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Item 6 of the provisional agenda

**Consideration of oversight, education,
awareness raising, and adoption and/or
development of codes of conduct with the
aim of preventing misuse in the context
of advances in bio-science and bio-technology
research with the potential of use for
purposes prohibited by the Convention**

DEVELOPMENT OF A CODE OF CONDUCT ON BIOSECURITY

Submitted by the Netherlands

"There is no technical solution to the problem of biological weapons. It needs an ethical, human and moral solution if it's going to happen at all".

-- Joshua Lederberg (1925 – 2008, Nobel Prize for Medicine 1958)

Development of a national Code of Conduct on Biosecurity

1. In this paper the government of the Netherlands presents background information on the development of a national Code of Conduct for Biosecurity, directed at universities and research institutes. This code was published in 2007 by the Royal Netherlands Academy of Arts and Sciences (KNAW, hereafter: the Academy) at the request of the Ministry for Education, Culture and Science. This request followed on the publication of a Statement on Biosecurity by the Inter Academy Panel (IAP), a global network of the world's science academies. The IAP statement focuses on the potential impact of biosciences research on our global society and, particularly, on the risks associated with the misuse of such research. This statement was published in 2005 and has now been endorsed by 68 Academies from all over the world. The statement itself is not a code of conduct, but it formulates five principles that should be taken into account when drafting a Code of Conduct. These principles are: awareness, safety and security, education and information, accountability and oversight (See Annex I).

Why a code of conduct?

2. A code is a set of principles and instructions that are binding on members of a particular group in a profession or industry. Codes should not be confused with guidelines (which are less binding) and contracts or treaties (which are more binding). Moreover, codes can be classified into different types. Brian Rappert developed this typology¹:

Type	Name	Main Aims
<i>Aspirational codes</i>	Code of Ethics	Alert; set realistic or idealistic standards
<i>Educational/Advisory codes</i>	Code of Conduct	Provide guidelines, raise awareness & debate; foster moral agents
<i>Enforceable codes</i>	Code of Practice	Prescribe or proscribe certain acts

3. The main aim of the Dutch Code of Conduct on Biosecurity is to be seen as a contribution to awareness raising. The Academy saw it as its first task to make an inventory of existing codes of conduct in other countries and of existing Dutch and European laws and rules related to issues of Biosecurity. Questions were asked such as: What is its added value alongside existing codes and existing legislation at different levels? And will a code of conduct provide this added value or would new or amended legislation be more appropriate?

4. Answering these questions led to the opinion that a code of conduct is a useful – though not the only - instrument in a process of making more people aware of the risk of the dual use of research results in the life sciences. It is an illusion to think that a code of conduct can in all circumstances prevent abuse of science. As was said at an international workshop organized by the National Scientific Advisory Board on Biosecurity (NSABB), "a code of conduct can make good people better, but probably has negligible impact on intentionally malicious behavior".² Because of that, it is evident that the government is developing other measures in parallel to prevent the misuse of biological science and to, ultimately, prevent an attack with biological weapons. These measures vary from physical measures, screening, control of import and export of dual use agents to new legislation. The Netherlands National Coordinator for Counter Terrorism has set up task forces to strengthen the security measures of all relevant research institutes in The Netherlands.

Involvement of stakeholders

5. If a code of conduct is to have its intended effect, the content has to link up with relevant scientific, social and political developments and – last but not least – with the daily practice of scientists and their organizations. For that reason relevant actors from science, industry and government have been involved in the development of the code from the beginning. It was decided to establish a focus group whose members would make comments and suggestions based

¹ Brian Rappert, **Towards a life sciences code: countering the threats from biological weapons. Strengthening the Biological Weapons Convention**, Briefing paper 13, Second Series. Department of Peace Studies, University of Bradford. Available online: www.brad.ac.uk/acad/sbtwc/BP_13_2ndseries.pdf.

² International Roundtable NSABB (25-27 February 2007, Bethesda, MI).

on their practical experience as researchers and policymakers. Their participation made the code practice oriented. Moreover it was the first step in a process of raising awareness. For most members of the focus group – although familiar with questions of biosafety - the issue of intentional misuse of life sciences was new. It can be shown that the debates that have led to the code of conduct had their own impact on a growing awareness, be it still in a rather small circle of scientists involved. With the help of insights that were developed by the stakeholders suggestions and ideas were identified and then translated into issues for the code of conduct.

The content of the Code of Conduct

6. Many people expect the breakthroughs that have been achieved in recent years to make a major contribution to solving health, food and environmental problems. And progress is being made all the time. Research in the fields of genomics and proteomics is still in its infancy. Synthetic biology is one of the issues of debate recently. Synthetic biology can be defined as the design and replication of biological components, devices and systems and the redesign of existing, natural biological systems (for example a virus or bacterium) for specific purposes, such as the development of medicines. But - as said before - often people, including scientists and experts in life sciences, are not aware of the other side of the coin: the possible dual use of (the results of) scientific research in life sciences. This is one of the main principles underlying the Code of Conduct: to raise awareness about possible dual use of life sciences research.

7. In line with the aims of a code of conduct it was decided that it should be a concise document, which should concentrate on the main issues that are related to this dual use. This was formulated as follows: "The aim of this Code of Conduct is to prevent life sciences research or its application from directly or indirectly contributing to the development, production or stockpiling of biological weapons, as described in the Biological and Toxin Weapons Convention (BTWC), or to any other misuse of biological agents and toxins".

