5 similarly notes that "incorrect practices and adverse trends" related to Article III of the Convention have emerged, which are regarded as obstructing to international cooperation and should therefore be reconsidered. Additionally, China continuously co-sponsors concrete proposals on the implementation of Article X together with the NAM, and underlines these proposals in its national contributions.[86] However, regarding concrete action following from the cooperation norm contained in Article X of the BWC, China stands on both sides: as an advocate for the developing states' wishes for enhanced cooperation, but also as a provider of training and resources under the BWC exchange – which will likely continue to shift as China's bio-economy grows.

This growth also coincides with China's developing stance on the non-transfer norm. Since the 1990s, China has repeatedly stressed that implementing the non-transfer norm should not hamper the transfer of resources for peaceful uses of the life sciences. Similar proposals have been made at later conferences. At RC-6 in 2006, however, the Chinese General Debate statement shifted focus to its own implementation of the non-transfer norm, stating that "China has never assisted, encouraged and induced any state, group of states or international organizations to manufacture or

[82] Cuba on behalf of the Group of the Non-Aligned Movement and Other States, *The establishment of a mechanism to promote the full effective and non-discriminatory implementation of Article X of the Convention*, BWC/CONF.VII/WP.26, 29 November 2011, p.2.

[83] See, for example, *Statement by H.E. Ambassador Juan Antonio Fernandez Palacios, Permanent Representative of Cuba, on behalf of the group of NonAligned Movement and Other States Parties to the Biological Weapons Convention at the Sixth Review Conference of the States Parties to the BWC*, Geneva, 20 November 2011, p.4.

[84] Non-Aligned Movement and Other States, *Article X of the Convention*, BWC/CONF.VI/WP.29, Geneva, 27 November 2006, p.2.

[85] Report of the Committee of the Whole, BWC/CONF.III/17, Geneva: United Nations, 24 September 1991, p.70.

[86] See, for example, *Statement by H.E. Ambassador CHENG Jingye, Head of the Chinese Delegation At the 6th Review Conference of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction*, Geneva, 20 November 2006, p.3; and *Statement by H.E. Ambassador HE Yafei, Permanent Representative of China to the United Nations Office in Geneva and Other International Organizations in Switzerland, Head of the Chinese Delegation At the Seventh Review Conference of the States Parties to the Biological Weapons Convention, Geneva, 5 December 2011*, p.3.

otherwise acquire items for biological weapon purpose … . China has … promulgated and strictly enforced the export control regulations for dual-use biological items and technologies."[87]

### Verification and Compliance

While it was the United States who publicly put an end to the prospects of a legally binding verification protocol for the BWC in 2001, many others remained unsatisfied with the draft text – among them China. A common statement with Cuba, Iran, Indonesia, Libya, Pakistan and Sri Lanka from 4 May 2001 recommends that "the Ad Hoc Group should immediately resume substantive negotiations … to achieve consensus on outstanding issues."[88] This notwithstanding, verification has for long been recognized as impossible to achieve due to the US's unwillingness to engage on a legally binding declarations and inspections. China never noted similar concerns. Instead, the country repeatedly expressed its willingness to return to negotiating a legally binding BWC protocol. In the absence of legally binding verification tools, China stresses the value of national measures to enhance confidence. For instance, a Chinese Working Paper in 2011 recommended that, in the short term, compliance should be enhanced through practical steps, especially national implementation.[89]

Faced with the 2022 Russian allegations of non-compliance against the US and Ukraine, China carefully supported the Russian demands to investigate these claims further. At the FCM held in September 2022 to address these questions, China expressed its concern that not all Russian questions were fully addressed by the United States, and it supported an "international independent investigation" on Ukrainian territory.[90] At the subsequent meeting of the UN Security Council, China again supported Russia's quest for an international investigation, being the only member of the Security Council (permanent or non-permanent) voting together with Russia on this issue.[91]

### Agenda-setting: Maintaining biosafety and biosecurity in the face of biotech advances

Over the past two decades, biosafety and biosecurity have increasingly entered China's limelight. Since the SARS epidemic in 2003, the Chinese government has implemented many measures to improve biosafety and security domestically.[92] Further attention was brought to ethical questions around the social responsibility of scientists when Chinese scientists produced the first ever gene-edited babies in 2019, which provoked domestic and international criticism.[93] A milestone in Chinese biosafety legislation is the 2021 Biosafety/Biosecurity Law, which aims to tackle not only the potential of zoonosis and naturally arising diseases but also the challenges of advances in the life sciences.[94]

87 *Statement by H.E. Ambassador CHENG Jingye, Head of the Chinese Delegation At the 6th Review Conference of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction*, Geneva, 20 November 2006, p.3.

88 Document BWC/AD HOC GROUP/WP.451, 4 May 2001, as quoted in James Revill, John Borrie and Richard Lennane, Back To The Future For Verification In the Biological Disarmament Regime, *UNIDIR*, Geneva, 2022, p.4.

