SIAP Training Program for Supporting the Monitoring of Sustainable Development Goals (SDGs) 2030 in the Asia Pacific Region

SDG Indicators under FAO Custodianship

Dorian Kalamvrezos Navarro
Programme Advisor, Office of the Chief Statistician

Food and Agriculture Organization of the United Nations | SUSTAINABLE DEVELOPMENT GOALS

GOAL 2. END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

- Indicator 2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium- or long-term conservation facilities (Tier I)
- Indicator 2.5.2 Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction (Tier I)
  - They provide complementary information on plant and animals, with animal genetic resources tracked both *in situ* and *ex situ*

SDG INDICATOR 2.5.1 NUMBER OF PLANT AND ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE SECURED IN EITHER MEDIUM- OR LONG-TERM CONSERVATION FACILITIES

IMPORTANCE OF GENETIC RESOURCES

- Building blocks of food security
- Plant and animal diversity provides adaptability and resilience in the face of: climate change, emerging diseases, pressures on feed and water supplies and shifting market demands;
- Between 2005 and 2016, livestock breeds classified as being at risk of extinction increased from 15 to 17%;
- 58 percent of breeds are classified as being of unknown risk status because no recent population data are available
- An estimated three-quarters of crop genetic diversity has been lost since the 1900s

SDG INDICATOR 2.5.1

NUMBER OF **PLANT** GENETIC RESOURCES FOR FOOD AND AGRICULTURE SECURED IN EITHER MEDIUM- OR LONG-TERM CONSERVATION FACILITIES

OVERVIEW OF THE INDICATOR

- A dynamic measure of the earth's plant and animal diversity which is conserved in gene banks across time
- Medium or long term conservation facilities (genebanks) to preserve and make accessible these resources and its associated information for breeding and research have been established at country, regional and global levels.
- Inventories of genebank holdings provide a dynamic measure of the existing plant and animal diversity and its level of preservation
- Two components of the indicator:
  - Plant component: number of plant genetic resources secured in conservation facilities
  - Animal component: number of animal genetic resources secured in conservation facilities
- The dashboard principle is chosen for the indicator: both components will be reported separately

THE PLANT COMPONENT: METHODOLOGY (1)

- The plant component of the indicator is calculated as the total number of unique accessions of plant genetic resources secured in medium to long term conservation facilities.
- **Plant genetic resources for food and agriculture (PGRFA)**: Any genetic material of plant origin of actual or potential value for food and agriculture.
- **Accession**: a sample of seeds, planting materials or plants representing either a wild population, a landrace, a breeding line or an improved cultivar, which is conserved in a gene bank. Each accession should be distinct and, in terms of genetic integrity, as close as possible to the sample provided originally.

THE PLANT COMPONENT: METHODOLOGY (2)

- **Base collection**: is defined as a set of unique accessions to be preserved for a medium to long-term period.
- **Active collection**: a set of distinct accessions that is used for regeneration, multiplication, distribution, characterization and evaluation. Active collections are maintained in short to medium-term storage and usually duplicated in a base collection.
- To avoid double counting at the national level, the count for the indicator 2.5.1 should include
  - ✓ All the accessions in **base collections**,
  - ✓ A unique accession in an active collection should be reported only exceptionally, only when either
    - in the absence of a base collection, it also serves the function of the base collection
    - It is considered to become part of the national base collections.

THE PLANT COMPONENT: METHODOLOGY (3)

- Medium or long term conservation facilities: Biological diversity is often conserved *ex situ*, outside its natural habitat, in facilities called gene banks.
- In the case of plant genetic resources, gene banks conserve base collections under medium or long term storage conditions, in the form of

✓ seeds in cold rooms,

✓ plants in the field

✓ tissues in vitro

✓ tissues cryopreserved.