8. The Code of Conduct offers rules for responsibilities and gives suggestions for regulation and sanctions on the following issues: raising awareness, research and publication policy, accountability and oversight, internal and external communication, accessibility, shipment and transport. (For the full text of the Code of Conduct see Annex II).

Dissemination process

9. In October 2007 the national Code of Conduct on Biosecurity was presented to the Ministry of Education, Culture and Science. The Minister – after passing on the Code of Conduct to Parliament – asked the Academy to start a process of dissemination of the Code.

10. The Code of Conduct has been published in Dutch and in English. Hard copies will be available during the Meeting of Experts in Geneva, from 18-22 August. Both language versions have also been placed on the website of the Academy and can be downloaded at www.knaw.nl. These downloadable versions have been copied to websites of various scientific institutions.

11. Another way of disseminating the Code of Conduct is by organizing debates and conferences. The Academy has – together with other parties – organized debates with representatives of industry and with representatives of research funding organizations. More debates have been scheduled. Moreover presentations have been and will be given as well as

articles published in journals of e.g. scientific unions and professional organizations. There is a plan to develop awareness raising audiovisual materials for students being the researchers and scientists of the future.

International aspects

12. The Dutch Code of Conduct on Biosecurity has been brought to the notice of foreign academies of science and other organizations through the channels of IAP and in scientific conferences. The Ministry of Education, Culture and Science has spread the Code to other governments via bilateral contacts. According to a survey of the academies of science that endorsed the IAP statement, until now only a few states have started drafting a national code of conduct on biosecurity. For this reason, the Dutch Code of Conduct could be an interesting example for other countries to decide if and how they can develop their own code of conduct.

Annex I

Statement on Biosecurity of the Inter Academy Panel

- 1. Awareness.** Scientists have the obligation to do no harm. They should always take into consideration the reasonably foreseeable consequences of their own activities. They should therefore:

 - (i) always bear in mind the potential consequences – possibly harmful – of their research and recognize that individual good conscience does not justify ignoring the possible misuse of their scientific endeavour;
 - (ii) refuse to undertake research that has only harmful consequences for humankind.
- 2. Safety and Security.** Scientists working with agents such as pathogenic organisms or dangerous toxins have a responsibility to use good, safe and secure laboratory procedures, whether codified by law or by common practice.
- 3. Education and Information.** Scientists should be aware of, disseminate and teach the national and international law and regulations, as well as policies and principles aimed at preventing the misuse of biological research.
- 4. Accountability.** Scientists who become aware of activities that violate the Biological and Toxin Weapons Convention or international customary law should raise their concerns with appropriate people, authorities and agencies.
- 5. Oversight.** Scientists with responsibility for oversight of research or for evaluation of projects or publications should promote adherence to these principles by those under their control, supervision or evaluation.

Annex II

Content of Code of Conduct on Biosecurity

Basic Principles

1. The aim of this Code of Conduct is to prevent life sciences research or its application from directly or indirectly contributing to the development, production or stockpiling of biological weapons, as described in the Biological and Toxin Weapons Convention (btwc), or to any other misuse of biological agents and toxins.

Target Group

2. The Biosecurity Code of Conduct is intended for:
- (i) professionals engaged in the performance of biological, biomedical, biotechnological and other life sciences research;
 - (ii) organisations, institutions and companies that conduct life sciences research;
 - (iii) organisations, institutions and companies that provide education and training in life sciences;
 - (iv) organisations and institutions that issue permits for life sciences research or which subsidise, facilitate and monitor or evaluate that research;
 - (v) scientific organisations, professional associations and organisations of employers and employees in the field of life sciences;
 - (vi) organisations, institutions and companies where relevant biological materials or toxins are managed, stored, stockpiled or shipped;
 - (vii) authors, editors and publishers of life sciences publications and administrators of websites dedicated to life sciences.

Rules of conduct

Raising awareness

3. Devote specific attention in the education and further training of professionals in the life sciences to the risks of misuse of biological, biomedical, biotechnological and other life sciences research and the constraints imposed by the btwc and other regulations in that context.
4. Devote regular attention to the theme of biosecurity in professional journals and on websites.

Research and publication policy

5. Screen for possible dual-use aspects during the application and assessment procedure and during the execution of research projects.
6. Weigh the anticipated results against the risks of the research if possible dual use aspects are identified.
7. Reduce the risk that the publication of the results of potential dual-use life sciences research in scientific publications will unintentionally contribute to misuse of that knowledge.

Accountability and oversight

8. Report any finding or suspicion of misuse of dual-use technology directly to the competent persons or commissions.
9. Take whistleblowers seriously and ensure that they do not suffer any adverse effects from their actions.

Internal and external communication

10. Provide (additional) security for internal and external e-mails, post, telephone calls and data storage concerning information about potential dual-use research or potential dual-use materials.

Accessibility

11. Carry out (additional) screening with attention to biosecurity aspects of staff and visitors to institutions and companies where potential dual-use life sciences research is performed or potential dual-use biological materials are stored.

Shipment and transport

12. Carry out (additional) screening with attention to biosecurity aspects of transporters and recipients of potential dual-use biological materials, in consultation with the competent authorities and other parties.
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