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CHEMICAL AND BIOLOGICAL NEWS 41

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The Biological Weapons Convention (BWC) held its Ninth Review Conference from 28 November to 16 December 2022. Geopolitics over biotechnology has once again made BWC an important treaty and its meetings, especially review conferences have assumed enormous significance. Covid-19 reached BWC as a section of the scientific community feared the man made virus basically causing the havoc across the world, and the international community discussed a role for the convention along with the World Health Organisation. The ongoing Russia-Ukraine conflict occasionally highlights some of the challenges of biological and chemical weapons. Allegations of violating and undermining the treaties keep coming.

The Think Zone, a creation of the Implementation Support Unit (ISU) of the BWC, collated information and on relevant issues relating to BWC. These resources have become useful not only for the discussions during the BWC RevCon but also afterwards. Compliance and verification once again became the topic of discussion. Although for a long period, ISU is being considered an inadequately staffed and funded to deal with the complex set of challenges bio-science and technology is posing, the 2022 RevCon has agreed to renew the mandate of the ISU and provide an additional position. This is still considered inadequate.

In comparison to the BWC, the Chemical Weapons Convention is supported by quite elaborate institutional framework—the Organisation for the Prohibition of Chemical weapons (OPCW). The CWC and its organisational support—OPCW—too has myriad problems. Chemical terrorism and unverified uses of chemicals as weapons have kept the meetings of the OPCW extremely

busy. The ISIS is active in a Africa and many other parts. Besides, the OPCW has to implement the mandate for peaceful uses of chemicals. The International Cooperation among member states is to be facilitated by the OPCW.

The current issue has an article on disinformation campaign. Dr Animesh Roul has discussed his paper on ongoing disinformation campaign in the realm of biological weapons. He has selected the case study of Covid-19 for his analysis. He finds all the great powers, especially China and the US involved in the disinformation regarding biological weapons.

Dr Gaurav Tyagi has discussed macro-securitization of antimicrobial resistance from an Indian perspective. Dr Suryesh K. Namdeo, in his piece, talks about the rapid advancements in science and technology, which are opening new frontiers for policy priorities in biosecurity. The article explores some of these priorities and concerns and discusses a way forward for evolving biosecurity measures with scientific developments.

The issue has a Book Review by Dr Tatyana Novossioloova. She has reviewed the book written by M. Crowley and M. Dando, titled *Toxin and Bioregulator Weapons: Preventing the Misuse of Chemical and Life Sciences*. It also carries Final Document of the Ninth Review Conference of the Biological Weapons Convention.

This issue of the CBW Magazine also comprises other features like Chemical-Biological News. With our readers' feedback, we wish to publish issues in the future that focus on a subject of particular concern. Kindly address contributions and feedback to: cbwmagazineeditor@gmail.com

Science and Technology Advancements and Biosecurity: New Horizon

Suryesh K. Namdeo

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Summary

The rapid developments in science and technology are opening new frontlines for policy priorities in biosecurity. Science and technology are also at the central to the Biological Weapons Convention. The present policy and regulatory frameworks, both at national and multilateral levels, are insufficient for managing the changes in science and technology and the concomitant opportunities and challenges they create. Policy institutions should frequently involve scientists having varied expertise to understand and develop policy expositions based on the latest scientific developments and their possible influence. Here, technology foretelling and anticipatory science policy tools could be applied, particularly for the convergence of emerging technologies.

The rapid advancements in science and technology are opening new frontiers for policy priorities in biosecurity. Science and technology are also at the core of the Biological Weapons Convention and find relevance in most of its Articles. From the perspective of biosecurity, the major areas of interest are synthetic biology, genome editing, virology, toxicology, agricultural biology, cyber biosecurity, neuro-technology, and the interface of these areas with other emerging technologies like artificial intelligence (AI). Other major risk areas include regulatory and oversight gaps in the biosafety and biosecurity practices in high containment labs as well as bio-foundries and Do-It-Yourself (DIY) labs. This article explores some of these priorities and concerns and discusses a way forward for evolving biosecurity measures with scientific developments.

Synthetic biology is used to design and create biological systems and products that have the potential to revolutionise the bio-economy by bringing new, cheaper, and more efficient products into the market.¹ Synthesized biomolecules, bio-systems, and microbes are essential for advancing research in biomedical sciences. However, robust oversight mechanisms to ensure that these synthetic biology products are not used for malicious purposes, are generally lacking.² Here, two particular areas of concern are the possible misuse of synthetic viruses and synthetic DNA. Synthetic viruses are generally used to study current and emerging viral diseases to understand their molecular mechanisms and develop drugs. However, the gain of function research in these viruses can create more infectious and lethal variants, which, if accidentally or intentionally released, can result in major outbreaks. Labs that work on synthetic

viruses have been relatively few, but their number is growing, and there is a need to establish a repository of details of all research activities involving synthetic viruses.

In contrast, a number of labs use synthetic DNA for molecular biology and genetic engineering experiments. Synthetic DNA can be introduced into microbes to alter their biological activity and function. The malicious application of synthetic DNA can increase the pathogenicity, transmissibility, and infectivity of dangerous microbes. It can also be used to programme microbes to produce certain kinds of toxins.³ Generally, synthetic biology is used in combination with genome editing technology such as CRISPR-Cas9, which can manipulate genetic material in organisms. In order to prevent the malicious use of synthetic biology, the International Gene Synthesis Consortium (IGSC), an industry body of DNA synthesis companies, has developed protocols to screen DNA sequences as well as the customers who place the order.⁴ However, IGSC is constrained, as it does not cover all geographies and all companies that synthesize DNA. A more international effort involving government, industry, and academia is needed to establish a robust oversight mechanism for synthetic DNA.

One of the consequences of the rapid pace of advancements in science and technology is that the essential ingredients for conducting biological research have become cheaper and more accessible than ever before. This has resulted in an increase in the number of institutional research labs along with the proliferation of DIY labs and bio-founderies.⁵ The DIY labs and bio-founderies, in particular, have insufficient biosafety and biosecurity measures in place to prevent the accidental release or malicious use of biological agents. There is also a policy gap as these facilities are primarily unregulated in several parts of the world. This lack of

oversight and monitoring increases the risks of non-State actors or even State-affiliated actors conducting biological research with malicious intent.

Another major priority area is maintaining high levels of biosecurity in high-containment laboratories working on dangerous pathogens. This is particularly important as several new high, and maximum-containment labs are currently being planned and established worldwide.⁶ Currently, the bio-safety and biosecurity standards for these labs vary widely around the world and will require constant updating as new pathogens and risks emerge. In addition to the traditional biological risks, these labs will need to be prepared for new kinds of threats, including cyber-attacks and the possible radicalisation of researchers working in these labs.

Complex synergies are emerging at the interface of different areas of biological sciences, especially synthetic biology and neurobiology on the one hand and developments in artificial intelligence, nanotechnology, cyber technologies, blockchain, and robotics, on the other. These synergies are likely to create huge opportunities for innovations that could boost the bio-economy but, at the same time, can create new risks concerning biological safety and security. For example, the rapid increase in the collection and processing of biological data in labs and hospitals has created risks of cyber-attacks to steal, exploit, manipulate or destroy such data.⁷ In fact, several cyber-attacks were recorded in research labs that were in the race to develop vaccines during the first two years of the COVID-19 pandemic, and measures were in place to prevent them.⁸ The biological data is inherently personal and can be used for malicious purposes, including blackmailing, extortion, bio-discrimination, and the creation of customized biological weapons.

The integration of digital and biological systems can pose new kinds of risks. For example, cyber-attacks on digital devices linked to the human body could impair biological functions. This risk is especially high with neuro-technology and other human augmentation techniques. Neuroscience and neuro-technology have a long history of interest for possible military applications.⁹ In future, neuro-technology could be used for reading, manipulating and destroying memories and thoughts, interrogation, and enhancing combatant performance. At the individual level, malicious applications of neuro-technology can affect privacy and mental integrity. There needs to be more clarity on what aspects of neuroscience and nanotechnology should be considered under the Biological Weapons Convention (BWC).

Similarly, new concerns are emerging from the convergence of AI with synthetic biology, neuro-technology, and agro-biology. For example, AI could be used to help identify and synthesize more dangerous pathogens and toxins. There have been some recent reports of such attempts that heighten such fears.¹⁰ Further, the application of AI in neuro-devices working on a brain-computer interface could be used for surveillance and pose severe risks to mental integrity and privacy. On the other hand, there are several possible benefits of the application of AI. For example, AI could help create epidemiological and medical countermeasures in case of a biosafety or biosecurity incident. Advanced algorithms, including AI, can help with the surveillance of crops to detect and prevent biosecurity incidents using images and data acquired by satellites, drones, or any other means. AI could also be used to discover cyber-vulnerabilities in research labs, hospitals, and offices of regulatory agencies.

Overall, the current policy and regulatory frameworks, both at national and multilateral levels, are inadequate for managing the developments in science and technology and the associated opportunities and challenges they create. Policy institutions should regularly engage with scientists having diverse expertise to understand and develop policy solutions based on the latest scientific developments and their possible impact. Here, technology forecasting and anticipatory science policy tools could be applied, particularly for the convergence of emerging technologies. Scientific advice at different levels of Government should be integrated with security requirements to create robust frameworks for biosecurity. At the time of writing, the Ninth Review Conference of the BWC is deliberating on establishing a science and technology advisory mechanism. While most State Parties of the BWC support establishing such a mechanism, it remains a challenge to build a consensus on the scope, authority, structure, responsibilities, and mode of function that such a mechanism would have. If such a structure comes up, it could act as a significant coordination and resource centre, providing credible technical advice for biosecurity worldwide.

Endnotes:

- ¹ Bio-foundries are integrated infrastructure facilities to enable rapid and efficient design, construction, and testing for bio-manufacturing and engineering biology.
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- 4 N.J. Taylor, and S. C. Kesterson, "Pathogens and Toxins of High Consequence: Category A and B Agents and Synthetic Biology: A Practical Guide to Understanding", *Physician Assistant Clinics*, 4(4), 2019, pp. 727-738.
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- 10 <https://www.scientificamerican.com/article/ai-drug-discovery-systems-might-be-repurposed-to-make-chemical-weapons-researchers-warn/> Accessed on March 11, 2023

Macro-securitization of Antimicrobial Resistance: An Indian Perspective

Gaurav Tyagi

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Summary

Global leaders have discovered from COVID-19 that we cannot overlook the threats from infectious disease. One such impending threat is and which may have global repercussions is Antimicrobial Resistance. As per the securitization model, for an existential threat to become a security issue, it needs to have a speech act followed by a receptive audience and ultimately, a policy-driven solution by the government. Finding inadequacy of securitization theory, the concept of macro-securitization was introduced by the same author to understand the phenomenon.

Background:

The COVID-19 pandemic unleashed havoc on the world; today the number of deaths from COVID-19 globally stand at a staggering 67.4 lakh. Global leaders have learned from COVID-19 that we cannot ignore the threats from infectious disease. One such threat that is looming large and has global repercussions is Antimicrobial Resistance (AMR).

In this article, we have analyzed the threat of Antimicrobial Resistance in India from the lens of securitization, as suggested by Barry Buzan, Ole Wæver, and Jaap de Wilde in 1998. As per the securitization model, for an existential threat to become a security issue, it needs to have a speech act (notably by government, politicians, bureaucrats, etc.) followed by a receptive audience and ultimately, a policy-driven solution by the government. It was found that the securitization theory was not sufficient for security issues that are global in nature; hence Barry Buzan and Ole Wæver (2009) came up with the concept of macro-securitization which is an “overarching securitization that relates, organizes, and possibly subsumes a host of other middle-level securitizations.”

Result: The speech act, audience, and policy-driven solutions are part of India’s response in tackling AMR, and it has become a security issue for healthcare professionals. The need of the hour is to educate primary health caregivers in Indian villages and the general population. Close coordination is required between the Centre and state governments.

Antimicrobial Resistance: An Introduction

As per the World Health Organization (WHO), “Antimicrobial Resistance (AMR)

occurs when bacteria, viruses, fungi, and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death. As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective, and infections become increasingly difficult or impossible to treat.”

The threat of AMR is as old as discovering the first antibiotic itself. Penicillin was discovered by Alexander Fleming when he noticed that a contaminant, *Penicillin notatum* in his Petri dishes was able to ward off the growth of *Staphylococcus aureus*. Thus began the golden era of antibiotics, and soon it was assumed that the world would be able to treat most infectious diseases with the ‘golden bullet’. The emergence of antimicrobial resistance was almost simultaneous with the discovery of antibiotics, and in some cases, resistance to a newly introduced antibiotic emerged in less than a year. The total cost of treating a patient with drug resistant infection is approximately double that of the susceptible organism. It increases the mortality rate and length of hospital stay. The menace of Antimicrobial resistance is now one of the major talking points of many international political and scientific agendas as the pace of antimicrobial drug development is slower than that of the emergence of resistance. The situation further becomes a significant cause of concern for society because, since 1987, there has been a ‘discovery void’ of new antibiotics. As rightly pointed out by Sir Alexander Fleming, “public will demand [the drug and] then will begin an era ... of abuses.”

