



**2019 Biological Weapons Convention Meeting of Experts  
Review of Developments in the field of science and technology  
related to the convention**

**Synthetic biology**

**2 August 2019**

Thank you, Mr Chairman.

I would like to briefly highlight the paper submitted by my delegation. This paper provides an overview of synthetic biology, an update on the capabilities and regulations associated with new technologies in Australia and the implications for Australia and the Indo-Pacific region. We also comment on the adoption of a voluntary code of conduct.

Newer technologies, including synthetic biology hold the promise of addressing ongoing issues of human health, food supply, and the production of biofuels, chemicals and enzymes. Despite their beneficial applications, concerns have been raised over the potential for dual use. Although microorganisms that are already considered harmful are generally considered the highest risk for weaponisation, innocuous microorganisms are not exempt from this risk and can also be modified to do harm.

In Australia, the Office of the Gene Technology Regulator within the Department of Health is responsible for overseeing all work involving genetically modified organisms. Recent advances in technology have led to some ambiguity as to the coverage of organisms created using some newer techniques and so the exclusions have recently been reviewed to improve clarity. Changes to the *Gene Technology Regulations* 2001, which will commence in October 2019 will deem organisms modified using transgenic approaches and synthetic biology as GMOs. Although oversight by

institutional committees of work with GMOs also plays an important role in ensuring the safe use of gene technologies, the emergence of the “DIY biology” community that fall outside such institutional oversight has raised some concern. To address this, the Gene Technology Regulator is actively engaged, providing advice and recommendations to ensure compliance among the Australian DIY biology community.

A strong theme that has emerged in previous BWC meetings and during the current meeting is the idea of a voluntary code of conduct. While different agencies within Australia will have different views on the adoption of a code of conduct, the Australian Animal Health Laboratory which has responsibility for maintaining and handling Security Sensitive biological agents and considerable expertise in gene technology, has a keen interest in implementing a self governed code of conduct.

In regard to synthetic biology, although the risk may remain small at this stage due to the technical expertise required, managing the risks, including oversight of the distribution of synthetic DNA and methods for generating novel organisms, will be assisted by international consideration and cooperation in the BWC framework.

Concerns over genome editing and synthetic biology will be mitigated by continued improvements in our capacity and capability to respond to threatening biological agents such as emerging infectious diseases. To this end, Australia has made important investments in our region that will improve our capacity to respond to both naturally occurring and deliberately released biological agents. Laboratory strengthening activities recently supported by the Indo-Pacific Centre for Health Security will assist in this regard and include twinning between the Australian Animal Health Laboratory and veterinary laboratories in Myanmar and Indonesia. Training of scientists and laboratory workers in biosafety, biosecurity and laboratory diagnostics will also be conducted. Such training could also include elements of any code of conduct agreed by BWC States Parties.

Thank you Mr Chairman.