Republic of the Philippines
Department of Environment and Natural Resources
BIODIVERSITY MANAGEMENT BUREAU
Quezon Avenue, Diliman, Quezon City
Tel. Nos.: (632) 924-6031 to 35 Fax: (632) 924-0109, (632) 920-4486
Website: http://www.bmb.gov.ph E-mail: bmb@bmb.gov.ph

MAY 20 2015

HON. BRAULIO FERREIRA DE SOUZA DIAS
Executive Secretary
Secretariat of the Convention on Biological Diversity
United Nations Environment Programme
413 Saint-Jacques Street, Suite 800
Montreal, Quebec, Canada
E-mail: secretariat@cbd.int

Dear **Dr. de Souza Dias**,

In response to your Notification (Ref.: SCBD/BS/CG/MPM/DA/84279) dated 06 February 2015, we are submitting the attached information on synthetic biology that is relevant to the work of the Ad Hoc Technical Expert Group (AHTEG) on Synthetic Biology.

Thank you.

Very truly yours,

THERESA MUNDITA S. LIM
Director

cc: **The Assistant Secretary**
UNIO-DFA

United Nations Decade on Biodiversity

ONLINE DISCUSSION ON SYNTHETIC BIOLOGY

(i) How to address the relationship between synthetic biology and biological diversity

The relationship between synthetic biology and biological diversity should look not only at the direct impacts of synthetic biology on the various components of biological diversity at the genetic, species and ecosystem levels, but also on whether the application of synthetic biology will affect a country's implementation of the CBD's 3 objectives.

The specific applications of synthetic biology in specific areas of industry and agricultural practices especially with regard to its socio-economic and cultural implications and the over-all attainment of sustainable development should be examined as well. For example, in the case of the Philippines, synthetic biology applications will negatively impact its coconut and carageenan industry, thus, the implications of these impacts particularly in terms of loss of livelihoods for farmers and export earnings for the country should be considered.

Finally, given that the technology is rapidly evolving, this examination of the relationship of synthetic biology and biological diversity should be constantly under review, including those socio-economic and cultural impacts cited.

(ii) The similarities and differences between living modified organisms (as defined in the Cartagena Protocol) and organisms, components and products of synthetic biology techniques;

Similarities

LMOs as defined in the Cartagena Protocol, which is very broad, may very well accommodate organisms, components and products of synthetic biology techniques in the sense that these techniques involve a novel combination of genetic material and have been produced by the techniques of modern biotechnology

Differences

Considering that organisms, components and products of synthetic biology sometimes do not result in novel combinations of genetic material, as in fact most of them, especially those that are replacements of rare biochemical compounds found in nature such as vanillin, etc. and that the techniques of modern biotechnology are oftentimes not the same as the techniques of synthetic biology, especially gene editing techniques such as CRISPR, ZFN, etc., then in that sense, the rules of the Cartagena Protocol do not apply to organisms, components and products of synthetic biology.

(iii) Adequacy of existing national, regional and/or international instruments to regulate the organisms, components or products derived from synthetic biology techniques;

At the national level, there is no adequate legal or policy framework to deal with organisms, components or products derived from synthetic biology techniques, as Executive Order 514 and its attached National Biosafety Framework limits itself to the Cartagena Protocol definition of what is now referred to in the NBF as a "genetically modified organism" or also referred to as a "regulated article" in Sec. 3.3.12 in the NBF.

The differences between LMO and the organisms, components or products derived from synthetic biology techniques make imperative a different regulatory framework, taking lessons on how the NBF is implemented.