AMR – Global Perspective

As per the Review on Antimicrobial Resistance, mandated by the Government of UK, AMR would account for 10 million deaths by 2050, leading to a loss of economic

potential of \$100 trillion between 2015 and 2050.¹ The UN has envisioned 17 Sustainable development goals, of which the emergence of AMR threatens seven. The global burden of Antimicrobial resistance assessed in 2019 amongst 88 pathogen-drug combinations was estimated to be 4.95 million deaths, of which AMR was directly responsible for 1.27 million. The majority of AMR-related deaths were in lower- middle income group countries, making it a top priority for some of the world’s poorest countries

The WHO has identified *E.coli*, *S. aureus*, *K pneumoniae*, *S pneumoniae*, *A baumannii*, and *Pseudomonas aeruginosa* as priority pathogens concerning AMR. These pathogens each were responsible for more than 250000 deaths attributed to AMR. Three infectious disease syndromes were responsible for the highest disease burden associated with AMR i.e., thorax and lower respiratory infections, intra-abdominal infections, and bloodstream infections. Resistance to Beta-lactam antibiotics (Cephalosporins, Carbapenems and penicillin) and fluoroquinolones – the first line of therapy against severe infections – is associated with 70 per cent of deaths attributable to AMR.²

AMR– Indian Perspective

In line with global data, Indian studies have also found *E. coli* to be the most isolated pathogen, followed by *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Staphylococcus aureus*.

The primary cause of worry for Indian policymakers is the rising patterns of Antimicrobial resistance in the Indian subcontinent. Thirty-six per cent of *E. coli*, 55 per cent of *Klebsiella pneumoniae*, and 87.5 per cent of *Acinetobacter baumannii*

isolates were found resistant to carbapenems (often considered a last resort antibiotic for drug-resistant gram-negative bacteria). *Methicillin resistance Staphylococcus aureus* (MRSA) emergence rate has increased from 28.4 per cent in 2016 to 42.6 per cent in 2021, an increase of about 50 per cent in just six years,³ thereby limiting the availability of treatment options to clinicians. Colistin resistance has also emerged in India, where dual resistance *Klebsiella pneumoniae* (Carbapenem-Colistin) had a mortality rate of 69.1 per cent.

Reasons for AMR

Antimicrobial resistance occurs naturally; it is a defence mechanism employed by bacteria to evade antibiotics, but misuse or inappropriate use of antibiotics accelerates the process. In one of the studies, it has been found that around 50 per cent of antibiotics used in acute care hospitals are inappropriate.⁴ It is common knowledge that antibiotics do not work against the common cold or flu; still, the flu season is a primary driver of antibiotic consumption across the globe.⁵ Another major reason for antimicrobial generation is the usage of antibiotics in animals. Over 70 per cent of antibiotics used today are for non-therapeutic use on animals,⁶ i.e., as a growth promoter. Other reasons for AMR include poor infection control in hospitals, lack of sanitation in households, non-availability of rapid diagnostics tests, etc.

Combating AMR

As per the Centre for Disease Control, to combat AMR globally, we need to have a multi-pronged approach, which should include:-

- a) Strict Implementation of infection prevention and control practices;
- b) Judicious use of antibiotics;

- c) Implementation of data and tracking systems and reporting resistance patterns locally and globally;
- d) Strengthening diagnostics lab for rapid identification of resistant bacteria.⁷

Apart from these, world leaders must ensure easy access to vaccines and diagnostics to lower income countries and more funding for developing new antibiotics and rapid diagnostic tests.

AMR Containment Policies

The year 2014 was pivotal in making AMR not just a concern for healthcare professionals but as a global political agenda. The then Prime Minister of UK, David Cameron appeared on BBC for an interview and stressed upon the urgency to tackle AMR and said that world will be “cast back into the dark ages of medicine” and “if we fail to act, we are looking at an almost unthinkable scenario where antibiotics no longer work, and we are cast back into the dark ages of medicine where treatable infections and injuries will kill once again.” He also mentioned during this interview that he discussed the issue of AMR with then-US President Barack Obama and German Chancellor Angela Merkel. President Obama issued an executive order in the same year in September and stressed that rise of AMR is a serious threat to public health and the economy and declared that “combating antibiotic-resistant bacteria is a national security priority.” Next year, during the G7 presidency, Germany took up the matter and convinced seven Heads of State for a “declaration on AMR”. The declaration stated that “Antimicrobials play a crucial role for the current and future success of human and veterinary medicine. We fully support the recently adopted WHO Global Action Plan on Antimicrobial Resistance. We will develop or review and effectively

implement our national action plans and support other countries as they develop their own national action plans.”⁸

Action Plan on AMR

To harmonize the efforts in combating AMR on a global scale, in May 2015 the WHO released a document called the *Global Action Plan (GAP)* on Antimicrobial Resistance and delineated the following five objectives:

- to improve awareness and understanding of antimicrobial resistance through effective communication, education and training;
- to strengthen the knowledge base and evidence through surveillance and research;
- to reduce the incidence of infections through effective sanitation, hygiene and infection prevention measures;
- to optimize the use of antimicrobial medicines in human and animal health; and
- to develop the case for sustainable investment that considers all countries’ needs and to increase investment in new medicines, diagnostic tools, vaccines and other interventions.⁹

Following the WHO’s GAP on AMR, many countries have formulated their own National Action Plan in combating AMR including India. India formulated its National Action Plan (NAP) on AMR in April 2017¹⁰ and submitted it at the 70th World Health Assembly at Geneva in 2017. In its NAP, India added one more objective to the strategies suggested by GAP; to “Strengthen India’s leadership on AMR through collaborations on AMR at international, national, and sub-national levels”. Three states have also formulated action plans for

AMR containment: Kerala, Delhi, and Madhya Pradesh.¹¹

Prime Minister Narendra Modi, in his monthly ‘Mann ki baat’ to the nation, stressed on the judicious use of antibiotics. During the third Global High-Level Conference on Antimicrobial Resistance in Muscat, Oman, Union Minister of Health Bharti Pawar pointed out that antimicrobial resistance is a silent and invisible pandemic and countering it features prominently on the national health agenda and has garnered political will at the highest level.¹²

India has also established an AMR surveillance network that comprises 30 tertiary care hospitals, and to further strengthen it, 36 sites from different states have been included in the surveillance network. Concerned ministries have supported the Delhi Declaration on AMR, an inter-ministerial initiative for AMR containment.¹³

Conclusion

Antimicrobial resistance is an existential threat and the policy response of Government of India in securitizing this threat will help in tackling the menace of Antimicrobial resistance. Pronouncements have been made at the highest level by the Government, Prime Minister Modi himself saying that “India recognizes anti-microbial resistance as one of the major global threats to public health¹⁴”. The Government of India has also implemented various policies as suggested by the WHO. But the challenge of AMR in India requires greater coordinated efforts at the state level. Health is a state subject and state governments need to act swiftly and effectively. As argued in the context of China, one of the shortcomings of the macro-securitization theory is that insufficient power is accorded to sub-state and sub-national actors.¹⁵ It also holds true in the Indian context, as the focal point of

policy implementation is at the state level. We require sustained efforts at state and central level to tackle the AMR more effectively. One of the important aspects of the macro-securitization theory is the receptive audience and “effective securitization is audience-centred¹⁶” There have been efforts at the national level and in some cases, at the state level, but sensitization of the audience and clinicians concerning AMR is still a work in progress and requires more sensitization programmes from the Government. India was the highest consumer of antibiotics in 2010,¹⁷ and there have also been reports regarding the rampant over-the-counter sale of antibiotics in India.

Endnotes:

- ¹ J. Chair O’Neill, “Tackling Drug-Resistant Infections Globally: Final Report and Recommendations”, *Review on Antimicrobial Resistance*, London, UK, 2016, pp. 1-84.
- ² “Global Burden of Bacterial Antimicrobial Resistance in 2019: A Systematic Analysis”, *Antimicrobial Resistance Collaborators, Lancet*, 12 February 2022, 399 (10325), pp.629-655, doi: 10.1016/S0140-6736(21)02724-0. Epub 19 January 2022. Erratum in *Lancet*. 1 October 2022, 400(10358), 1102. PMID: 35065702; PMCID: PMC8841637.
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Disinformation, CBW and COVID Concerns: Exploring the New Age Scourge

Animesh Roul

The author is a founding member and presently, the Executive Director at the Society for the Study of Peace and Conflict, New Delhi. This paper is part of his ongoing research project on 'Countering CBW Disinformation', supported by Health Security Partners (HSP), USA.

Summary

The growing trend of disinformation operations is weakening the trust in international community general and multilateral institutions in particular. The policy of biological weapons disinformation is being pursued by all the major powers, and quite interestingly, the victim of it is also from all the major global political groupings. The same is true about the Chemical Weapons Convention. As State-backed disinformation wars have become a central facet of global geopolitics, its disorderly impact on the international security environment and future challenges are yet to be decoded. Resolute disinformation campaigns could vitiate the national and global ambience that could in turn dent international cooperation during crises and emergencies.

The world is battling the scourge of disinformation due to the rise of digital or internet-based media and unbridled broadcast of fake, false or inaccurate information via traditional and digital (social) media platforms. This phenomenon is gaining notoriety due to its rapid spread and disruptive impact. The COVID-19 pandemic provided a classic example of distrust and disruption due to this information disorder. Though propaganda and influence operations existed during and prior to the Cold War, the rise of internet usage, social media tools, and real-time messaging applications have given lethal power to a host of players ranging from political operators, States and other actors with vested interests to criminals and terrorists, in manipulating news, events and information to their respective benefits. The power of disinformation demonstratively triggered widespread unrest, polarized public opinion, and spread distrust throughout societies and between States.

The increasing threat of disinformation campaigns can also undermine trust in international multilateral institutions (e.g. the United Nations and humanitarian organizations (e.g. the World Health Organisation or the World Food Programme). It has immense power to undermine confidence in compliance standards, understanding support to arms control treaties and conventions, and international cooperation. Similarly, a targeted disinformation campaign would make multilateral arms control or disarmament treaty regimes (e.g. the Biological Weapons Convention, the Chemical Weapons Convention, the Nuclear Non-Proliferation Treaty) vulnerable, under duress due to ongoing geopolitical tensions

raising compliance concerns that can adversely affect the verification and monitoring mechanisms. The article examines how this disinformation menace related to the COVID-19 pandemic and biological and Chemical weapons threats dominated the security discourse in the last decade.

Much of the disinformation among State actors in the last decade has been linked to a few major powers, such as Russia and China, primarily targeted against Western interests. While Russia has inherited this disinformation strategy from the Soviet era 'active measures'¹ programme, China is not far behind on influence operations with its growing geostrategic interests in Asia and beyond. Like the COVID-19 pandemic, the ongoing conflict between Russia and Ukraine also witnessed this phenomenon where disinformation through the internet and social media became a powerful tool for political actors to manipulate the geopolitical narrative to their advantage, albeit temporarily. The use and misuse of technology for disinformation purposes fulfils various political goals and covert State objectives.

COVID-19 Disinformation

As the coronavirus strain progressed to other parts of the world in early 2020 and overwhelmed affected States' health infrastructures, Chinese State-run media attempted to deflect its misdoings and mismanagement at home. It waged a disinformation campaign citing that American military members were responsible for bringing the coronavirus to Wuhan during the World Military Games. Several such accusations surfaced against the US, including a virus leak from Fort Detrick lab.² The origin of disinformation was traced to Russia, which underscored that the coronavirus is a biological weapon launched

by the Americans to harm the Chinese economy. Similar news also came from China, accusing the US of spreading the coronavirus. Chinese Foreign Ministry official Zhao Lijian promoted a conspiracy theory on Twitter that the virus had originated from the US and was brought to China later by the US military.³

In the US, news spread about how the coronavirus leaked from a BSL-4 bio-containment laboratory at the Wuhan Institute of Virology (WIV) in Wuhan, Hubei province, making the city an epicentre of the global pandemic.⁴ The news further spread through social and mainstream media that the virus was a Chinese bioweapon resulting from a secret scientific experiment.⁵ These unsubstantiated theories surrounding the origins of COVID-19 have made the bilateral atmosphere between China and the US more susceptible to distrust. The veracity of these accusations could not be confirmed at the height of the pandemic. Similar to the US allegation against China, assertions by Sir Richard Dearlove, a former British Secret Intelligence Service chief, that the new coronavirus was created in and escaped from the Wuhan lab were also unverified.⁶ However, before the UK dismissed Dearlove's views, the story had already been picked up by several agencies across the world.

