Bioversity International

5 March 2018

Mrs Cristiana Pasca Palmer
Executive Secretary
Secretariat of the Convention on Biological Diversity
United Nations Environment Programme
413 Saint-Jacques Street, Suite 800
Montreal, Quebec, Canada
H2Y 1N9

Mainstreaming of biodiversity and other strategic actions to enhance implementation: request for submission of relevant information subject

Dear Mrs Pasca Palmer,

In reference to Notification 2018-019 on *Mainstreaming of biodiversity and other strategic actions to enhance implementation,* we are please to submit Bioversity International inputs into this process.

Bioversity's main inputs are related to mainstreaming biodiversity in the sector of health, with a project it has been coordinating since 2012, the Biodiversity for Food and Nutrition project (BFN) and implemented in partnership with Brazil, Kenya, Turkey and Sri Lanka. Bioversity has also recently started addressing some issues related with degraded lands in the mining sector and a case study is presented here on how forest-restoration projects using native species can be a model for rescuing mined lands and promoting biodiversity.

Thank you for your attention

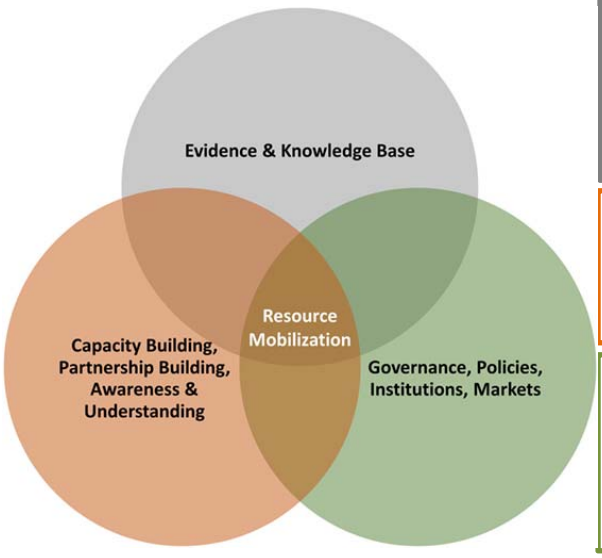
Yours sincerely,

Stephan Weise
Deputy Director General – Research
Bioversity International

1. Bioversity International mainstreaming work in the health sector: the Biodiversity for Food and Nutrition Project

Bioversity International is coordinating the Biodiversity for Food and Nutrition (BFN) project, which is funded by the Global Environment Facility (GEF), with implementation support by the UN Environment Programme (UNEP) and the Food and Agriculture Organization of the United Nations (FAO). Since 2012, the BFN project has been collecting and sharing knowledge of underutilized, nutrient-rich species with benefits to the environment, community livelihoods, health and nutrition. Partnerships in Brazil, Kenya, Turkey and Sri Lanka have led to on-the-ground projects as well as contributions to regional and global policy recommendations.

The project has 3 main areas of work with specific objectives, as outlined hereunder. Elements for mainstreaming are then presented for each area of work on a global level, followed by specific elements implemented in specific countries. Challenges encountered and recommendations to overcome difficulties are then presented for each area of work.



1. Providing Evidence:
+ Nutritional analysis for 195 underutilized, nutrient-rich species
+ Quantifying benefits and supporting integration of species into farms, schools, research, & policy

2. Building Capacity, Awareness, and Markets
+ Creating Partnerships & Market Opportunities
+ Sharing Publications & Online Resources
+ Increasing visibility with fairs, chefs, workshops

3. Influencing Policy
+ Identifying the role of *sociobiodiversity*[1] in nutrition security
+ Contributing to national health recommendations

1. Providing Evidence

- Making information available on underutilized nutrient-rich species on national databases: nutritional properties, cultivation practices, seasonality, traditional knowledge.
- Contribution to **FAO/INFOODS** Food Composition Database for Biodiversity (BioFoodComp4.0).
- ***Mainstreaming Biodiversity*** book publication (2017)

Brazil:
- **Plants for the Future Initiative**: identifying underutilized species for market development
- Publication of two books on regional foods and ethnobotanical information

[1] Sociobiodiversity: the interconnected ecological and cultural elements throughout the food production and consumption chain. For example, an indigenous locally adapted tuber can be cultivated to support the family farms where it is grown, promote traditional knowledge/culture, & simultaneously ensure a healthy ecosystem.

