

Nanotechnology and Biosecurity

Addition to ObservatoryNano annual report 3 on “Ethical and Societal Aspects of Nanotechnology Enabled ICT and Security Technologies”.

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From 5 until 22 December 2011, the 7th Review Conference on the Biological and Toxin Weapon Convention took place in Geneva. Developments in Science and Technology with implications for the convention featured high on the agenda. In addition to the negotiations between the States Parties to the convention, a number of side events was organised by several states and civil society organisations, and a poster session by the Implementation Support Unit ISU. The conference adopted the final document on 22 December. In this document, nanotechnology is not explicitly mentioned, but in article I -2 “The Conference reaffirms that Article I applies to all scientific and technological developments in the life sciences and in other fields of science relevant to the Convention and notes that the Conference has decided to include in the 2012-2015 intersessional programme a standing agenda item on review of developments in the field of science and technology related to the Convention.” These developments include both developments that are prohibited by the convention and developments that contribute to its implementation. Convergence of biology and chemistry is mentioned as a concern and the need for awareness raising of the prohibitions of the BTWC among scientists is also stressed.

Highlights of discussions in side events

In the report of a conference organised by the Inter Academies Panel in November 2010, trends including scientific and technological convergence and the emergence of new scientific communities outside traditional academic and industrial research in industrialised countries were highlighted as having potential implications for the BTWC. These trends include nanobiotechnology, e.g. lipids and polymers, functionalised and liposomal nanomaterials, brain research, drug delivery and nanopores for DNA research.

The BioWeapons Prevention Project BWPP reported on 12 online discussions among experts in preparation for the Review Conference. Concerns were expressed that hostile use of life sciences is possible without high tech equipment. Biosecurity was deemed to have some potential role in prevention of bioweapons development, but since it is ill defined, scientists don't see the need to protect biosecurity. They also presented their BioWeapons Monitor 2011, including country reports on Germany, India, Japan, Kenya, South Africa, Switzerland, UK and USA.

SIPRI had also reviewed trends in S&T with potential impact on the BTWC. This research was done as part of a new international non-proliferation consortium www.nonproliferation.eu. Relevant trends include synthetic biology, synthetic genomics, systems biology and bioinformatics, brain research, targeted drug delivery, and bioforensics. The latter could contribute to verification of suspicious disease outbreaks. For this, much better coordination of actors involved is needed, as well as development of screening instruments for field work and reference standards that can stand up in court. This requires interdisciplinary cooperation and increased capacity. Methodologies to investigate trends in S&T include investigations of trends in non-traditional life sciences, better understanding of defence acquisition pathways and addressing the role of private contractors. Economic

cooperation and development (OECD), patent guidelines and practices, assessment of scientific training and research and cross cutting case studies. There are four overarching questions: what are activities of concern? What is an appropriate policy response? Even though prediction may not be possible, it is possible to identify main drivers and trends. S&T should be incorporated in future activities by the States Parties in the BTWC including enabling S&T and annual reviews of S&T. An operating space should be created to discuss trends in S&T.

References:

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