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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

International Workshop on Access and Benefit-Sharing for Genetic Resources for Food and Agriculture

Rome, 10–12 January 2018

ADDITIONAL SUBMISSION BY CANADA

Input on distinctive features of micro-organisms and invertebrate genetic resources

In the report of its 16th Regular Session, the Commission on Genetic Resources, in paragraph 25(iv), "invited Members, observers and other stakeholders to provide relevant inputs for such explanatory notes by electronic means, including on … the distinctive features and the specific practices of different subsectors of GRFA." This note is to respond in part to that invitation with regards to Micro-organisms and Invertebrate Genetic Resources (MIGR).

In 2012, the Report of the First Session of the "Ad Hoc Technical Working Group on Access and Benefit-Sharing for Genetic Resources for Food and Agriculture" (document CGRFA-WG-ABS-1/12/Report, Appendix B) described distinctive features of genetic resources for food and agriculture in seven clusters.

Canada considers that the Commission, its Team of Technical and Legal Experts (TTLE), and the International ABS Workshop, should recognize the distinctive features of MIGR related to ABS. Some of these were already described in document CGRFA-14/13/7 and document CGRFA-15/15/Report, in particular, Appendix B Annex, the Elements to Facilitate Domestic Implementation of Access and Benefit-Sharing for Different Subsectors of Genetic Resources for Food and Agriculture. We emphasize that:

- MIGR (except honey bees) are undomesticated species and populations;
- MIGR migrate on their own (albeit slowly) and do not recognize political borders;
- there is a long history of humans moving MIGR species around the world;
- plant, animal, invertebrate and micro-organism GRFA form an interdependent network of genetic diversity in agricultural ecosystems.

Distinctive Features of Genetic Resources of Micro-organisms

- micro-organisms are essential to: the improvement of food and agricultural production systems and contribute to energy production and waste management (FAO Background Study Paper No. 46); identification and quantification of the microbiota in the rumen (FAO Background Study Paper No. 61); use by agro-industry such as for bio-fertilizers and bio-inoculants: Effective Micro-organisms (EM) technology, bio-pesticides and bio-remediation indicators (FAO Background Study Paper No. 64); and food biotechnology, particularly through basic understanding of mechanisms by which fermentation improves food safety and stability, which has contributed to the use of live microbial strains for bio-preservation (FAO Background Study Paper No. 65);
- soil micro-organisms contribute to the delivery of ecosystem services that are essential for human society, such as: transport, storage and provision of clean groundwater; storage of carbon and trace gas emissions critical to climate control; provision of nutrients; pest and pathogen regulation; and supporting plant growth and above-ground biodiversity (FAO Background Study Paper No. 63);
- micro-organisms are important genetic resources used as agents for biological control (BC) of pests to ensure global sustainability of food and agriculture;
- micro-organisms (e.g. mushrooms, truffles, reishi) may be cultivated or harvested from the environment as foods or nutraceuticals and in either case may require symbiosis with plants involving intensive cultivation; or arise spontaneously in the wild; or may be saprotrophic and sometimes can be used to convert waste products to food;
- when a scientific paper is published, many journals require that the author(s) must make the micro-organism available to other research institutes for legitimate research purposes;
- international guidelines have been developed by the World Federation for Culture Collections of the International Union of Microbiological Societies (IUMS) and the International Union of Biological Sciences to promote and develop collections of cultures of microorganisms and cultured cells (WFCC 2010) and for their responsible use (OECD 2007);

- professional societies (e.g. American Society for Microbiology) have established best practices to ensure "microbiologists will work for the proper and beneficent application of science and will call to the attention of the public or the appropriate authorities misuses of microbiology or of information derived from microbiology… to discourage any use of microbiology contrary to the welfare of humankind, including the use of microbes as biological weapons." (http://jvi.asm.org/site/misc/journal-ita_edi.xhtml#01);

Distinctive Features of Genetic Resources of Invertebrates
Pollinators

- wild and domestic (honey bees) pollinators are critical to global agriculture and their services has been estimated at US$235-577 billion, representing 5-8% of the current global crop production in 2015 (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) 2017);
- the vast majority of pollinator species are wild, including more than 20,000 species of bees, some species of flies, butterflies, moths, wasps, beetles, thrips, birds, bats and other vertebrates (IPBES 2017);
- a few species of bees are widely managed, including the western honey bee (Apis mellifera), the eastern honey bee (Apis cerana), some bumble bees, some stingless bees and a few solitary bees (IPBES 2017);
- wild, native bees also provide the majority of pollination that helps maintain natural plant communities which contribute to a variety of valuable ecosystem services, including carbon sequestration, water filtration, and erosion control (Pollinator Health Task Force 2015).

Biological control agents

- invertebrates are important genetic resources used as agents for biological control (BC) of pests to ensure global sustainability of food and agriculture;
- there is a long history, including in Canada, of unrestricted use and exchange of invertebrates for classical biological control of invasive alien species affecting agricultural crops (FAO Background Study Paper No. 47);
- professional societies (e.g. International Organization for Biological Control) have proposed best practices, implemented in Canada, "to demonstrate due diligence in responding to access and benefit sharing requirements, and to reassure the international community that biological control is a very successful and environmentally safe pest management method based on the use of biological diversity."

At present, there is no internationally legally-binding agreement specifically for ABS of MIGR – exchanges are almost always contractual between a willing provider and a willing recipient who establish mutually agreed terms. Therefore, Canada encourages the Commission to put greater emphasis and priority for work on ABS of MIGR, taking into account their capacity for free movement in the environment, the ecosystem services provided, and the public good outcomes stemming from their use and exchange. Canada also encourages the Commission to build on international guidelines and best practices for use and exchange of MIGR.

Such an approach would also be consistent with the Nagoya Protocol. The Protocol obliges Contracting Parties to consider, in the development and implementation of their ABS legislation or regulatory requirements, "the importance of genetic resources for food and agriculture and their special role for food security." According to Article 4.3, Contracting Parties shall, in the implementation of the Protocol pay "due regard to useful and relevant on-going work or practices under such international instruments and relevant international organizations (our emphasis), provided they are supportive of and do not run counter to the objectives of the CBD and the Protocol." The Preamble of the Protocol provides some guidance about relevant international instruments and organizations or the kind of ongoing work or practices in this regard, as it refers to the fundamental role of the Commission.