THE PLANT COMPONENT: CALCULATION AND REPORTING

WIEWS - World Information and Early Warning System for plant genetic resources

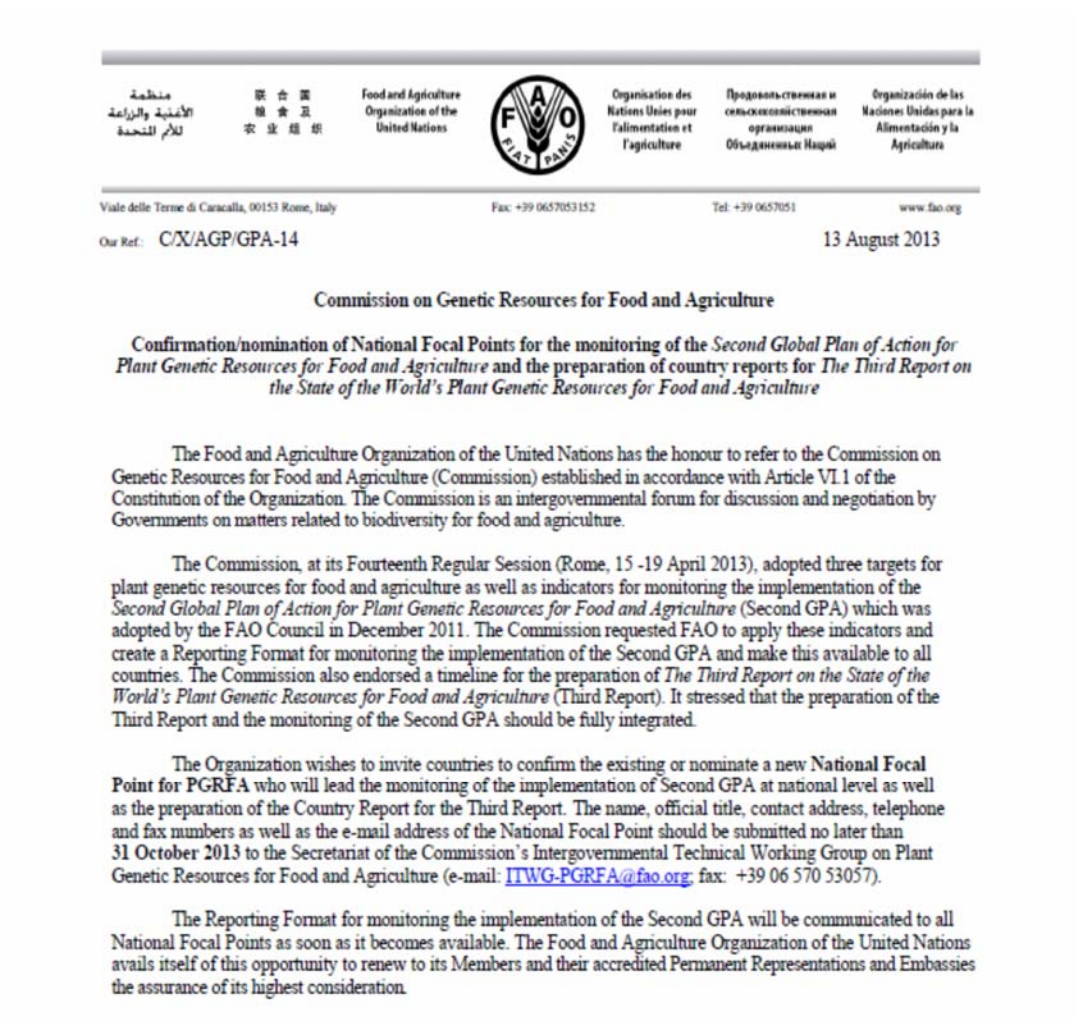
- FAO system for PGRFA since the late '80s
- Used by countries to report to FAO on the implementation of the **Second Global Plan of Action for PGRFA** and now on SDG target 2.5
- Key information source for national, regional and international assessments, including SDGs
- Contains 4.7 million accessions held in over 600 gene banks
- The monitoring framework is endorsed by **FAO Commission on Genetic Resources of Food and Agriculture (CGRFA)**

THE PLANT COMPONENT: CALCULATION AND REPORTING

- WIEWS – Who enters the data?
- Data reported to WIEWS by countries and international centers are official
- Access to the WIEWS Reporting System is restricted to the Officially appointed **National Focal Points** for plant genetic resources
- National Focal Points can enable other users with similar or lower data editing/writing privileges
- SDG country data if already published in publicly accessible systems can be retrieved by FAO upon NFP's request
- WIEWS calculates the final value of the indicator, providing graphics which can be exported

Country	National Focal Point: SDG 2.5.1 Plant Component
Afghanistan	Mr Qudratullah Soofizada; Ministry of Agriculture, Irrigation and Livestock
Bhutan	Ms. Asta Tamang; National Biodiversity Center
India	Mr. Shri R. K. Singh; Ministry of Agriculture, Department of Agriculture & Cooperation
Iran	Dr. Behzad Sorkhi; Seed and Plant Improvement Institute (SPII)
Japan	Dr. Tomotaro Nishikawa, Ministry of Agriculture, Forestry and Fisheries (MAFF); Dr. Hiroshi Nemoto, National Agriculture and Food Research Organization
Lao PDR	
Malaysia	
Maldives	