Kenya:
- Digitization & update of national food composition table
- Food composition analysis of local millets & groundnuts revealing higher nutrient values.

Turkey:
- Using 2334 questionnaires to survey knowledge of wild edible plants
- 2017 Nutrition and Health Survey developed by the Turkish Ministry of Health

Sri Lanka:
- BFN Website Portal: Sinhalese database of plants, spices, recipes

Challenges:
- Difficulty of obtaining comprehensive data on nutrition and intake.
- Hard to determine full potential of many beneficial substances, for example, scientists are just beginning to discover certain antioxidant properties & "synergistic" chemical interactions that only occur when specific foods are consumed together.

Recommendations:
- Acknowledge that varied methods and lack of replicable experimental design may create a "Knowledge-Evidence Gap". Be aware that many health benefits are just beginning to be explored by scientific methods, while they may be part of traditional knowledge and culture.
- Ensure databases and other content is readily accessible

2. Building Capacity, Awareness, and Markets

- Encouraging acceptance through increased promotion, publications, events

Brazil:
- **BFN online course:** Free learning module on mainstreaming biodiversity
- International Symposium on Biodiversity for Food and Nutrition (2017)
- Promotion by celebrity chefs, cooking workshops with indigenous ingredients
- "Educating through School Gardens and Gastronomy"
  - *Rio Food Vision*: healthy and sustainable food for 2016 Rio Olympic Games

Kenya:
- Traditional **Food Fairs**: showcasing local production in Busia County
- Work with the community-based organization **Sustainable Income and Generating Investment Group** to build the capacity of farmers to link to school markets, manage their agro-enterprise and sustainably grow underutilized, nutrient-rich species.

Turkey:
- **Alaçatı Herb Festival**: celebrating wild edibles with herb-collecting competitions, cooking workshops, nature walks, and nutrition seminars
- Preventing overexploitation of natural resources by creating guidelines for the sustainable collection of wild plants
- Working with the Agriculture sector to domesticate the most marketable crops for commercial production, such as Golden Thistle

Sri Lanka:

- Creation of government-subsidized food courts that sell healthy traditional foods (**Hela Bojun)** and empower women to make a living by selling food at competitive prices
- Links with the National Food Promotion Board to commercialize healthy products made with underutilized nutrient-rich foods
- **UN Environment - GEF Project on Healthy Landscapes** Website

Challenges:

- Difficulty of breaking into well-established markets, convincing other parties of species' benefits.
- Reconciling perceived benefits of modern over traditional methods and products.
- -Standards of hygiene, perishability, packaging, and other quality issues are difficult for some indigenous crops and their producers.

Recommendations:

- Foster communication & connections with disparate parties, such as the business sector.
- Guarantee access; continue engagement with women, youth, and vulnerable groups.
- Facilitate smallholder power through cooperatives or associations.

3. Influencing Policy

- Contributions: *Subsidiary Body on Scientific, Technical and Technological Advice* (**SBSTTA 18**)
- *Draft Report on Nutrition and Food Systems*, prepared by the High-Level Panel of Experts on Food Security and Nutrition (HLPE)
- UNEP/CBD/SBSTTA/19/INF/1, *Strategic Scientific and Technical Issues Related to the Implementation of the Strategic Plan for Biodiversity 2011-2020: Biodiversity, Food Systems and Agriculture*
- UNSCN Discussion Paper *Schools as a System to Improve Nutrition* (2017); and *First State of the World Report on Biodiversity for Food and Agriculture*, of the Commission on Genetic Resources on Food and Agriculture (2018).