In July 2020, another example of disinformation on bio-warfare surfaced, through a Report underscoring long-standing collaborative efforts between China and Pakistan to conduct experiments on dangerous pathogens.⁷ The Report also noted a secret military deal between the two countries to expand potential bio-warfare capabilities. It was alleged that China's Wuhan Institute of Virology (WIV) had signed a secret three-year agreement with Pakistan military's Defence Science and Technology Organisation for collaborative

research in “emerging infectious diseases” and the “biological control of transmitted diseases”. The Report even mentioned the results of five studies conducted by Chinese and Pakistani scientists involving the detection and characterization of deadly pathogens, including the West Nile Virus, the MERS-Coronavirus and the Crimean-Congo Haemorrhagic Fever Virus. This unverified Report triggered widespread speculation about the possible collaboration between China and Pakistan. Russian, Indian and American media houses covered the news elaborately. Iran, affected most by COVID-19, promoted conspiracy theories against the US that COVID-19 is a bioweapon produced by the US.

Ensuring and enforcing compliance with international conventions or treaties remains an uphill task and mostly untenable in an atmosphere of distrust and suspicion. The COVID-19 pandemic has taught us how only multilateral cooperation can reduce the risk of future threats that can engulf every living being beyond national boundaries. After sustained efforts, the WHO-led team of international scientists travelled to Wuhan in early 2021 to investigate the origins of COVID-19.⁸ Though Beijing was initially reluctant to agree to an independent investigation, it had, authorized a 10-member scientific team to investigate early infections in Wuhan.⁹ This ‘origin-tracing’ mission with a WHO mandate was not aimed at probing virus leak claims from the BSL-4 lab in Wuhan.¹⁰

Biological Weapon Disinformation

Biological weapon activities of the past and the legacy of the bio-warfare arsenal of a few States (e.g. US, Russia and China), along with their ongoing biodefence research, fuel fear and uncertainty about existing biological weapon capabilities and availability of material and technical expertise. Even

Western countries such as the US and the UK are not free from this suspicion, especially the possible misuse of science and technology. Throughout its 45 years, the Biological Weapons Convention (BWC) has witnessed few suspected violations. Most State parties, including the US, the UK, France, China and Russia, comply with the treaty regime. However, several key member states had elaborate biological weapon capabilities in the past, and a few others are involved in dual-use research, which is not prohibited under the BWC. The legacy biological weapon arsenals remain a sore point between State Parties, and often countries accuse each other of existing secret biological weapon capabilities. Several incidents in the past raised questions about BWC State parties’ compliance towards the treaty regime.

In the last few decades, the United States remained at the forefront in levelling accusations related to the BWC non-compliance against State Parties such as Iraq, North Korea, Iran, Libya and Cuba. The US was also accused by Iran and Indonesia of biological conspiracy violating the Convention. For example, in 2008, Siti Fadilah Supari, an Indonesian legislator, alleged that the US and the WHO had conspired against developing countries by seizing control of the H5N1 virus sample.¹¹ Likewise, the UK has also been the target of allegations of biological weapons development or use in the past. Despite these allegations, proving non-compliance is a challenge.

The unusual outbreak of human anthrax in the Soviet city of Sverdlovsk (presently Yekaterinburg) in 1979 due to an accident at a secret military bio-facility, triggered an international outcry, and only after the US-led international inspection, did Russia admit to the violation subsequently. However, Russia does not favour onsite investigation

and always refers to the UNSC provision for non-compliance investigation. Russia often raises questions about the non-compliance of the US, as it continues to question the activities of the Lugar Center for Public Health Research in Tbilisi, Georgia. It often alleges that the US Army Medical Research Directorate-Georgia (USAMRD-G) located at the Lugar Center, carries out dual-use research activities.

Besides these allegations against the US, a few other events showed the US in a bad light regarding arms control treaty compliance. The discovery of frozen vials of the smallpox virus variola on 1 July 2014, in an unused storage room in an FDA laboratory located at the NIH Bethesda campus in the US being a case in point.¹² In May 2015, Utah's US Defense Department Laboratory accidentally sent live Anthrax samples to laboratories and a US military base in South Korea. Nearly 22 military personnel at the Osan Air Base in South Korea received preventive treatment after possibly exposure to the sample.¹³ Countries like North Korea and Syria are secretive about their existing covert capabilities and their questionable intent to use or develop bioweapons either as a deterrent or as a defence. State Parties like China, too, faced international ire in the last decade for maintaining offensive bio-programmes in violation of its BWC obligations. In a 2005 report, the US observed that China's voluntary annual BWC confidence-building measures (CBM) data declarations were inaccurate and misleading.¹⁴ Even though China rejected these allegations, the SARS outbreaks in the past and recently, COVID-19 from Wuhan, raised eyebrows about its commitment towards BWC.

During the ongoing Russia and Ukraine conflict, Russia alleges the existence of US-funded biological weapon laboratories in Ukraine. It claims that these secret

American-funded labs in Ukraine are the epicentre for biological warfare activities. However, in early 2022, the US diplomatic representative denied any presence of secret Bio labs in Ukraine and accused Russia of spreading disinformation about bioweapons as part of a 'false-flag operation' for using chemical or biological agents in the Ukrainian conflict.¹⁵ Russia also circulated another conspiracy theory in March 2022 regarding US involvement in training birds in Ukraine to spread disease among Russian citizens. The allegations and media campaigns were rejected and countered by the US agencies as outright lies.¹⁶

China, in favour of Russia, further spread the conspiracy theory about the existence of US-funded biological weapons in Ukraine through official press briefings to make the disinformation more credible. Zhao Lijian from China's Foreign Ministry, while reading the Russian media report about the alleged discovery of a "military biological program" in Ukraine, urged the US Embassy in Ukraine to disclose information about its biological research facilities in the country.¹⁷ **To address this allegation, UNSC has met at least three times since February 2022 at Russia's request. However,** the UN office has maintained each time that it had seen no evidence of the use of biological weapons in Ukraine.¹⁸

Chemical Weapon Disinformation

Russian and North Korean disinformation strategies in the sphere of chemical weapon use and proliferation have remained a significant concern in the last decade. North Korea has out-rightly denied involvement in the assassination of North Korean leader Kim Jong Un's half-brother Kim Jong-Nam in Malaysia with the nerve agent VX in February 2017, and questioned the investigation and even the identity of the deceased.

Russia resorted to disinformation campaigns to evade attribution and accountability for using banned Chemical agents in the Sergei Skripal Novichok poisoning case in the UK in March 2018 and Alex Navalny's Novichok poisoning in August 2020.

The Russian government denied involvement in Skripal's case, and rejected reports by British authorities on the matter.¹⁹ Instead, pro-Russian media spread theories regarding Skripals' poisoning case by putting forward competing and contradictory narratives to distract or confuse public perception. Russian agencies adopted a similar distraction strategy in the Navalny poisoning case. In Twitter, Russian agencies circulated conspiracy theories terming Navalny's poisoning as a false flag operation by NATO to stop using the Nord Stream 2 gas pipeline from Russia to Europe. Some other pro-Russian messages question Navalny's credibility while blaming the West for the poisoning.²⁰ Russia is often blamed for the lack of transparency and cooperation surrounding the Novichok events in the past. Russia also rejected the proposal to use the Chemical Weapon Convention's consultation and clarification mechanisms to resolve allegations against its involvement in producing and using Novichok nerve agents.

North Korea, not a signatory to the CWC, adopted deny and deflect tactics on Kim Jong Nam's assassination in Malaysia. While denying the dead man's identity, North Korea maintained he was Kim Chol as per his diplomatic passport and not the half-brother of the North Korean leader as portrayed in the media or Malaysian investigations. The country also rejected a Malaysian autopsy claiming the use of any nerve agent, terming it as normal death due to a heart attack.²¹ The Malaysian court, however, termed the whole episode as a well-planned conspiracy between the two women

involved and the four North Koreans who fled the country on the day of the attack.²²

Conclusion

As State-backed disinformation campaigns have become a vital aspect of global geopolitics, its disruptive impact on the international security environment and future challenges are yet to be deciphered. Concerted disinformation campaigns could vitiate the national and global atmosphere that could undermine international cooperation during crises and emergencies. The COVID-19 pandemic has a lesson that individual States cannot effectively fight any biological or chemical threat of a global scale on their own. The importance of multilateralism once again resurfaced with much hope. However, at a time when disinformation in the form of accusations, false claims, and conspiracy theories dominates the information space, it is challenging to manage perceptions and trust in any multilateral agreement or collective understanding.

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M. Crowley and M. Dando, *Toxin and Bioregulator Weapons: Preventing the Misuse of Chemical and Life Sciences*, Palgrave, 2022, 330 pp.

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This timely book examines the evolution and current state of the international regime that prohibits the development, proliferation, and use of chemical and biological weapons. Crowley and Dando concentrate on advances in the study of toxins and bioregulators to demonstrate the relevance of the management of dual-use research in chemical and biological sciences to the effective implementation of the 1975 Biological and Toxin Weapons Convention (BTWC) and 1997 Chemical Weapons Convention (CWC). The authors put forward a compelling argument through “a series of illustrative country case studies highlighting areas [of research and related activities] where concerns or misperceptions may arise” (p. 2). They further explore options for strengthening the international chemical and biological disarmament and non-proliferation regime to ensure that cutting-edge scientific and technological advances are not utilised for purposes that are inconsistent with the goals of the two Conventions. This book contributes to an established interdisciplinary scholarship on chemical and biological security in the field of peace and conflict research.¹

Crowley and Dando’s book appears at a time when the CWC and BTWC are facing considerable challenges. The past decade has witnessed the renewed use of chemical weapons both on the battlefield and in targeted assassination attempts. A growing body of evidence indicates that the Syrian armed forces continued to carry out chemical weapon attacks following the country’s accession to the CWC.² To date, Syria has failed to guarantee that all of its chemical weapons and related production facilities are declared and destroyed.³ The chemical warfare nerve agent Novichok was used in the poisoning of Sergei Skripal and his

daughter, Yulia in 2018, and in that of Alexey Navalny in 2020.⁴ Amidst piling evidence that the Russian intelligence service orchestrated and carried out these attacks, Russia has systematically denied any involvement and at times, has even questioned the fact that the victims were poisoned at all. Following the invasion of Ukraine, Russia launched a high-level political and media campaign to accuse Ukraine and the US of developing biological weapons.. To advance its case, Russia used the mechanisms available both within the UN Security Council and the BTWC.⁵

Against this backdrop, the book highlights several important issues regarding the integrity of the CBW prohibition regime within the context of a rapid scientific and technological change and increasing political polarisation. First, Crowley and Dando draw attention to two categories of mid-spectrum agents – toxins and bioregulators – that fall within the scope of both the BTWC and the CWC.⁶ Toxins are not expressly defined by either of the Conventions, but Article 1 of the BTWC refers to “microbial or other biological agents, or toxins”, and Schedule 1 of the CWC features ricin and saxitoxin.⁷ For the purposes of the book, the authors adopt the Code’s definition of toxins propounded by the United States: “toxic material of plants, animals, micro-organisms, viruses, fungi, or infectious substances, or a recombinant molecule, whatever its origin or method of production” (p. 4). Bioregulators are “naturally occurring chemicals produced within living organisms”, which are involved in the regulation of core body functions (e.g. sleep, blood pressure, temperature). Bioregulators vary in terms of their structure and composition. Many bioregulators are peptides and some are involved in the functional chemistry of the brain. Both toxins and bioregulators can find application in weapon development and certain agents have previously been studied or used for

such purposes. Taken together, toxins and bioregulators offer an expanding wide range of weapon agent candidates with a potential to fuel a biochemical arms race.

Second, the authors examine the possible use of toxins and bioregulators for developing “less lethal” weapons for purposes that are not prohibited by the CWC, notably “law enforcement and domestic riot control purposes”. Crowley and Dando analyse three categories of “less lethal” weapons – namely, riot control agents; malodorants; and incapacitating chemical agents. A riot control agent (RCA) is any chemical not listed in the CWC Schedules which can rapidly produce sensory irritation or disabling physical effects in humans which disappear within a short time following termination of exposure. The CWC prohibits the deployment of riot control agents as a method of warfare but it does not address in detail their permissible use, including “the quantities of RCA that can legitimately be employed for law enforcement purposes nor the types of RCA means of delivery suitable for such purposes” (p. 215). Malodorants are “naturally occurring and synthesised chemicals affecting the human olfactory receptors, employed to elicit short-term and temporary physiological effects or behavioural responses” (p. 217). The authors note that “to date, no OPCW policy-making organ has determined whether malodorants should be considered as toxic chemicals and/or riot control agents under the CWC” (p.217). Incapacitating chemical agents, also called central nervous system (CNS)-acting chemical agents, are intended to cause prolonged but non-permanent disability or incapacitation such as “loss of consciousness, sedation, hallucination, incoherence, paralysis, disorientation, or other such effects” (p.12). In 2021, the Conference of States Parties (CSP) to the CWC adopted a Decision clarifying that at least one method of delivery of CNS-acting chemicals, that is,

their aerosolised use is inconsistent with law enforcement purposes as a “purpose not prohibited” under the CWC.⁸

Persisting ambiguities within the context of the CWC concerning the development and use of “less lethal” weapons can and in effect, does impact how States interpret and implement the provisions of the Convention. If left unchecked, diverging interpretations of what is permissible, in what context, and for what purposes, run the risk of easing the international prohibition on chemical weapons.