Country	National Focal Point: SDG 2.5.1 Plant Component
Mongolia	Dr. Bayarusukh Noov; Plant Science and Agriculture Research Institute
Pakistan	Dr. Sadar Uddin Siddiqui; National Agricultural Research Centre
Papua New Guinea	
Republic of Korea	
Samoa	
Thailand	Ms. Chutima Ratanasatien, Department of Agriculture
Turkmenistan	
Uzbekistan	



منظمة الأغذية والزراعة للأمم المتحدة | 联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura

Viale delle Terme di Caracalla, 00153 Rome, Italy | Fax: +39 0657053152 | Tel: +39 0657051 | www.fao.org

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Commission on Genetic Resources for Food and Agriculture

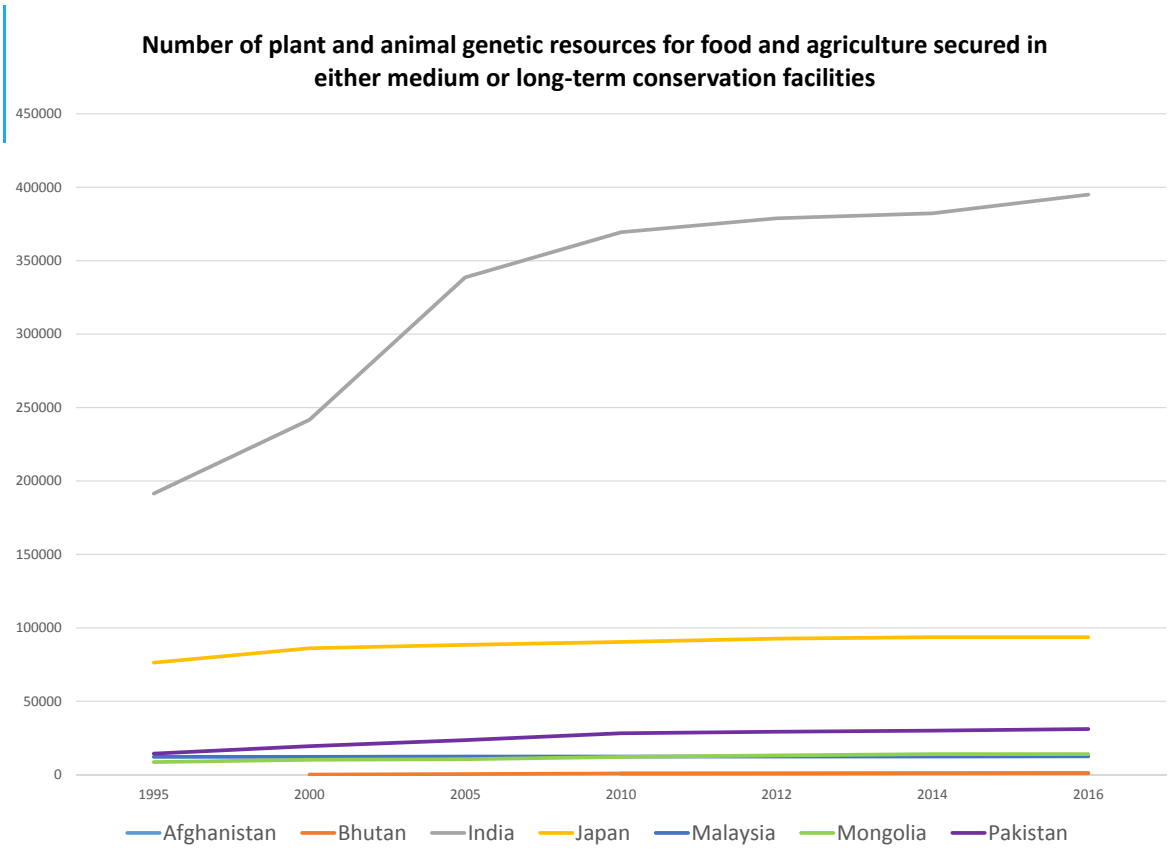
Confirmation/nomination of National Focal Points for the monitoring of the *Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture* and the preparation of country reports for *The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture*

The Food and Agriculture Organization of the United Nations has the honour to refer to the Commission on Genetic Resources for Food and Agriculture (Commission) established in accordance with Article VI.1 of the Constitution of the Organization. The Commission is an intergovernmental forum for discussion and negotiation by Governments on matters related to biodiversity for food and agriculture.