89 China, China's views on strengthening the effectiveness of the BWC, BWC/CONF.VII/WP.24, Geneva, 5 December 2011, p.1.

90 China, "Remarks by H.E. Ambassador Li Song and Questions to the United States at the Formal Consultative Meeting of the Biological Weapons Convention", Geneva, 19 September 2022, p.2.

91 Jez Littlewood and Filippa Lentzos, "Russia's Alleged Bioweapons Claims Have Few Supporters", *Bulletin of the Atomic Scientists*, 11 October 2022.

92 Guizhen Wu, "Laboratory Biosafety in China: Past, Present, and Future", *Biosafety and Health* 1(2), 1 September 2019, pp.56–58.

93 Cao, China's Evolving Biosafety/Biosecurity Legislations, 2021, p.7.

94 Ibid., p.18.

The focus on biosafety and -security issues is also shown in its engagement with the BWC. In 2006, the country's statement during the General Debate of RC-6 notes that "[w]hile enjoying the achievement in the development of biotechnology, it has become a common challenge confronted by the international community as how to strictly and comprehensively implement the Convention and prevent biological weapon threat".[95] Likewise, a working paper submitted for RC-7 in 2011 states that the general purpose criterion should be strictly applied to S&T advances. Such advances should be reviewed by "a meeting of experts within the intersessional meeting process or through the establishment of a working group" for their significance for the Convention.[96]

China has played a decisive role in bringing international standards for responsible life sciences research back on the BWC agenda. After a long hiatus of discussions concerning international biosecurity governance in the standing agenda items, China in 2015 proposed a code of conduct for scientists.[97] The code of conduct was designed to equip all BWC states parties with ethical elements to support biosecurity, and suggested taking up the issue at RC-8.[98] The proposed guidelines were further developed at a workshop in Tianjin in June 2018 and after further revisions within the BWC framework, presented by China and Pakistan with the co-sponsorship of Brazil in April 2022 as "The Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists."[99]

The guidelines had received general support from many BWC States Parties over the months leading up to RC-9, and many hoped for them to be adopted at that meeting.[100] However, eventually, the Tianjin guidelines failed to achieve endorsement in the tumultuous 2022 Review Conference. Nonetheless, China's engagement regarding a Code of Conduct for Scientists has increased the topic's salience for continued discussions in the Convention.

In summary, as China emerged as great power, it had to find its position within the BW prohibition regime shaped by the Cold War great powers United States and the Soviet Union/Russia. As the Chinese bio-economy evolved to rank among the global leaders, its interests started to diverge from its membership in the NAM group. Since the end of the Cold War, a rhetoric shift towards a more favorable outlook on export controls of dual-use materials as well as increasing attention on and international leadership in the oversight of dual-use research of concern emerged on the Chinese BWC agenda.

95 *Statement by H.E. Ambassador CHENG Jingye, Head of the Chinese Delegation At the 6th Review Conference of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction*, Geneva, 20 November 2006, p.3.

96 China, China's views on strengthening the effectiveness of the BWC, BWC/CONF.VII/WP.24, Geneva, 5 December 2011, p.2.

97 Kathryn Nixdorff, *International Biosecurity Governance Evolution within the Biological Weapons Convention*, Working Paper No. 3, Berlin: CBWNet, November 2022, p.7.

98 China, *Proposal for the development of the template of a biological scientist code of conduct under the Biological Weapons Convention*, BWC/MSP/2015/WP.9, Geneva, 15 December 2015.

99 China and Pakistan, The Tianjin Biosecurity Guidelines for Codes of Conduct for Scientists, BWC/CONF.IX/PC/WP.10, Geneva, 7 April 2022.

100 *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, Geneva, 26 November 2021.

## 5 Conclusion

This paper set out to analyse the impact of the great powers – the United States, Russia, and China – on the norms of the BW prohibition regime. Compared to the CW prohibition regime, regime norms against BW are of an older "vintage", having been agreed upon and codified in the late 1960s/early 1970s. Certain key norms that are central to and well-developed in the CW prohibition regime are missing in the BW context, most notably the declaration and inspection norms. While destruction, consultation and clarification, and investigation norms are nominally present, confidence in their implementation suffers from a weaker institutional support, both in terms of an organization assisting BWC states parties with treaty implementation and in relation to more specific rules and procedures supporting the normative guideposts for state action.

Thus, the path charted for the BW prohibition regime was one of considerable uncertainty in relation to the treaty compliant behavior of BWC states parties. Seen from this perspective, much of the effort over the past 30 years to strengthen the BWC has revolved around attempts to compensate for the absence of a verification principle and corresponding declaration and inspection norms. During the 1990s efforts to depart from the path foreseen by the founders of the BWC focused on a mix of potential verification measures (analysed by the so-called VEREX group) and the Ad-hoc Group negotiating a legally binding compliance protocol to the BWC. After these efforts to change the trajectory of regime development had failed, BWC states parties during the past two decades focused more on maintaining a dialogue in between review conferences and on strengthening the regime through "common understandings" and "joint actions" in relation to existing regime norms, but not through a more substantial strengthening of the normative fabric of the treaty regime.