Third, Crowley and Dando discuss the implications of dual-use research on toxins and bioregulators for upholding the general purpose criterion enshrined in the BTWC and CWC. The general purpose criterion allows the use of biological agents, toxins, and toxic chemicals for purposes that are not prohibited by the two Conventions, as long as their types and quantities are consistent with such purposes. Dual-use chemical and life science research is, by definition, legitimate research that could also be misused to cause harm, including through the development of novel chemical and biological weapons. Moreover, such research could also be “construed as being intended to facilitate weaponization of such agents, or for other malign[ed] purposes, for use against human beings” (p. 2) especially when it is carried out in military or defence-related settings. The authors reflect on both of these nuances. For example, their proposed list of factors that may indicate research and development activities of potential concern (Table 1.3, p. 22), includes “dual-use work undertaken under the auspices of research establishments controlled, directly or indirectly, by defence, security, or law enforcement organisations, or that receive significant funding from such organisations”, as well as “dual-use research and/or development undertaken involving the

discovery and characterisation of novel toxins and bioregulators with potential weapons utility”. Dual-use research on toxins and bioregulators that could facilitate the development of “less lethal” weapons is particularly problematic, not least because States could see the existing ambiguities in the regulation of such weapons as an opportunity to bolster their security and military capabilities.

Each of these three themes is considered through six country case studies developed through empirical research: China, India, Iran, Russia, Syria, and the United States. The authors note that country choices were in part conditioned and limited by such factors as the availability of sufficient open-source material, particularly in English. They further note that the amount and quality of open-source information available for each country varies, and is in part “dependent upon the mechanisms established by that state to ensure oversight and accountability of relevant research and development activities, particularly those conducted or funded by military, security or law enforcement bodies, and the degree to which such measures facilitate reporting and transparency to the legislature and the public” (p. 21). One aspect that the book does not address in great detail concerns “the contextual factors that are important in understanding motivation behind state research and associated activities of potential concern” (p. 23). Developing this line of research could have important implications for improving the governance of dual-use chemical and life science research, to ensure that emerging advances in these fields are used only for peaceful purposes and the benefit of humanity and environment.

This book is a must-read for scholars and practitioners specialising in International Relations, Law, Political Science, and Strategic Studies, who wish to gain an in-

depth insight into the dynamics of chemical and biological disarmament. The added value of the book is that it enables the reader to engage with the issue of dual-use research through the use of concrete examples. As such, it can also be of interest to professionals within Chemical and Life Sciences.

Endnotes:

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Final Document of the Ninth Review* Conference

22 December 2022

Ninth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction

Geneva, 28 November – 16 December 2022

I. Organization and work of the Conference

1. The Final Document of the Eighth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC/CONF.VIII/4), in paragraph 77 of the Final Declaration, contained the following decision:

“The Conference decides that the Ninth Review Conference shall be held in Geneva not later than 2021 and should review the operation of the Convention, taking into account, *inter alia*:

- (a) New scientific and technological developments relevant to the Convention;
- (b) The progress made by States Parties on the implementation of the Convention; and
- (c) Progress of the implementation of decisions and recommendations agreed upon at the Eighth Review Conference, taking into account, as appropriate, decisions and recommendations reached at previous review conferences.”

* Any entry listed in this document does not imply the expression of any opinion regarding, and is without prejudice to, the legal status of any country or territory or of its authorities.

2. The final report of the 2020 Meeting of States Parties considered the arrangements for the Ninth Review Conference and its Preparatory Committee and contained the following decisions:

“29. As reflected in the reports of the 2020 Meetings of Experts and this report, the 2020 meetings were postponed several times due to the COVID-19 pandemic. The 2018-2020 intersessional programme could therefore not be concluded as originally planned in 2020.

30. In May 2021, States Parties therefore agreed by written silence procedure that several technical recommendations would be submitted for formal consideration and approval by the appropriate upcoming BWC meetings. In this regard, the Meeting of States Parties decided that the Preparatory Committee would be held in Geneva in in-person format in accordance with the regular practice under the BWC on 20 December 2021. It was agreed that this meeting would consider the agenda items on the organizational aspects of the Review Conference.

31. While acknowledging that the Eighth Review Conference in 2016 decided that “the Ninth Review Conference shall be held in Geneva not later than 2021”, the Meeting of States Parties, taking into account the extraordinary circumstances imposed by the COVID-19 pandemic, exceptionally and without setting a precedent, agreed the following technical adjustments:

- (a) The Ninth Review Conference would be held in Geneva in in-person

format in accordance with the regular practice under the BWC from 8 to 26 August 2022.”

3. Subsequently, at its meeting on 11 April 2022, the Preparatory Committee decided that:

“29. Taking into account the extraordinary circumstances, the Preparatory Committee reconsidered the decision of the 2020 Meeting of States Parties and decided that the Ninth Review Conference should take place in Geneva from 28 November to 16 December 2022.”

4. By resolution 76/67, adopted without a vote on 6 December 2021, and resolution 77/95, adopted without a vote on 7 December 2022, the General Assembly, inter alia, requested the Secretary-General to continue to render the necessary assistance to the Depositary Governments of the Convention and to provide such services as may be required for the conduct and the implementation of the decisions and recommendations of the review conferences.

5. The Preparatory Committee convened and held two meetings in Geneva on 20 December 2021 and then resumed its work from 4 to 11 April 2022 during which time it held 12 meetings. The following 115 delegations participated in the Preparatory Committee: Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Belarus, Belgium, Bhutan, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Cambodia, Canada, Chile, China, Colombia, Costa Rica, Cuba, Cyprus, Czech Republic, Democratic Republic of Congo,

- Dominican Republic, Ecuador, El Salvador, Estonia, Finland, France, Georgia, Germany, Ghana, Greece, Guatemala, Holy See, Honduras, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lao People's Democratic Republic, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritius, Mexico, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Russian Federation, Saint Kitts and Nevis, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, State of Palestine, Sudan, Sweden, Switzerland, Thailand, Timor-Leste, Tunisia, Türkiye, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Vanuatu, Venezuela (Bolivarian Republic of), Viet Nam, Zambia, Zimbabwe.
6. On behalf of the Secretary-General of the United Nations, Mr. Peter Kolarov, Political Affairs Officer, Office for Disarmament Affairs, opened the Preparatory Committee on 20 December 2021. Mr. Daniel Feakes, Chief of the Implementation Support Unit, served as Secretary of the Preparatory Committee. Mr. Hermann Lampalzer, Deputy Chief, Implementation Support Unit, Ms. Ngoc Phuong van der Blij, Political Affairs Officer, Implementation Support Unit and Ms. María José Orellana Alfaro, Documents Management Assistant served in the Secretariat.
 7. At its meeting on 20 December 2021, the Preparatory Committee unanimously elected Mr. Florian Antohei of Romania and Mr. Tancredi Francese of Italy as Vice-Chairs of the Preparatory Committee. The Preparatory Committee authorized the Bureau to handle technical and other matters in the period before the Review Conference was convened.
 8. At its meeting on 8 April 2022, the Preparatory Committee took note of the decision of the Group of the Non-Aligned Movement and Other States Parties to the BWC to hand over the presidency of the Ninth Review Conference and to retain its rotational right to preside over the Tenth Review Conference.
 9. The Coordinator of the Western Group presented the nomination of Mr. Leonardo Bencini, Ambassador and Permanent Representative-Designate of Italy to the Conference on Disarmament, for the position of President of the Ninth Review Conference. The Coordinator also specified that Ambassador Bencini's capacity to fulfil this role was subject to a decision by the Preparatory Committee that the Ninth Review Conference shall be held from 28 November to 16 December 2022, in order to ensure him time to undertake the necessary preparations and consultations.
 10. The Preparatory Committee agreed to recommend to the Ninth Review Conference that Mr. Leonardo Bencini, Ambassador and Permanent Representative-Designate of Italy to the Conference on Disarmament, preside over the Conference, on the understanding that the Group of the Non-Aligned Movement and other

States Parties to the BWC decided to retain its rotational right to preside over the Tenth Review Conference.

11. The Preparatory Committee decided to take its decisions by consensus.
12. The Preparatory Committee decided to use Arabic, Chinese, English, French, Russian and Spanish as official languages.
13. The Preparatory Committee, in accordance with draft rule 44, paragraph 1, noted the participation, without the right to take part in the adoption of decisions, of one State that had signed the Convention but had not yet ratified it, the Syrian Arab Republic.
14. The Preparatory Committee, taking note of written requests and in accordance with the draft rule 44, paragraph 2, decided to invite the representatives of two States neither party nor signatory to the Convention, Israel and Namibia, to participate as observers.
15. In the course of its sessions, the Preparatory Committee considered the following questions relating to the organization of the Review Conference:
 - (a) Date and duration;
 - (b) Provisional agenda;
 - (c) Draft rules of procedure;
 - (d) Background documentation;
 - (e) Publicity;
 - (f) Final document(s);
 - (g) Appointment of a provisional Secretary-General; and
 - (h) Financial arrangements for the Preparatory Committee and the Review Conference.

16. At its meeting on 20 December 2021, the Preparatory Committee adopted its interim report by consensus, as contained in document BWC/CONF.IX/PC/2. At its meeting, on 11 April 2022, the Preparatory Committee adopted its final report by consensus, as contained in document BWC/CONF.IX/PC/10.

17. Pursuant to the request of the Preparatory Committee, the following background documents were prepared by the Implementation Support Unit and issued as pre-session documents for the Conference:

- (a) A background information document on the history and operation of the confidence-building measures agreed at the Second Review Conference and revised at the Third and Seventh Review Conferences. The document should include data in summary tabular form on the participation of States Parties in the measures since the last Review Conference;
- (b) A background information document on the overall financial status of the Convention and implications of proposals for follow-on action after the Ninth Review Conference;
- (c) A background information document showing the additional understandings and agreements reached by previous Review Conferences relating to each article of the Convention, extracted from the respective Final Declarations of these conferences;
- (d) A background information document showing the common understandings reached by the Meetings of States Parties during the intersessional programme held from 2017 to 2020;

- (e) A background information document on the status of universalization of the Convention;
- (f) A background information document on compliance by States Parties with all their obligations under the Convention, to be compiled from information submitted by States Parties;
- (g) A background information document on the implementation of Article VII, to be compiled from information submitted by States Parties;
- (h) A background information document on the implementation of Article X, to be compiled from information submitted by States Parties, including information submitted pursuant to paragraph 61 of the Final Declaration of the Seventh Review Conference;
- (i) A background information document on new scientific and technological developments relevant to the Convention, to be compiled from information submitted by States Parties.

B. Organization of the Conference

- 18. In accordance with the decision of the Preparatory Committee, the Conference was convened at the Palais des Nations in Geneva from 28 November to 16 December 2022.
- 19. On behalf of the Secretary-General of the United Nations, Ms. Izumi Nakamitsu, Under Secretary-General and High Representative for Disarmament Affairs, opened the Conference.
- 20. At its first meeting, on 28 November 2022, the Conference elected by acclamation Ambassador Leonardo Bencini of Italy as President.
- 21. At the same meeting, the Secretary-General of the United Nations, Mr. Antonio Guterres, addressed the Conference via a video message.
- 22. The Conference adopted its agenda as recommended by the Preparatory Committee (BWC/CONF.IX/1). The agenda as adopted is attached as Annex I to this Final Document.
- 23. The Conference took note with appreciation of the final report of the Preparatory Committee (BWC/CONF.IX/PC/10).
- 24. The Conference adopted its Rules of Procedure as recommended by the Preparatory Committee (BWC/CONF.IX/2). The Rules of Procedure provided, inter alia, for:
 - (a) General Committee, chaired by the President of the Conference, and composed of the President, the 20 Vice-Presidents, the Chair and the two Vice-Chairs of the Committee of the Whole, the Chair and the two Vice-Chairs of the Drafting Committee, the Chair and the Vice-Chairs of the Credentials Committee, the three Regional Group Coordinators and the Depositaries (see paragraph 33 of the report of the Preparatory Committee);
 - (b) Committee of the Whole;
 - (c) Drafting Committee; and
 - (d) Credentials Committee composed of a Chair and Vice-Chair elected by the Conference, and five other members appointed by the Conference on the proposal of the President.
- 25. The Conference elected by acclamation 20 Vice-Presidents from the following States Parties: Brazil, Canada, China,

Croatia, Cuba, Dominican Republic, France, Germany, Guatemala, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Latvia, Malawi, Panama, Slovenia, Spain and Switzerland. It also elected by acclamation the Chair and Vice-Chairs of the Committee of the Whole, the Drafting Committee and the Credentials Committee, as follows:

Committee of the Whole

Chair: Ambassador Tatiana Molcean (Republic of Moldova)

Vice-Chair: Mr. Andreas Bilgeri (Austria)

Vice-Chair: Mr. Angel Horna (Peru)

Drafting Committee

Chair: Ms. Sara Lindegren (Sweden)

Vice-Chair: Mr. Ljupèò Gjorgjinski (North Macedonia)

Vice-Chair: Mr. Jonelle John Domingo (Philippines)

Credentials Committee

Chair: Mr. Angus September (South Africa)

Vice-Chair: Mr. Ali Sezgin Isilak (Türkiye)

The Conference also appointed the following five States Parties as members of the Credentials Committee: Finland, Iran (Islamic Republic of), Kazakhstan, Republic of Korea and Serbia.