Brazil:

- **Ordinance N. 163**: Lists 64 prioritized species, officially links sociobiodiversity with food & nutrition security.
- Contributions to Brazil's 2014 **National Dietary Guidelines**
- Revision of the National Biodiversity Strategy and Action Plan (NBSAP): 20 National Biodiversity targets, linked to the Aichi Targets
- Partnering with procurement organizations such as the **National School Feeding Program (PNAE)** to provide nutritious local food (**juçara** fruit) to schoolchildren

Kenya:

- *Scaling Up Nutrition* to connect nutrition and agriculture
- **Busia Policy**: enhancing smallholder farm capacity to produce and market biodiverse species
- As a member of the Nutrition Interagency Coordinating Committee (NICC) chaired by the Director of Nutrition at the Ministry of Public Health & Sanitation, BFN was able to contribute information on the nutritional advantages of traditional leafy greens and have them included in the National Guidelines for Healthy Diets and Physical Activity

Turkey:
- **Food-based Dietary Guidelines** (Ministry of Health) incorporates biodiversity
- Safeguarding agrobiodiversity by demonstrating healthy use in schools (Healthy Diet and Active Life Program, Nutrition Friendly Schools Initiative)

Sri Lanka:
- **National Biodiversity Strategy and Action Plan (NBSAP):** includes the importance of biodiversity in food and nutrition (2016)

Challenges:
- Governing bodies must be receptive and in the position to implement effective policy.
- Mainstreaming transition can be lengthy, requires time and economic investment before positive results.
- Supply can outstrip demand; indigenous producers can lose access to exported crops.
- Biodiverse species remain only a small percentage of overall food expenditures.

Recommendations:
- Take measures that resources are not overexploited by intensified cultivation.
- Advocate for continued integration of biodiverse species, recognizing variability of environmental, social, and nutritional factors.

2. Bioversity International mainstreaming work in the mining sector: Case study on how forest-restoration projects using native species can be a model for rescuing mined lands and promoting biodiversity

Bioversity International has been working since many years on promoting the importance of the adequacy of tree seeds supply in terms of genetic diversity and quality in forest restoration. Poor availability of diverse quality seeds for forest regeneration will have negative consequences on the vigor, productivity and long-term persistence of restored tree populations. Recommendations have been provided to avoid large-scale failure in forest and land restoration (Jalonen et al. 2017). Recently, Bioversity has started to work more specifically with Forestpa, a key partner in Colombia, on degraded lands that have been left unproductive after mining. Forestpa developed a technique to restore these lands and Bioversity brings in the knowledge to choose sufficient and appropriate seed sources. This work is described in a *Nature*'s 'Correspondence' section, by Evert Thomas, Associate Scientist at Bioversity International:

> "Open-pit gold mining leaves millions of hectares of wasteland, particularly in the tropics. A series of affordable, socially inclusive and ecologically sound forest-restoration projects in Colombia could become a model for rescuing mined lands around the world. Reforestation began in 2002 across 1,290 hectares in Cácerces, one of Colombia's most conflict-ridden regions. Projects using similar techniques have since begun in other areas of the country. First the barren landscape is reshaped using a bulldozer, and the soil is enriched with composted sewage sludge, benign microorganisms and other nutrients. Next, *Acacia mangium* trees are planted (because of their hardiness, fast growth and ability to improve soil by fixing nitrogen and providing abundant leaf litter), along with 10–20 native tree species. After ten years, the *A. mangium* trees are logged and replaced with well-adapted native species to encourage diversity. The Cácerces site now contains more than 120 different native tree species and harbours an impressive

range of wildlife, including jaguars, sloths and several species of primate. Local people are involved in all steps of the restoration process, and they share in the social and economic benefits generated, such as increased employment and proceeds from timber sales and carbon credits. These will more than compensate for the initial investment of US$3,000 per hectare."

*(*Abstract taken verbatim from *Nature. Source: Gold rush: Forest devastated by mining is reborn*. Available from: https://www.nature.com/articles/511155d)