

# **Biosafety and biosecurity**

*A disarmament perspective*

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# Biosecurity & -safety and disarmament

- **Biosecurity & Biosafety**
  - Physical design standards for facilities in function of types of disease agents present or being manipulated
  - Protocols governing the manipulation of disease agents (including emergency procedures)
  - Dedicated skills and expertise for the different professional categories
  - Physical design and procedural standards to prevent any unauthorised access to pathogens
- **Disarmament**
  - Weapon destruction and technology conversion to peaceful purposes
  - Prevention of future armament
    - By states
    - By non-state actors (terrorists & criminals)
  - Requires a prohibition, a norm and the co-option of various stakeholder communities to nurture the norm (e.g., governments, industry, scientific community, civil society, ...)
- **What is the link between both?**

# Sources of the norm against BW

- **International treaties**
  - 1925 Geneva Protocol
    - Bans the use of CBW in war
  - 1972 Biological and Toxin Weapons Convention (BTWC)
    - Bans development, production and stockpiling of BW and toxins
    - Ban on use explicitly referred to at 4<sup>th</sup> Review Conference (1996)
  - 1993 Chemical Weapons Convention (CWC)
    - Bans development, production, stockpiling and use of toxins
- **UN Security Council resolutions**
- **National laws**
- **Professional and scientific codes of ethics and conduct**
- **Industry standards and best practices**

# The BTWC as a disarmament treaty

- **Biological and toxin weapons cannot be developed, produced, or stockpiled, or otherwise acquired or retained (Art. I)**
  - Ban on use through reference to 1925 Geneva Protocol
  - Confirmation of ban on use at 1996 and 2006 Review Conferences
- **Destruction or conversion obligation (Art. II)**
  - Must have been fulfilled before a State can become a new Party to the BTWC (2006 Review Conference)
- **Non-proliferation obligation (Art. III)**
  - No transfer to any recipient (state or non-state actor) of BTW
  - No assistance, encouragement or inducement of states, groups of states or international organizations to acquire BTW
- **National legislation and regulations makes these prohibitions applicable to individuals and legal entities in State Party (Art. IV)**

# Science & technology in BTWC

- **Article XII**
  - Review conference (now every 5 years)
  - “Such review shall take into account any new scientific and technological developments relevant to the Convention.”
- **Purpose**
  - To be able to update the common understanding of the scope of the core **prohibition** (Article I), e.g.,
    - Methods of creation of pathogenic agents
    - Alteration of microbial agents
    - Sub-cellular understanding of disease
  - To be able to update the **obligations** of states parties in line with update scope of the prohibition
- **Perennial controversy about what S&T should cover**
  - 1<sup>st</sup> RevCon (1980): BW agents only or the whole field?
  - Today: *tendency to cover all*
    - Emerging and re-emerging diseases (international public health)
    - Different trends in biotechnology research and application
    - Research topics, their goals and methodologies (e.g., H5N1 modification)
  - Question: are these issues for a disarmament treaty or is it a matter of broader governance?

# Failure: Biosafety or Disarmament?

- **MX 2015: USA offers background information on inadvertent distribution of live anthrax spores to laboratories in USA and abroad**
  - Elaboration of measures taken
    - To establish where failures in procedures and oversight occurred
    - To establish responsibilities of individuals and agencies, if possible
    - To prevent recurrence of events
  - Wish to be transparent to international community in order to demonstrate that
    - Events were an accidental confluence of several factors
    - National authorities were taking all necessary steps to rectify the situation
  - Essentially demonstration of compliance with **BTWC Article IV**
- **However,**
  - Russia asked questions:
    - Why live anthrax bacteria production?
    - How much anthrax is being produced?
    - How many facilities where such production activities take place?
    - Why was agent shipped overseas as part of military exercises?
    - Etc.
  - Essentially interrogation of compliance with **BTWC Article I (and III)**
- **Just one illustration of how the same issue can be viewed differently**

# Where is the main future threat?

- **With terrorist & criminal entities?**
- **With loners?**
- **With state-run programmes**
  - `Pure' offensive programmes?
  - Hidden in biodefence programmes?
  - Independent programmes without overall central oversight?
- **What may trigger a 'rebirth' of offensive BW programmes?**
  - S&T base in place
  - Production capacity available
  - New confluence of trends in science & technology is already underway
    - Enabling platforms → difficult to foresee what may be available in, say, 5 years
  - However, what about
    - Doctrinal development and assimilation of BW into doctrine?
    - Dissemination systems?
    - Training of troops (small and large formations)?
- **Can the current approach to disarmament / threat control meet these types of challenges?**

# Specific issues for consideration

- **Proliferation of high-containment laboratories since 2001**
  - Widening base of people with knowledge & skills
  - Certain pathogens are being artificially recreated (e.g., polio and H1N1 influenza (1918) viruses); others are being modified (so-called gain-of-function research, e.g., H5N1)
  - Accidents (infections, releases) do happen
  - Terrorism concerns: decreasing transparency and public accountability; reduced peer review opportunities
- **Bio-defence: science-based analysis of the BW threat**
  - Genetic properties of pathogens are being altered to study infectivity, virulence, etc., thus creating modified life forms
  - Government-run programmes
    - Insights from bio-defence programmes are useful for offensive BW development
    - Limited transparency
    - Questions about adequacy of vetting procedures for researchers
    - Anthrax letters (2001) came from a government bio-defence laboratory
- **Limited knowledge among scientists about norms against BW**
  - Potential contribution to future BW development rejected out of hand
  - Development of enabling technologies: future tangibles or end products not yet known
  - Situation probably even worse among 'hobbyists'



# THE TRENCH

**Recalling** where science, industry and military art converged  
**Challenging** entrenched positions

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