26. The Conference noted the decision of one State Party to withdraw from the Eastern European Group as contained in BWC/CONF.IX/WP.46 and to establish a new regional group under the Convention, consisting of that State Party, and functioning in accordance with the practice of the Convention on a non-

discriminatory basis as the other regional groups. The Conference reaffirms the importance of the principle of equitable geographical representation within the Convention. The Conference noted that this State Party indicated that this withdrawal does not set a precedent, concerns only the work within the Convention and has no consequences outside of it, with regard to the work of UN bodies or the membership in the Eastern European Group within the UN.

27. The Conference confirmed the nomination of Mr. Daniel Feakes, Chief of the Implementation Support Unit, as Secretary-General of the Conference. The nomination had been made by the Secretary-General of the United Nations following an invitation by the Preparatory Committee. Mr. Hermann Alex Lampalzer, Deputy Chief, Implementation Support Unit, Ms. Ngoc Phuong van der Blij, Political Affairs Officer, Implementation Support Unit, Ms. María José Orellana Alfaro, Documents Management Assistant, Ms. Wenjie Wang, Administrative Assistant, Ms. Mariia Koroleva, Consultant, Ms. Barbara Hemmerle, Political Affairs Intern, Ms. Swann Jin, Political Affairs Intern, Mr. Nils Justen, Political Affairs Intern and Mr. Ryan Teo, Political Affairs Intern all served in the Secretariat.

C. Participation at the Conference

28. The following 137 delegations participated in the Conference: Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bangladesh, Belarus, Belgium, Benin, Bolivia (Plurinational State of), Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada,

Chile, China, Colombia, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Democratic Republic of the Congo, Denmark, Dominican Republic, Ecuador, El Salvador, Estonia, Eswatini, Ethiopia, Fiji, Finland, France, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guyana, Holy See, Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritius, Mexico, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Norway, Oman, Pakistan, Palau, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Samoa, San Marino, Saudi Arabia, Serbia, Sierra Leone, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, State of Palestine, Sudan, Sweden, Switzerland, Thailand, Timor-Leste, Trinidad and Tobago, Tunisia, Türkiye, Uganda, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Uzbekistan, Venezuela (Bolivarian Republic of), Yemen, Zambia, Zimbabwe.

29. In addition, two States that had signed the Convention but had not yet ratified it participated in the Conference without taking part in the making of decisions, as provided for in rule 44, paragraph 1 of the Rules of Procedure: Egypt and the Syrian Arab Republic.

30. Four States, Comoros, Djibouti, Israel and South Sudan, neither parties nor

signatories to the Convention, were granted Observer status in accordance with rule 44, paragraph 2 (a) of the Rules of Procedure.

31. The United Nations, including the Food and Agriculture Organization of the United Nations (FAO), the United Nations Interregional Crime and Justice Research Institute (UNICRI), the United Nations Institute for Disarmament Research (UNIDIR), the United Nations Office for Disarmament Affairs (UNODA) and the United Nations Technology Bank for Least Developed Countries (UNTB/LDC) attended the Conference in accordance with rule 44, paragraph 3 of the Rules of Procedure.

32. The Africa Centres for Disease Control and Prevention (Africa CDC) the European Union (EU), the International Centre for Genetic Engineering and Biotechnology, the International Committee of the Red Cross (ICRC), International Criminal Police Organization (INTERPOL), the North Atlantic Treaty Organization (NATO), the Organization of American States (OAS), the Organization for the Prohibition of Chemical Weapons (OPCW), the Organization for Security and Cooperation in Europe (OSCE), the Shanghai Cooperation Organization, the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH) were granted Observer Agency status in accordance with rule 44, paragraph 4 of the Rules of Procedure.

33. Forty-eight non-governmental organizations and research institutes attended the Conference under rule 44, paragraph 5 of the Rules of Procedure.

D. Work of the Conference

34. The Conference held 16 plenary meetings between 28 November and 16 December 2022.

35. At its first plenary meeting, on 28 November 2022, the Conference adopted its indicative programme of work, as set out in BWC/CONF.IX/3.

36. The Conference held a general debate, in which the following delegations made statements: Algeria, Argentina, Australia, Austria, Azerbaijan (on behalf of the Group of the Non-Aligned Movement and Other States), Belarus (on behalf of the Collective Security Treaty Organization), Belgium, Bolivia, Brazil, Burkina Faso, Cambodia (on behalf of Association of Southeast Asian Nations), Canada, Chile, China, Colombia, Cote d'Ivoire, Cuba, Czech Republic, Dominican Republic, Ecuador, El Salvador, Estonia (on behalf of Estonia, Latvia and Lithuania), Finland, France, Georgia, Germany, Germany (on behalf of the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction), Guatemala, Holy See, Hungary, India, Indonesia, Iraq, Ireland, Islamic Republic of Iran, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Libya, Malaysia, Mexico, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nepal, Netherlands, New Zealand, Niger, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Russian Federation (on behalf of the Commonwealth of Independent States), Russian Federation (on behalf of the Shanghai Cooperation Organisation), Samoa, Saudi Arabia, Serbia, Sierra Leone, Singapore, Slovakia, South Africa, Spain, State of Palestine, Sudan, Sweden,

Switzerland, Thailand, Timor Leste, Türkiye, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela (Bolivarian Republic of), Zambia. Statements were also made by the European Union, the International Centre for Genetic Engineering and Biotechnology, the United Nations Technology Bank for Least Developed Countries, the World Organization for Animal Health, the Shanghai Cooperation Organisation, the North Atlantic Treaty Organization and Interpol.

37. The Committee of the Whole held 11 meetings between 30 November and 12 December during which it reviewed the provisions of the Convention, article by article. At its eleventh and final meeting, on 12 December 2022, a compilation of all proposals (BWC/CONF.IX/COW/INF.2 and Add.1) was presented, but the Committee was not able to reach consensus. The Committee submitted its report BWC/CONF.IX/COW/CRP.1 to the Conference at its plenary meeting on 13 December 2022. The Conference took note of the report to be issued as document BWC/CONF.IX/COW/1.

38. During the Conference, the President conducted a series of informal consultations, and was assisted in his work by Facilitators in the following areas:

Assistance and cooperation (Article X): Ambassador Maria Teresa Almojuela (Philippines)

Review of developments in the field of science and technology related to the Convention: Mr. Ljupèò Gjorgjinski (North Macedonia)
National implementation: Ms. Grisselle del Carmen Rodriguez Ramirez (Panama)

Assistance, response and preparedness (Article VII): Ms. Tiyamike Banda (Malawi)

Future intersessional work programme: Mr. Tancredi Francese (Italy)

Finances and the ISU: Ms. Henriëtte van Gulik (Netherlands)

39. The Drafting Committee held no formal meetings.

40. The Credentials Committee held three meetings. At its third and final meeting on 14 December 2022 the Credentials Committee adopted its report as contained in document BWC/CONF.IX/CC/CRP.1 to be issued as document BWC/CONF.IX/CC/1. The Conference took note of the report.

E. Documentation

41. A list of documents of the Conference is contained in Annex II of this Final Document. All documents on this list are available on the BWC website at <https://meetings.unoda.org/bwc-revcon/biological-weapons-convention-ninth-review-conference-2022> and through the United Nations Official Document System (ODS), at <http://documents.un.org>.

F. Conclusion of the Conference

42. At its sixteenth and final plenary meeting, on 16 December 2022, a Draft Final Declaration as contained in BWC/CONF.IX/CRP.2/Rev.1 was presented, but the Conference was not able to reach consensus. At the same meeting, the Conference adopted by consensus its Final Document, as contained in document BWC/CONF.IX/CRP.2/Rev.2,

as orally amended comprising two parts and two annexes, as follows:

Part I: Organization and work of the Conference

Part II: Decisions and recommendations

Annex I: Agenda of the Conference

Annex II: List of documents of the Conference

II. Decisions and recommendations

A. Outcome of the 2017 - 2020 intersessional programme

1. In accordance with the decision taken by the Eighth Review Conference, the 2017 Meeting of States Parties discussed issues of substance and process for the period before the Ninth Review Conference and reached consensus on an intersessional process, as reflected in Section V of its Report (BWC/MSP/2017/6).
2. The Conference notes that the Meetings of States Parties and Meetings of Experts functioned as an important forum for exchange of national experiences and in-depth deliberations among States Parties. The Meetings of States Parties engendered greater common understanding on steps to be taken to further strengthen the implementation of the Convention and considered several proposals on how to reflect the deliberations, including on any possible outcomes, of the Meetings of Experts, but the consideration was inconclusive. However, the Conference regrets that no consensus was reached on the deliberations, including on any possible outcomes, of the Meetings of Experts.
3. The Conference notes the contribution by the World Health Organisation (WHO), the Food and Agriculture Organisation of the United Nations (FAO), the World Organisation for Animal Health (WOAH) and other relevant international organisations, as well as scientific and academic institutions and non-governmental organisations, to the Meetings of States Parties and Meetings of Experts.

B. Intersessional programme for 2023 – 2026

Meetings of the States Parties

4. Reaffirming the utility of having an intersessional programme, the Conference decides that States Parties will hold annual meetings between 2023 and 2026 in Geneva, in in-person format in accordance with the regular practice under the Convention, for a duration of three days each year. The first such meeting will be held from 11 to 13 December 2023.
5. The Conference decides that the Meetings of States Parties will be responsible for managing the intersessional programme in support of the Convention, including taking necessary actions with respect to budgetary, financial and organisational matters, with a view to ensuring the proper implementation of the intersessional programme. The Meetings of the States Parties will also consider, on an annual basis, progress on universalisation of the Convention, the annual report of the Implementation Support Unit and, as appropriate, the implementation of decisions taken by the Conference.
6. The Conference decides that the 2023 Meeting of the States Parties will be chaired by a representative of the Group of the Non-Aligned Movement and Other States. The Chairperson will be supported by two Vice-Chairpersons.
7. The Tenth Review Conference will consider the work and outcomes of these meetings and decide on any further action.

Working Group on the strengthening of the Convention

8. Determined to strengthen the effectiveness and to improve the implementation of the Convention in all its aspects, the Conference decides to establish a Working Group open to all States Parties.

The aim of the Working Group is to identify, examine and develop specific and effective measures, including possible legally-binding measures, and to make recommendations to strengthen and institutionalise the Convention in all its aspects, to be submitted to States Parties for consideration and any further action. These measures should be formulated and designed in a manner that their implementation supports international cooperation, scientific research and economic and technological development, avoiding any negative impacts.

In this context, the Working Group will address the following:

- (a) Measures on international cooperation and assistance under Article X;
- (b) Measures on scientific and technological developments relevant to the Convention;
- (c) Measures on confidence-building and transparency;
- (d) Measures on compliance and verification;
- (e) Measures on national implementation of the Convention;
- (f) Measures on assistance, response and preparedness under Article VII;
- (g) Measures on organizational, institutional and financial arrangements.

9. The Conference notes that the decision to establish the Working Group is without prejudice to the mandate of the Ad Hoc Group established by the Special Conference of 1994 (BWC/SPCONF/01) nor does it supersede, supplant or change it.
10. In fulfilling its mandate, the Working Group will take into account, inter alia, as appropriate, all documents agreed by the States Parties under the Convention, as well as the work already done by States Parties to strengthen the Convention, without prejudice to any decision or position.
11. The Rules of procedure of the Conference will be applied to the Working Group, *mutatis mutandis*. The Working Group will conduct its work by consensus.
12. Recognizing the need to balance an ambition to improve the intersessional programme within the constraints – both financial and human resources – faced by States Parties, the Conference allocates fifteen days to the Working Group for its substantive meetings, every year for the period from 2023 to 2026. The Conference urges the Working Group to complete its work as soon as possible, preferably before the end of 2025.
13. The Working Group will meet in Geneva, in in-person format in accordance with the regular practice under the Convention. The first meeting will be held from 15 to 16 March 2023 to discuss organisational issues. The substantive meetings of the Working Group will be held from 7 to 18 August and from 4 to 8 December 2023. For subsequent years, the Meetings of States Parties will set the dates of the substantive meetings of the Working Group, as appropriate, with the

understanding that one of the meetings each year will be held consecutively with the Meeting of States Parties.

14. At its organisational meeting, the Working Group will elect a Chairperson and two Vice-Chairpersons for the period 2023-2024. The Chairperson will update the annual Meetings of States Parties on the work of the Working Group.
15. The Implementation Support Unit will render the necessary assistance and provide such services as may be required for the convening and activities of the Working Group.
16. At the completion of its work, the Working Group will adopt a report, by consensus, that includes conclusions and recommendations according to its mandate. The adopted report will be submitted to States Parties for their consideration at the Tenth Review Conference, or earlier at a Special Conference if it is requested according to the procedure established by the Third Review Conference (BWC/CONF.III/23), to decide on any further action.

