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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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PREPARATION OF COUNTRY REPORTS FOR THE THIRD REPORT **ON THE STATE OF THE WORLD'S PLANT GENETIC RESOURCES** FOR FOOD AND AGRICULTURE



Food and Agriculture Organization of the United Nations

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE



PREPARATION OF COUNTRY REPORTS FOR THE THIRD REPORT ON THE STATE OF THE WORLD'S PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE



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I. INTRODUCTION

1. FAO launched the first report on *The State of the World's Plant Genetic Resources for Food and Agriculture* (First Report) in 1996 during the Fourth International Technical Conference on Plant Genetic Resources.¹ The *Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (Second Report) was endorsed by the Commission on Genetic Resources for Food and Agriculture (Commission) at its Twelfth Regular Session in 2009. The Second Report highlighted the changes and developments that had occurred in the field of plant genetic resources for food and agriculture (PGRFA) since 1996. It provided an assessment of the status and trends of PGRFA and identified the most significant gaps and needs.²

2. The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture (Third Report) is scheduled for 2023 under the Multi-Year Programme of Work of the Commission. A draft of the Third Report will be presented for review to the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group) at its Eleventh Session in 2022, and the Commission at its Nineteenth Session in 2023. The structure of the Third Report will follow that of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA).³

II. PURPOSE AND STRUCTURE OF THESE GUIDELINES

3. This document aims to guide National Focal Points (NFPs) in reporting relevant data and information for the preparation of the Third Report.

4. As per the previous two assessments, the Third Report will be based on information provided by countries, complemented by thematic studies as well as reports from relevant international and regional centres.

5. The Third Report will, thus, be based on:

- (i) data provided by countries on the implementation of the Second GPA for the period January 2012 to June 2014 (reporting undertaken in 2015);
- (ii) data to be provided by countries before the end of 2020 on the implementation of the Second GPA for the period July 2014 to December 2019;
- (iii) a summative narrative of the progress made in the implementation of the Second GPA between January 2012 and December 2019 and the remaining gaps and constraints (reporting due in 2020); and
- (iv) thematic background studies and other relevant information.

6. The *Reporting Format for Monitoring the Implementation of the Second GPA* (Reporting Format), as given in Annex I of this document, lists the indicators and questions the countries are requested to answer to provide data on 5 (ii) above.

7. Data reported through the Reporting Format should be complemented by a summative narrative reviewing the progress made during the full reporting period (2012 to 2019) for each of the 18 Priority Activities of the Second GPA. Annex II of this document provides guidance on compiling the summative narrative referred to in 5 (iii) above.

8. It is recommended that NFPs, prior to completing the Reporting Format and the complementary summative narrative, consult relevant national experts and institutions in their country.

III. SUBMISSION OF THE COUNTRY REPORT

9. For the submission of the completed *Reporting Format* and the *Summative Narrative* by NFPs, FAO has made available the online Reporting Tool of the World Information and Early Warning System

¹ ITCPGR/96/REP, paragraphs 13–14.

² http://www.fao.org/docrep/013/i1500e/i1500e00.htm

³ CGRFA-15/15/16, Appendix III, http://www.fao.org/3/a-mm181e.pdf.

on Plant Genetic Resources for Food and Agriculture (WIEWS). The Reporting Tool can be accessed directly at <u>http://www.fao.org/pgrfa/</u> or through the WIEWS home page (<u>http://www.fao.org/wiews/en/</u>). Country submissions should be either in English, French or Spanish.

10. NFPs will be provided with credentials (username and password) for accessing the Reporting Tool. They may contact the Secretariat of the Working Group if they experience any problem in answering the online questionnaire. NFPs may also provide the summative narrative as a Word document, which is available on the WIEWS portal. The online Reporting Tool provides detailed explanations, including a comprehensive list of frequently asked questions (FAQs).

11. The Reporting Format given in Annex I of this document is a simplified version of the format used by countries in 2015 to report on the implementation of the Second GPA for the period January 2012 to June 2014.⁴ Data previously submitted can be found and retrieved through the WIEWS Reporting Tool.

12. NFPs who have not yet done so may also report or complete and, if necessary, revise their reports on the implementation of the Second GPA during the first implementation period (January 2012 to June 2014). In fact, NFPs are encouraged to do so.

13. As per the timeline agreed by the Commission, NFPs are invited to report by **31 December 2020.**

⁴ CGRFA-15/15/Inf.9, <u>http://www.fao.org/3/a-mm294e.pdf</u>.