The United States was and remains a key actor in these developments. While in the 1990s the US was willing to contemplate the BWC's departure from the trajectory foreseen at its founding, this changed with the Republican US administration of George W. Bush in 2001. Since then, subsequent US administrations have rejected the verifiability of the BWC and instead advocated for improving the implementation of existing norms against BW, introducing the biosecurity concept into the BWC discourse to strengthen the internalization norm among others. Related initiatives also addressed the assistance and cooperation norms through bilateral activities aimed at preventing the misuse of dual use research of concern or strengthening public health programs in partner countries. The US also supported the strengthening of S&T reviews on the BWC context. Currently, the US administration under President Joe Biden has signalled renewed readiness to enter into a discussion of verification measures for the BWC. The exact shape and content of such measures remain to be explored by the BWC working group in Geneva.

The Russian Federation inherited the world's largest offensive BW program of the 20th century from the Soviet Union. Doubts about its complete dismantlement persist until today. When the BW prohibition regime was created in the early 1970s, Russia joined the US in limiting its scope. Efforts to strengthen the treaty regime with a compliance protocol received lukewarm Russian support. This notwithstanding, Russia since 2001-02 has consistently presented itself as a BWC state party in good standing and called for the resumption of talks on a verification protocol. Over the past decade, Russia promoted the idea of a science advice mechanism for the BWC and use of its mobile military bio-medical units as useful BWC implementation tools in support of the assistance, cooperation, and investigation norms. However, in spite of these efforts to appear constructive in strengthening the BWC and its implementation, Russian proposals were clearly linked to the overall goal of a legally-binding compliance protocol, which it could be sure would not find US agreement. More recently, Russia increasingly spread disinformation about alleged offensive BW activities by the United States and other BWC states parties. As the FCM in September 2022 demonstrated, similar Russian tactics had in the past already led to the cancellation of bilateral public health cooperation, thereby undermining the implementation of the assistance norm.

Due to the geopolitics of the time, China was not involved in creating the BW prohibition regime. However, as the country emerged as a great power, it sought to influence regime evolution to match its growing role and bio-economic interests. While during the 1990s, China focused its attention on the full implementation of the international cooperation norm, during the past two decades China has commented more positively on dual-use export controls. It also has put greater emphasis on domestic biosafety and –security policies and sought to strengthen the regime with an international code of conduct for life scientists.

In sum, none of the great powers emerged as a supporter of broadening the normative base of the regime during the 1990s. Departing from the original trajectory would have required accepting additional legally binding obligations under the BWC compliance protocol negotiated by the AHG. From the early 2000s onward the focus of activities at the regime level shifted to strengthening norm implementation via joint understandings and, to a lesser degree, common activities by BWC states parties. In some cases, such as the debates about biosecurity and dual-use research of concern, this involved the formulation of new normative standards not at the international regime level, but at the level of national implementation or even at the sub-state level, for example when addressing specific epistemic communities in the life sciences. While all three great powers provided inputs in areas of particular interest to them, none of those initiatives resulted in a significant departure from the path charted for the BWC more than 50 years ago. Recent US and Chinese initiatives may still exert a positive influence on the prohibition of BW. The same cannot be said for the Russian disinformation campaign over recent years.

## The CBW network for the comprehensive strengthening of norms against chemical and biological weapons (CBWNet)

The research project CBWNet is carried out jointly by the Berlin office of the Institute for Peace Research and Security Policy at the University of Hamburg (IFSH), the Chair for Public Law and International Law at the University of Gießen, the Peace Research Institute Frankfurt (PRIF) and the Carl Friedrich Weizsäcker-Centre for Science and Peace Research (ZNF) at the University of Hamburg. The joint project aims to identify options to comprehensively strengthen the norms against chemical and biological weapons (CBW).

These norms have increasingly been challenged in recent years, *inter alia* by the repeated use of chemical weapons in Syria. The project scrutinizes the forms and consequences of norm contestations within the CBW prohibition regimes from an interdisciplinary perspective. This includes a comprehensive analysis of the normative order of the regimes as well as an investigation of the possible consequences which technological developments, international security dynamics or terrorist threats might yield for the CBW prohibition regimes. Wherever research results point to challenges for or a weakening of CBW norms, the project partners will develop options and proposals to uphold or strengthen these norms and to enhance their resilience.

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**Author Information**
Dr. **Alexander Kelle** is Senior Researcher at the Berlin Office of the IFSH, where he leads the *CBWNet* project and serves as *CBWNet* coordinator.

**Eva Siegmann** is a MA Candidate at Georgetown University. Previously she was a student employee at the Berlin Office of the IFSH, supporting CBWNet from April 2022 to July 2023.

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**Contact**
Responsible for Content §55, Abs.2 RStV:
Dr Alexander Kelle, IFSH
Reinhardtstraße 7, 10117 Berlin
E-Mail: CBWNet@ifsh.de

**www.cbwnet.org**
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