C. Tenth Review Conference

17. The Conference reaffirms that Review Conferences constitute an effective method of reviewing the operation of the Convention with a view to assuring that the purposes of the Preamble and the provisions of the Convention are being realized. The Conference therefore reaffirms the previous decision that Review Conferences be held at least every five years and decides that the Tenth Review Conference will be held in Geneva, in in-person format in accordance with the regular practice

under the Convention, not later than 2027.

The Review Conference should review the operation of the Convention, taking into account, *inter alia*:

- (a) new scientific and technological developments relevant to the Convention;
- b) the progress made by States Parties on the implementation of the Convention; and
- (c) progress of the implementation of decisions and recommendations agreed upon at the Ninth Review Conference, taking into account, as appropriate, decisions and recommendations reached at previous Review Conferences.

D. International Cooperation and assistance, with a particular focus on strengthening international cooperation and assistance under Article X

18. The Conference decides to develop with a view to establishing a mechanism open to all States Parties to facilitate and support the full implementation of international cooperation and assistance under Article X. In order for this mechanism to be established, the Working Group on the strengthening of the Convention will make appropriate recommendations.

E. Review of scientific and technological developments relevant to the Convention

19. The Conference decides to develop with a view to establishing a mechanism to

review and assess scientific and technological developments relevant to the Convention and to provide States Parties with relevant advice. In order for this mechanism to be established, the Working Group on the strengthening of the Convention will make appropriate recommendations.

F. Promotion of universalization

20. The Conference notes with satisfaction the increase in the number of accessions to the Convention since the Eight Review Conference and stresses at the same time that there is a continuing need to achieve its universalization.
21. The Conference therefore requests States Parties to:
 - (a) Promote universalization of the Convention through bilateral contacts with States not party;
 - (b) Promote universalization of the Convention through regional and multilateral fora and activities;
 - (c) Report, as appropriate, on their activities at annual Meetings of States Parties;
 - (d) Provide, as appropriate, the Implementation Support Unit with relevant information on activities related to the promotion of universalization of the Convention.
22. The Conference decides that the Chairpersons of Meetings of States Parties will coordinate universalization activities, address States not party to the Convention, provide an annual report on universalization activities at Meetings of

States Parties, and provide a progress report to the Tenth Review Conference.

Bearing in mind the primary responsibility of the States Parties on the implementation of this decision, the Conference tasks the Implementation Support Unit to:

- (a) Provide administrative support to the Chairpersons of Meetings of States Parties in the implementation of this decision;
 - (b) Consolidate and make available information on progress made by States not party towards ratification or accession.
23. The Conference encourages States Parties to give more attention to States in which the ratification or accession process have started or are well advanced, and to those States waiting for further information or assistance or that have other priorities, as described in the annual reports on universalization.
- ## **G. Implementation Support Unit**
24. The Conference notes with appreciation the work of the Implementation Support Unit and that it has successfully discharged its mandate. The Conference decides to renew the mandate of the Implementation Support Unit, *mutatis mutandis*, for the period from 2023 to 2027.
 25. Without prejudice to the decision of the Sixth Review Conference (BWC/CONF.VI/6) on the establishment of the Implementation Support Unit and taking into account its decisions and the need for the Implementation Support Unit to render the necessary assistance

and provide the services required for the intersessional period, the Conference decides to establish one new full-time staff position within the Implementation Support Unit, only for the period from 2023 to 2027. The Conference notes that all staff of the Implementation Support Unit will be engaged through the relevant recruitment procedures of the United Nations, considering the necessity of securing the highest standards of efficiency, competence and integrity, and giving due regard to the importance of recruiting the staff on as wide a geographical basis as possible, as well as to ensure balanced involvement of men and women.

26. The Conference notes that States Parties in a position to do so may consider making voluntary contributions to the Implementation Support Unit to enhance its ability to carry out its mandated tasks. Any such contributions will be made in full transparency, will be detailed in the annual report of the Unit, and will be used exclusively for the mandated tasks of the Unit.
27. The Implementation Support Unit will submit an annual written report to all States Parties on its activities to implement its mandate. The Unit's performance will be evaluated and its mandate reviewed by the States Parties at the Tenth Review Conference.

H. Sponsorship Programme

28. The Conference notes with appreciation the functioning of the sponsorship programme and welcomes the continued willingness of donors to provide voluntary contributions that have allowed to support and increase the participation of representative of developing States.

29. In order to enhance such support and participation, the Conference decides to renew the sponsorship programme, funded by voluntary contributions from donors in a position to provide them. The sponsorship programme will continue to be administered by the Implementation Support Unit in consultation with the Chairperson and Vice-chairpersons of the Meetings of States Parties. Priority for sponsorship will be given to those States Parties which have previously not participated in the meetings, or have been unable to regularly send experts from capital. Sponsorship may also be provided, depending on the availability of resources, to enhance participation of states not party in order to promote universalization of the Convention.

I. Financial Matters

30. The Conference stresses that the payment of annual assessed contributions by the States Parties in a timely manner and in full is of utmost importance and a prerequisite for the sustainability of the Convention. In this context, the Conference urges all States Parties to honour their financial commitments.
31. The Conference welcomes the improvement of the financial situation following the measures endorsed by the 2018 Meeting of States Parties, as reflected in Section V of the Report (BWC/MSP/2018/6), confirms their effectiveness and decides to review them at the Tenth Review Conference.
32. Recalling the decision of the 2018 Meeting of States Parties to establish, as an interim measure, a Working Capital Fund (WCF), and having reviewed its effectiveness and explored the possibility that it could be financed by assessed

contributions in line with that decision, the Conference decided that the WCF should continue to be financed by voluntary contributions of States Parties and used solely as a source of short-term financing pending receipt of reasonably anticipated contributions, taking into account the average collection rate and pattern of payments over the preceding three years. Drawdowns from the WCF should be repaid to the WCF from annual assessed contributions of States Parties within 12 months. In order to ensure the continuity of approved programmes and activities priority should be given to funding the contracts of the Implementation Support Unit. The effectiveness and functioning of the WCF is to be further reviewed at the Tenth Review Conference. Regular reporting on expenditure, collections, and the use of the WCF by the United Nations Office in Geneva and the Implementation Support Unit is to be continued.

33. The Conference stresses the need to continue monitoring the overall financial situation of the Convention and to keep it under active review, and requests the Chairperson of the annual Meetings of States Parties, in close consultation with the States Parties, the Implementation Support Unit, the Office for Disarmament Affairs and the United Nations Office at Geneva, to report on the overall financial situation of the Convention, implementation of the measures endorsed in 2018, and possible further measures for consideration by the Meetings of States Parties.
34. The Conference takes note of the financial implications of its decisions to strengthen the Convention, including the costs of the

meetings to be held during the next intersessional period and the costs related to the Implementation Support Unit. The Conference decides that such costs will be shared by all States Parties, based on the United Nations scale of assessment pro-rated to take into account differences in membership between the Convention and the United Nations. In this respect, the Conference approves the estimated costs for the period 2023 to 2026, to be issued as BWC/CONF.IX/8.

35. The Conference notes that, under UN financial procedures, funds must be available before meetings can be held. The Conference requests States Parties to proceed with the payment of their share of the estimated costs as soon as the assessment notices have been received from the United Nations to help ensure that the meetings can be held as scheduled.

Annex I

Agenda for the Ninth Review Conference

1. Opening of the Conference
2. Election of the President
3. Adoption of the agenda
4. Submission of the final report of the Preparatory Committee
5. Adoption of the rules of procedure
6. Election of the Vice-Presidents of the Conference and Chairpersons and Vice Chairpersons of the Committee of the Whole, the Drafting Committee and the Credentials Committee
7. Credentials of representatives to the Conference:
 - (a) Appointment of the Credentials Committee
 - (b) Report of the Credentials Committee
8. Confirmation of the nomination of the Secretary-General
9. Programme of work
10. Review of the operation of the Convention as provided for in its Article XII:
 - (c) General debate
 - (d) Articles I-XV
 - (e) Preambular paragraphs and purposes of the Convention
11. Consideration of issues identified in the review of the operation of the Convention as provided for in its Article XII and any possible consensus follow-up action
12. Follow-up to the recommendations and decisions of the Eighth Review Conference and the question of future review of the Convention
13. Other matters
14. Report of the Committee of the Whole
15. Report of the Drafting Committee
16. Preparation and adoption of the final document(s)

Chemical and Biological News

Fentanyl is a Dangerous Drug, Not a Weapon of War

16 June 2023

Calls by the US to add fentanyl to the Chemical Weapons Convention have politicized arms control and undermined efforts to curb chemical warfare.

With all the bizarre, partisan proposals circulating in Washington, DC, it takes a lot to elicit surprise: Enter the Project Precursor Act. This Republican Party-led Act would require the Biden administration to use its voice, vote, and influence to designate fentanyl as a “chemical weapon” under the Chemical Weapons Convention. What elevates it beyond the ridiculous to dangerous is that Congressional Democrats seem to be complacently nodding along.

The Bill claims to interrupt the fentanyl trade and protect Americans from its dangers. Fentanyl is one of the most severe threats to communities across the United States, and it deserves a powerful, whole-of-government response. Unfortunately, the Project Precursor Act is little more than an ill-conceived exercise in political posturing.

Politicizing Arms Control

In his statement introducing the Bill, House Foreign Affairs Committee Chairman Michael McCaul (R-TX) made a powerful case that fentanyl’s impact is similar to that of a weapon of mass destruction. But he seems to have forgotten that he is dealing in metaphors. Rather than outline a thoughtful, targeted strategy to manage a serious public health crisis, the GOP leadership is opting to undercut a landmark arms control treaty that is a vital tool for preventing literal chemical attacks.

Such attacks are rare primarily because of the success of the Chemical Weapons Convention, one of the most effective arms control agreements in history. After chemical weapons killed 1.3 million soldiers in the First World War and millions of people at Nazi extermination camps, there have been only a handful of documented uses of chemical weapons since the end of the Second World War. In many ways, war has become more brutal for civilians, and the law of war has become increasingly contested, but the taboo of chemical weapons remains universally respected.

US’s advocacy for adding fentanyl to the Chemical Weapons Convention is not only a slippery slope towards more politicization of arms control but also towards actual conflict.

The Organization for the Prohibition of Chemical Weapons (OPCW), which implements the Treaty, has overseen the destruction of over 99 per cent of the declared chemical weapons stockpiles. It won the 2013 Nobel Peace Prize for its efforts. But it’s not suited to monitor controlled substances. Asking it to do so would only divert resources from its core mission and invite similar bad-faith, politically motivated efforts from other governments.

Past presidents have proposed the use of military force to eliminate or deter the use of chemical weapons, with or without Congressional authorization.

There is no margin for loose talk on these subjects in light of Republican proposals to take an increasingly militarized approach to problems with Mexico. Two members of Congress have introduced legislation to authorize the use of military force against the cartels, an approach proposed by President

Donald Trump while he was in office. In looking to appear tough on fentanyl, Congressional action today may have consequences for communities in Mexico and service members in the United States in the future. Even if the Project Precursor Act never becomes law, having the House on record naming fentanyl as a chemical weapon could be cited in a legal argument for military action in the future. This is a risk we should not take.

A group of civil society organizations with missions ranging from drug policy to peace to international human rights, are asking members of Congress to oppose the Bill. But so far, Congressional Democrats have not voiced their opposition in the face of this reckless stunt. Facing a series of votes on hawkish measures that take a military-first approach to a variety of multidimensional challenges, some appear concerned that voting no on all of them would negatively impact their electoral prospects. Rather than confront this farce head-on, these members of Congress seem dead-set on finding their way to yes on something, no matter how preposterous the substance is.

<https://inkstickmedia.com/fentanyl-is-a-dangerous-drug-not-a-weapon-of-war/>

UN Investigative Team Outlines Findings Around ISIL Chemical Weapons Use

8 June 2023

Senior officials with the Investigative Team to Promote Accountability for Crimes Committed by Da'esh/ISIL (UNITAD), presented some of their findings to a Member States meeting at the UN Headquarters in New York.

For the past five years, UNITAD has been gathering evidence of crimes committed during ISIL's self-proclaimed Caliphate from

June 2014 to December 2017, which could be used to prosecute the extremists in national or foreign courts.

Prosecution is rare

Christian Ritscher, Special Adviser and Head of UNITAD, recalled that chemical weapons use is outlawed internationally and could constitute a crime against humanity, war crime or even contribute to genocide, if a specific group is targeted.

“To the best of my knowledge, the use of chemical weapons by non-State actors has rarely been adjudicated, if at all, in any court – whether national or international – around the world. As UNITAD, we would like to play our part and aim to change this,” he said.

The investigations into ISIL's development and use of chemical and biological weapons began two years ago, looking into the March 2016 attack on the town of Taza Khurmatu and whether other incidents had taken place elsewhere.

Team Leader Paula Silfverstolpe said ISIL's operations represent the culmination of nearly two decades of experimentation by Sunni jihadi groups, marking “the most sophisticated programme developed by non-State actors so far”.