The Commission, at its Fourteenth Regular Session (Rome, 15 -19 April 2013), adopted three targets for plant genetic resources for food and agriculture as well as indicators for monitoring the implementation of the *Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture* (Second GPA) which was adopted by the FAO Council in December 2011. The Commission requested FAO to apply these indicators and create a Reporting Format for monitoring the implementation of the Second GPA and make this available to all countries. The Commission also endorsed a timeline for the preparation of *The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (Third Report). It stressed that the preparation of the Third Report and the monitoring of the Second GPA should be fully integrated.

The Organization wishes to invite countries to confirm the existing or nominate a new **National Focal Point for PGRFA** who will lead the monitoring of the implementation of Second GPA at national level as well as the preparation of the Country Report for the Third Report. The name, official title, contact address, telephone and fax numbers as well as the e-mail address of the National Focal Point should be submitted no later than **31 October 2013** to the Secretariat of the Commission's Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (e-mail: ITWG-PGRFA@fao.org; fax: +39 06 570 53057).

The Reporting Format for monitoring the implementation of the Second GPA will be communicated to all National Focal Points as soon as it becomes available. The Food and Agriculture Organization of the United Nations avails itself of this opportunity to renew to its Members and their accredited Permanent Representations and Embassies the assurance of its highest consideration.



THE PLANT COMPONENT: DATA SITUATION IN ASIA PACIFIC COUNTRIES

- 8 out of 16 Asia Pacific countries present here have officially nominated National Focal Points for Plant Genetic Resources, responsible for reporting on SDG indicator 2.5.1
- However, FAO has received data from only 7 countries.
- FAO needs to receive data from all countries that have a National Focal Point, and nominations of National Focal Points for the rest of the countries

THE PLANT COMPONENT: GLOBAL REPORT

- At the end of 2017, global holdings of seed and other plant genetic materials conserved in 90 countries and 16 regional and international centres totalled **4.89 million samples,** representing a 1% percent increase over the previous year.
- An increase in the germplasm conserved under medium- or long-term conditions has been observed in 31 countries
- The number of reporting countries increased by **9.7 percent,** which reflects a better awareness of the importance of conserving and monitoring ex situ holdings.

THE PLANT COMPONENT: GLOBAL REPORT

- Over the past 11 years, the rate of increase of ex situ holdings has slowed down. This may indicate that the coverage of the diversity of major crops in genebanks is nearing completion. However, significant scope for safeguarding CWR and enhancing the required national capacities still remains especially as natural habitats of CWR are increasingly under threat.
- Increases also occurred in the collections of one of four regional centres.
- About 22.0 percent of the 2017 newly added samples were sourced from the wild; 17.5 percent were traditional varieties; 12.7 percent resulted from breeding activities; and 9.0 percent were improved varieties.
- Overall modest progress has been made in securing crop diversity. Significant scope for safeguarding PGRFA and enhancing the required national capacities still remains, especially as natural habitats of crop wild relatives (CWR) are increasingly under threat.

CAPACITY DEVELOPMENT

- A global training workshop took place in Rome/FAO HQ in 29th November-1st December 2017.
- One Asia Pacific country was present:
  - **Bhutan**: Ms Asta TAMANG, Principal Biodiversity Officer, Ministry of Agriculture and Forests
  - **India**: Ms Pratibha BRAHMI, Principal Scientist and O-i-C, ICAR - National Bureau of Plant Genetic Resources.
  - **Malaysia**: Ms Rosliza JAJULI, Deputy Director, Malaysia Agriculture Research and Development Institute (MARDI).
  - **Thailand**: Ms Chutima RATANASATIEN, Advisor, Ministry of Agriculture;

    Ms Sumalee TONGDONAE, Agricultural Scientist, Department of Agriculture.
- E-learning course available: http://www.fao.org/elearning/#/elc/en/course/SDG251-252
- Direct technical assistance can also be provided upon request

THANK YOU

DorianKalamvrezos.Navarro@fao.org

For more detailed information please see:

- http://www.fao.org/sustainable-development-goals/indicators/251/en/