The overall manufacturing of weapons and ammunition fell under ISIL's self-styled Department of Defence, specifically the Committee of Military Development and Manufacturing (CMDM), which had a monthly budget of over a \$1 million as well as extra-budgetary funds to purchase raw materials.

More than 1,000 combatants were involved in production, according to ISIL payroll records.

Hundreds of individuals were deployed to the chemical weapons programme, and specific job advertisements were placed to recruit scientists and technical experts, including from abroad, drawing people from countries such as the United States, France, the United Kingdom and Belgium.

<https://news.un.org/en/story/2023/06/1137492>

Western Powers Considering Action on Russia over its Chemical Weapon Use: US Ambassador to OPCW

The Hague, Netherlands. Edited By: Moohita Kaur Garg Updated: 23 May 2023, 09:

Western nations, as per the US Ambassador to the global chemical weapons body, the Organisation for the Prohibition of Chemical Weapons (OPCW) are looking at taking measures against Russia over its alleged nerve agent attacks.

As per AFP, tensions at the OPCW have soared since the global chemical weapons body's investigators found that Novichok, a Soviet-era nerve agent, was used against Kremlin critic Alexei Navalny in 2020. The nerve agent was also found to have been used against a former Russian spy in England in 2018.

Speaking to AFP on Monday, US envoy Joseph Manso said that "the United States and many countries are concerned about Russian non-compliance, and Russian non-compliance is at the heart of the problems at the OPCW."

"We're going to keep looking for what the right tools are to bring Russia into compliance. It is not something we're going to forget about," he added.

Manso accused Moscow of being responsible for the recent failure of the OPCW to agree on a new five-year plan and said that Russia's non-compliance lies at the core of the problems within the OPCW.

During the recent OPCW meeting held in May 2023 Russia accused the West of "politicising" the Organisation. The five-yearly meeting was held to assess progress on a 1997 agreement to eradicate chemical weapons.

The meeting failed to agree on a final document that would have set out its priorities for the next five years.

<https://www.wionews.com/world/western-powers-considering-action-on-russia-over-its-chemical-weapon-use-us-ambassador-to-opcw-595272>

OPCW Fifth Review Conference opens 15 May 2023

OPCW Member States meet to evaluate the Convention's implementation status and set out priorities for the Organisation for the upcoming years.

The Fifth Session of the Review Conference of the States Parties to the Chemical Weapons Convention (RC-5) opened at The Hague, the Netherlands. The session is livestreamed here.

The Conference of the States Parties/ convenes in a special session called the Review Conference (RC) every five years to examine the Chemical Weapons Convention's (CWC) operation. The RC evaluates the Convention's implementation status and sets out priorities for the OPCW for the upcoming years. It provides strategic direction for the Organisation and ensures that it has adequate resources to deliver on all its core objectives, taking into account any

relevant scientific and technological developments./

Some of the topics discussed during the week-long Conference were the role of the OPCW and the CWC in strengthening international peace and security, including preventing the re-emergence of chemical weapons; maintaining readiness to respond to use or threats of use of chemical weapons; developments in science and technology relevant to the Convention's implementation; promoting authorised and peaceful applications of chemistry and ensuring safe production and secure use of chemicals.

“The OPCW is on a firm path ahead, spurred by a 26-year legacy of successful implementation of the Chemical Weapons Convention. We take pride in this legacy with a sense of responsibility. It compels us to learn from the past to update our knowledge and skills, as the future is already here. At present we work in a global security context that is notably different from the one at the entry into force of the Convention in 1997,” said OPCW Director-General, Ambassador Fernando Arias, at the opening of the Conference. “Today, the ban against the use of chemical weapons is permanent and incontestable. And the Convention is nearly universal.”

“Over the past 26 years, the robust verification method of the Organisation has generated confidence in compliance with the Convention. It has set a gold standard among multilateral disarmament agreements. To maintain this high level, the tools for verification must evolve in line with advances in science and technology,” he added.

“In this sense, we developed the project for the construction of the Centre for Chemistry and Technology (CCT), which was

inaugurated last Friday, 12 May 2023, in the presence of His Majesty King Willem Alexander of The Netherlands. The CCT will significantly enhance the operational and capacity-building capabilities of the Organisation. At the Fourth Review Conference in November 2018, it was just an idea. Today, thanks to the generous contributions of 57 countries, the European Union, and other donors, we have a modern platform for facilitating our activities related to research, analysis, training, information exchange, and capacity building,” the Director-General emphasised.

<https://www.opcw.org/media-centre/news/2023/05/opcw-fifth-review-conference-opened-today>

OPCW Centre for Chemistry and Technology Officially Inaugurated

12 May 2023

The Centre will strengthen the capabilities of OPCW and its Member States to implement the Chemical Weapons Convention

In the presence of His Majesty King Willem-Alexander of the Netherlands the new Centre for Chemistry and Technology (ChemTech Centre) of the Organisation for Prohibition of Chemical Weapons (OPCW), was inaugurated in Pijnacker-Nootdorp, Netherlands today.

During the ceremony, His Majesty the King unveiled a plaque to mark the official inauguration of the Centre and was given a guided tour of the facilities.

“The ChemTech Centre is a success of multilateral diplomacy and a tangible symbol of what the international community can achieve together for the benefit of global peace and security. It is a privilege and

honour that the Centre is being inaugurated in the presence of His Majesty King Willem-Alexander of the Netherlands,” the Director-General said in his opening remarks. “I thank the 57 donor countries, and other donors, including the European Union and the members of the “Global Partnership Against the Spread of Weapons of Mass Destruction” for their strong political and financial support to make this Centre a reality. We will leave a special legacy to future generations in the common interest of peace and security.”

Speaking on behalf of the OPCW’s host country, H.E. Mr Paul Huijts, Secretary-General of the Ministry of Foreign Affairs of the Kingdom of the Netherlands, stated: “It is a great honour to participate in the inauguration ceremony of the ChemTech Centre. As Host Nation to and Member State of the OPCW, the Netherlands is strongly committed to upholding the global norm against the use of chemical weapons. It is our firm belief that all Member States will benefit from the new and exciting opportunities the ChemTech Centre has to offer and that it will greatly contribute to further bolster its international role, particularly in disarmament, verification and cooperation.”

The ChemTech Centre is an important upgrade to the OPCW’s capabilities to adapt to the evolving global security landscape and assisting Member States in upholding the global norm against chemical weapons. It will ensure that the Organisation remains able to address threats and opportunities arising from rapid progress in science and technology.

<https://www.opcw.org/media-centre/news/2023/05/opcw-centre-chemistry-and-technology-officially-inaugurated>

Ukraine Using Chemical Weapons, Russian Journalist Claims

11 May 2023

Banned substances were reportedly deployed in Zaporozhye Region

Ukrainian forces have used chemical weapons that caused loss of consciousness after inhalation, *Komsomolskaya Pravda* correspondent Alexander Kots reported on Thursday, citing sources in the Russian military. The alleged attack happened near Orehov, in Zaporozhye Region.

The use of substances banned by international Conventions appears to be part of the much-anticipated Ukrainian offensive, the journalist wrote on Telegram.

According to Kots, Western-supplied tanks have been spotted outside of Kharkov, while Ukrainian troops have launched attacks on Russian positions north and south of Artyomovsk, which they call Bakhmut.

On Thursday evening, the Russian Defence Ministry said there were, “no active operations” on the Zaporozhye front, and that the “general situation in the area of the special military operation is under control.”

Multiple Western officials have said over the past week that all the weapons, ammunition and supplies required for Ukraine’s grand counter-offensive had already been delivered. On Thursday, the UK confirmed it had supplied Kiev with long-range ‘Storm Shadow’ missiles.

Ukrainian President Vladimir Zelensky, however, claimed he needed more time and more armoured vehicles before he could launch the assault, in order to avoid casualties. In the same interview, Zelensky

claimed Ukraine had nothing to do with the drones that attacked the Kremlin last week.

According to US presidential candidate Robert F. Kennedy Jr., whose son had volunteered on Kiev's side for several months last year, Ukraine has suffered around 300,000 military casualties and is taking losses at a far higher rate than Russia.

Donetsk People's Republic authorities had accused Ukrainian troops of dropping chemical weapons from drones back in February, pointing to frontline reports and videos shared by Ukrainians on social media.

<https://www.rt.com/russia/576138-ukraine-chemical-weapons/>

US Making 'Bioweapons Components' in Ukraine – Moscow

11 April 2023

The US is using Ukraine to manufacture components for biological weapons, the Commander of Russia's Nuclear, Biological and Chemical Defence Forces told the State Duma on Tuesday. Lieutenant General Igor Kirillov says the Russian military found ample evidence of this in Donetsk, Lugansk and Kherson.

"We have no doubt that the US, under the guise of ensuring global biosecurity, conducted dual-use research, including the creation of biological weapons components, in close proximity to Russian borders," Kirillov told lawmakers.

He said the military has come to this conclusion after interviewing multiple eyewitnesses and going over some 2,000 pages of documentation found in Kherson Region and the Donetsk and Lugansk People's Republics. The investigation also involved a parliamentary task force and federal law enforcement.

Moscow raised concerns over a network of secretive US-funded laboratories in Ukraine in the early weeks of the conflict, and has frequently made public evidence about the programme ever since. The US Government confirmed the existence of the labs in March 2022, but insisted they were neither illegal nor intended for a military purpose, despite the fact that much of their funding went through The Pentagon.

According to Kirillov, the investigation has identified specific individuals involved in the military bio-research in the territory of the US and Ukraine. He also noted that the facts made public by the Russian Defence Ministry have not been disputed.

"No one, including Western countries, has had any doubts about the authenticity of the published documents," the General said.

Moscow took the bio-labs issue to the UN last October, requesting an international probe, but the motion was blocked by the US, UK, and France in the Security Council.

The programme in Ukraine was previously known as 'Joint biological research' but has since been rebranded as 'Biological control research', according to documents Kirillov presented in the first week of April 2023. The US has blamed an alleged "Russian disinformation campaign" for the increased public scrutiny of the bio labs.

<https://www.rt.com/russia/574555-ukraine-biolabs-weapons-military/>

US Resumes Bio labs Programme in Ukraine – Russian MoD

7 April 2023

Washington is constructing secretive new facilities and is training personnel, Moscow has claimed

The US has quietly resumed its controversial bio labs programme in Ukraine and is focusing on the construction of secretive new facilities and the training of personnel, the Russian Defence Ministry has claimed.

A new trove of documents on alleged US-funded biological programmes in Ukraine was presented by the Commander of Russia's Nuclear, Biological and Chemical Defence Forces, Lieutenant General Igor Kirillov, during a media briefing on Friday.

The US has engaged in damage control efforts to prevent potential leaks from Ukrainian specialists on the true nature of the biological research programmes, Kirillov asserted.

<https://www.rt.com/russia/574362-us-ukraine-biolabs-program/>

Qatar Builds Asia's Capacity in Chemical Safety and Security Management

30 March 2023

Seminar contributes to addressing emerging threats and increasing safety and preparedness in chemical industry

The Organisation for the Prohibition of Chemical Weapons (OPCW) and Qatar's National Committee for Prohibition of Weapons (NCPW) jointly hosted a seminar on the Chemical Weapons Convention (CWC) and Chemical Safety and Security Management for Asian Member States from 19 to 21 March 2023 in Doha, Qatar.

In his opening remarks, Brigadier General Abdulaziz Salmeen Aljabri, Chairman of the NCPW, highlighted the importance of chemical safety and security management, a key element related to the implementation of the CWC's Article XI.

"Ensuring chemical safety and security management requires interaction across different sectors, including academia and industry," he added.

The Head of OPCW's International Cooperation Branch expressed gratitude to Qatar for its continuous support to the Organisation and gave updates on the OPCW Centre for Chemistry and Technology (ChemTech Centre) which will significantly enhance the Organisation's capabilities to rid the world of chemical weapons and provide further capacity-building opportunities for Member States.

The seminar, fully funded by Qatar, contributes to Asian Member States' capacity in various aspects of chemical safety and security management, including new technologies as well as tackling emerging threats to the chemical industry, such as cybersecurity and drone attacks.

Since 2011, the Doha Workshop has been one of the long-standing courses on chemical safety and security management funded by Qatar to support Asian Member States' chemical emergency preparedness.

The seminar was attended by 26 international participants (20 of whom received financial support to attend the event) from 18 OPCW Member States (Bangladesh, China, India, Indonesia, Iraq, Laos, Lebanon, Malaysia, Micronesia, Myanmar, Nepal, Oman, Pakistan, Palestine, Saudi Arabia, Thailand, Sri Lanka, Vietnam) as well as a number of local participants from Qatar.

<https://www.opcw.org/media-centre/news/2023/03/qatar-builds-asias-capacity-chemical-safety-and-security-management>

Expanding the Australia Group's Chemical Weapons Precursors Control List with a Family-Based Approach

Stefano Costanzi • Gregory D. Koblenz • Richard Cupitt

20 March 2023

The Australia Group (AG) is a forum of like-minded States seeking to harmonize export controls to prevent the proliferation of chemical and biological weapons. The AG Chemical Weapons Precursors list features dual-use chemicals that can be used as precursors for the synthesis of chemical weapons, all individually enumerated. This is in contrast to the Chemical Weapons Convention (CWC) Schedules, which, alongside entries describing discrete chemicals, also include entries that describe families of chemicals.

By using families of chemicals, the CWC achieves the objective of covering with a single entry, a wide array of related chemicals of concern, including chemicals that have not yet been made. There are practical reasons why the AG Chemical Weapons Precursors list is exclusively based on the enumeration of individual chemicals. A cheminformatics tool, of which we have developed a prototype, the Nonproliferation Compliance Cheminformatics Tool (NCCT), has the potential to enable export control officers to handle control lists that contain families of chemicals. Thus, it opens the way to expand the AG Chemical Weapons Precursors list to a family-based approach for some of its entries. Such a change would result in a closer alignment of the chemical space covered by the AG Chemical Weapons Precursors list with that covered by the CWC

Schedules, thus closing loopholes that could be exploited by proliferators.

https://www.stimson.org/wp-content/uploads/2023/03/Costanzi_et_al_Pure_and_Applied_Chemistry_2023.pdf

There's a New US National Security Obsession — Biotech

Chris Miller, 6 March 2023

The ability to apply massive computing power to DNA is causing concern over biological warfare

Biotechnology has quietly become America's newest national security concern. From Congress to the intelligence agencies, Washington's leaders have concluded that control over biotechnologies will be critical not only to the country's health, but to national security as well. Biotech tools have made rapid advances of late, enabling new therapies, vaccines, manufacturing techniques — and biosecurity risks. It has long been recognised that DNA is just a complex code, telling cells how to operate. Gene-editing technologies have become more precise and vastly cheaper, making it easier than ever to “re-programme” organisms. In addition, more powerful computing capabilities have provided new clarity into the meaning of DNA's “code”; one use of these capabilities is for manufacturing. For centuries, humans have relied on micro-organisms to produce beer and yoghurt, but with the right reprogramming, bacteria can be made to produce many new types of chemicals. In 2010, DARPA, the Pentagon's long-range R&D arm, launched a programme called Living Foundries, aiming to synthetically manufacture 1,000 molecules. While there are many potential civilian uses of bio-manufacturing, the US military has

been a critical early investor. Living Foundries, for example, has already produced new fuels for missiles, which can be more perfectly tuned to the needs of missile engines than traditional fuel refining allows. The supply chain is simpler, too, with yeast (which manufactures the fuel) and sugar (which feeds the yeast) the two main ingredients. DARPA-supported researchers have also used microbes to produce antibiotics, pesticides, detergents, drug ingredients and liquid crystals. A key driver of these advances is the application of huge volumes of computing power to DNA. Guess-and-check was a slow research method; deep-learning systems like Google's Deep Mind are far faster, as the company's AlphaFold protein-structure prediction tool demonstrates. Due to this, access to genetic data will be a critical resource. BGI, the Beijing-based firm, has gathered a vast trove of data, using products like prenatal tests and COVID-19 swabs, which are sold globally, to perk up genetic data.

<https://www.ft.com/content/cb9cd845-e9b0-4243-97f3-c315dac11fb4>

The UK Must Prepare for the Biosecurity Threats to Come

Sophie Rose, 19 February 2023

Malign intent, human error and the evolution of viruses present us with heightened risks.

We need to get serious about biosecurity — and quickly. Biological risks have evolved dramatically in a short time, and governments need to act, both at home and together. Advances in biotechnology have potentially made it easier to create or modify deadly pathogens, lowering the barriers for adversarial States and extremist organisations to develop biological weapons. Referring to the 2018 novichok attack in Salisbury, the UK's integrated review has

warned of a “realistic possibility” that terrorists will launch a successful chemical, biological, radiological or nuclear attack by 2030.

Meanwhile, high containment laboratories proliferate around the world as life science research expands, increasing the likelihood of an accident involving dangerous pathogens. And as we have learnt, naturally occurring outbreaks could become future pandemics, even more transmissible or deadly than COVID-19. Whether through maligned intent, human error or the evolution of viruses, we now face a range of threats. Biosecurity needs to keep those charged with protecting our safety, up at night. The US has begun to recognise the risks. At the end of last year, the Prevent Pandemics Act was passed to bolster the country's preparedness.

The bipartisan legislation promises to enhance detection capabilities, bolster supply chains and accelerate medical counter-measure development. Senator Patty Murray, who tabled the legislation, told Congress that “we are taking action so we never go through a crisis like this again”. An Office of Pandemic Preparedness and Response Policy will be responsible for mitigation of biological threats across the Federal Government. The new unit will implement the national biodefence strategy, which includes developing early warning capabilities and investing in emerging technologies to deter State and non-State actors from developing biological weapons. Signalling the scale of the ambition, the strategy seeks \$88 billion of funding over five years.

In the UK, officials in the Cabinet Office's National Security Secretariat are finalising a refresh of the 2018 National Biological Security Strategy. While that plan recognised the range of biological risks the country faces,

it provided few details on implementation or resources. Without clear accountability and sufficient funds, it is perhaps no surprise that by the COVID-19 outbreak some 18 months later, the UK wasn't nearly as well prepared as it should have been. The new strategy is our best shot at rectifying this. It must include an implementation plan identifying who will tackle each risk, with a timeline for delivery. And its commitments must be properly funded. These are financially constrained times, but the £376 billion cost of the pandemic in the UK shows the eye-watering consequences of failing to invest. The recent national resilience framework is at least one heartening sign that the Government is starting to recognise the imperative of defence against extreme risks.

Finally, the UK needs to act in concert with others around the world to counter the risk of biological threats of every origin. The UK leads the world in metagenomic sequencing – this could offer the possibility of detecting new pathogens at the very beginning of an outbreak. We should pioneer the creation of an interconnected early warning system at home and through artful diplomacy, drive development of a global system to sound the alarm on potential pandemics. With a new cabinet facing so many challenges, ruthless prioritisation is needed to safeguard the UK's economic well-being and national security. Biosecurity needs to be up there – delivered through an ambitious strategy and dogged implementation of its recommendations.

<https://www.ft.com/content/b89d51c4-d148-4565-b9f1-48b1073504f1>

South Sudan becomes the 185th State Party to the Biological Weapons Convention

15 February 2023

The Parliamentarians for Global Action's (PGA) International Peace and Security

Programme was very pleased to be informed that South Sudan has deposited its Instrument of Accession to the Biological Weapons Convention on 15 February 2023.

PGA congratulates the Government of South Sudan on the occasion of the deposit of its Instrument of Accession to the BWC and expresses the sincere hope that this achievement may also serve to inspire, directly or indirectly, the taking of steps needed to restore peace and security at the national level.

The PGA would also like to take this opportunity to acknowledge the many different important contributions made by PGA members, Hon. Alma Yak and Hon. Stanslaus Jada since 2018 and also, more recently, by Amb. Joshua Franco Paul of the Ministry of Foreign Affairs and International Cooperation, leading to this milestone event.

The PGA also recognizes the important contributions made by certain other key stakeholders, including, most notably, by the BWC's Implementation Support Unit, as well as regional organizations and several UN Member States

<https://www.pgaction.org/news/south-sudan-bwc-accession.html>

OPCW Releases Third Report by Investigation and Identification Team

27 January 2023

The OPCW Investigation and Identification Team (IIT)'s third report concludes that there are reasonable grounds to believe that the Syrian Arab Air Forces were the perpetrators of the chemical weapons attack on 7 April 2018 in Douma, Syrian Arab Republic.

Based on the holistic assessment of the large volume and wide range of evidence gathered

and analysed, and on the convergence of the outcomes of such corroborated multiple analyses, the IIT concluded that, on the evening of 7 April 2018, at least one helicopter of the Syrian “Tiger Forces’ “ Elite Unit dropped two yellow cylinders containing toxic chlorine gas on two apartment buildings in a civilian area in Douma, killing 43 named individuals and affecting dozens more.

“The use of chemical weapons in Douma – and anywhere – is unacceptable and a breach of international law,” said OPCW Director-General Ambassador Fernando Arias.

“The Chemical Weapons Convention was signed 30 years ago – it represents a legally binding commitment of 193 States Parties to ban chemical weapons completely. OPCW’s Technical Secretariat was given a mandate by the Conference of the States Parties in June 2018 to identify the perpetrators of chemical weapons use in Syria. This report delivers on that mandate.”

The IIT assessed physical evidence collected and provided by OPCW experts, States Parties, and other entities. This includes 70 environmental and biomedical samples, 66 witness statements, and other verified data, such as forensic analysis, satellite images, gas dispersion modelling, and trajectory simulations. The evidence was scrutinised by IIT investigators, analysts, and several external independent experts.

The IIT considered a range of possible scenarios and tested their validity against the evidence they gathered and analysed to reach their conclusion: that the Syrian Arab Air Forces are the perpetrators of this attack.

The conclusion of the report is reached on the basis of “reasonable grounds”, which is the standard of proof consistently adopted

by international fact-finding bodies and commissions of inquiry. The IIT conducted its investigation between January 2021 and December 2022.

<https://www.opcw.org/media-centre/news/2023/01/opcw-releases-third-report-investigation-and-identification-team>

Syrian Army Responsible for Douma Chemical Weapons Attack, Watchdog Confirms

By Louisa Loveluck

27 January 2023

A unit of elite Syrian troops was responsible for a 2018 chemical weapons attack that killed 43 civilians in the Syrian town of Douma, the global chemical weapons watchdog said Friday.

The 7 April attack was part of a brutal military offensive by Syrian President Bashar al-Assad’s troops as they forced rebel fighters from the outskirts of Damascus. Photographs that showed men, women and children dead in a stairway began circulating online in the early hours of the next morning. Video footage showed others choking or foaming in the mouth.

The United States, Britain and France retaliated days later, launching a rare salvo of airstrikes against Syrian government targets. But in the months that followed, Syria and its Russian allies vehemently denied that Assad’s forces had been responsible for any chemical attack. International weapons inspectors struggled to access the two sites in question and the incident became a magnet for Russian-backed disinformation.

A previous effort by the Organization for the Prohibition of Chemical Weapons (OPCW) had already concluded that a chemical attack had taken place in Douma, but had no mandate to assign blame.

In the organization's 139-page Report, it described an exhaustive effort to do just that — investigators combed through 1.86 terabytes of data, took 66 witness statements and examined data from 70 samples.

“On the evening of 7 April 2018, at least one helicopter of the Syrian ‘Tiger Forces’ Elite Unit dropped two yellow cylinders containing toxic chlorine gas on two apartment buildings in a civilian-inhabited area in Douma, killing 43 named individuals and affecting dozens more,” the OPCW concluded.

<https://www.washingtonpost.com/world/2023/01/27/syria-chemical-weapons-douma-opcw/>

No End in Sight for Deadlock On Biological Weapons Ban

Riley Griffin, 14 December 2022

Scientific advances have eroded barriers to the development of biological weapons. They are now easier to produce and harder to identify. Despite the increasing threat, the Biological Weapons Convention) a verification protocol to confirm that signatories are not using biology as a tool of war.

Izumi Nakamitsu, the United Nations' Under-Secretary-General of Disarmament Affairs, said that the Biological Weapons Convention is the “least effective” of all disarmament treaties because no clear process exists to determine compliance.

“With chemical weapons, there's a list of prohibited chemicals that are easy to detect

and verify, but with bio, it's much, much more complicated,” Nakamitsu said. “There are a lot of [grey] zones,” particularly when it comes to scientific research being conducted in labs run by industry or academia.

Still, Nakamitsu believes countries should not shy away from the challenge of producing a verifiable treaty. “The international community really needs to tackle those complexities,” she said.

It certainly has tried. In the early 1990s, after Russia admitted operating a covert biological weapons programme in violation of the treaty, the Federation agreed to open non-military laboratories to US and UK officials on a reciprocal basis. This attempt to strengthen the Biological Weapons Convention led a dozen Russian officials to conduct surprise inspections of Pfizer facilities in Indiana and Connecticut with only 48 hours' notice.

The visits flustered Pfizer employees and prompted a backlash. The powerful drug industry argued that the inspections compromised business interests and left them vulnerable to intellectual property theft. Their case influenced a consequential US decision to back away from global efforts to monitor biological weapons.

Fast forward nearly two decades: The US has shown a willingness to explore potential verification measures once more, but it is unlikely to get there at the latest Geneva Conference, which concludes on 16 December. So far, the Russian delegation has used the three-week-long global meeting to peddle disinformation alleging that the US supports a biological weapons programme in Ukraine.

A State Department official said that Russia's unsupported claims could serve as a smokescreen to disguise the country's own weaponization of viruses, bacteria and other pathogens. "While at the Conference, I tried to get answers from Konstantin Vorontsov, deputy director of the Russian foreign ministry's department for non-proliferation and arms."

<https://www.bloomberg.com/news/newsletters/2022-12-14/no-end-in-sight-for-deadlock-on-biological-weapons-ban>

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