ANNEX I

Reporting Format FOR MONITORING THE IMPLEMENTATION OF THE SECOND GLOBAL PLAN OF ACTION FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The Reporting Format serves countries reporting on their implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA) between July 2014 and December 2019.

The Reporting Format lists 58 indicators for monitoring the implementation of the 18 Priority Activities of the Second GPA and 48 questions requesting information necessary for the elaboration of the indicators.

The Reporting Format is a simplified version of the format previously used by countries to report on the implementation of the Second GPA for the period January 2012 to June 2014. Three questions and five indicators of the previous reporting format have been discontinued.⁵ However, for technical reasons, the original numbering of the indicators and questions has been maintained.

National Focal Points (NFPs) are requested to report whether an indicator is applicable and, if so, whether relevant data are available. In addition, NFPs are invited to provide an expert judgment on the level of achievement for each indicator. This is referred to as the 'NFP Rating', and ranges from 1 to 8, where 1 is the "lowest degree of implementation or achievement" and 8 is the "highest degree of implementation or achievement". Comments should also be provided to explain the rating submitted and provide additional information or clarifications. The NFP ratings for the 2012–2014 reporting cycle can be accessed under WIEWS.⁶

Where NFPs are not in a position to provide the response/data requested, they may only record illustrative examples or provide an explanatory note in the Comment box of the corresponding indicator(s). NFPs are encouraged to consult with other stakeholders, including non-governmental organizations and the private sector, prior to completing the questionnaire, on particular questions flagged with "(SH)" which stands for "stakeholders".

Answers to the questions of the Reporting Format should be reported in tables, the structure (columns) of which is described after each question in this Annex. Required information for addressing the indicator(s) is displayed with a grey background.

Some of the columns in the tables allow links to one of five common tables referred to throughout the Reporting Format. To identify these columns the word 'link' plus the name of the common table follows the column description. The common tables are described in the latter section of this Annex. They provide a structured scheme for reporting complementary information, which, although not required for the calculation of the indicators, allows for the provision of additional relevant details useful for the analysis on the implementation of the Second GPA.

The symbols \bullet and \bullet identify columns for which at least one column requires information. Whenever feasible while reporting, it is highly recommended to refer to a crop by using its scientific name rather than its vernacular or common name.

⁵ Indicators 1, 15, 18, 58 and 63, and questions 1.1, 16.2 and 18.2.

⁶ <u>http://www.fao.org/wiews/data/domains/monitoring-framework/en/</u>

PRIORITY ACTIVITY 1: Surveying and inventorying plant genetic resources for food and agriculture

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP	
2. Number of PGRFA (species/varieties) surveyed/inventoried	YES/NO	YES/NO	1-8		
3. Percentage of PGRFA (species/varieties) threatened ⁷ out of those surveyed/inventoried	YES/NO	YES/NO	1-8		
surveyed/inventoried QUESTION 1.2 Indicate the species (taxon name) of crops, crop wild relatives and wild food plants surveyed/inventoried in situ (including on farm) during the reporting period and flag the species identified as threatened. For the crop species indicate the number of farmers' varieties/landraces surveyed/inventoried and those that have been identified as threatened. Optionally, indicate the area(s) with threatened species/varieties.					

<u>Note</u>: For the purpose of this Priority Activity, "threatened PGRFA" are considered to be any crops, crop varieties, crop wild relatives or wild food plants that are no longer cultivated or no longer occur *in situ* in most of their previous areas of cultivation or occurrence.

COLUMN DESCRIPTION

Species surveyed/inventoried link:taxtab

Threatened species

• Yes •No

Number of farmers' varieties/landraces surveyed/inventoried

Number of farmers' varieties/landraces threatened

Name of area(s) with threatened species/varieties

⁷ For the purpose of this Priority Activity, "threatened PGRFA" are considered to be any crops, crop varieties, crop wild relatives or wild food plants that are no longer cultivated or no longer occur *in situ* in most of their previous areas of cultivation or occurrence.

PRIORITY ACTIVITY 2: Supporting on-farm management and improvement of plant genetic resources for food and agriculture

		1	1			
INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP		
4. Number of farmers supported in on-farm PGRFA management and improvement activities	YES/NO	YES/NO	1-8			
QUESTION						
2.1 Indicate programmes/projects carried out of management and improvement of PGRFA, and type of activities. (SH)						
COLUMN DESCRIPTION						
Name of on-farm management progra	Name of on-farm management programme/project link:protab					
Starting date (YYYY/MM) link:protab	Starting date (YYYY/MM) link:protab					
Ending date (YYYY/MM) link:protab						
Number of farmers involved						
Activities include:						
□ Pilot sites established in areas	s of high diversity					
Pilot sites established in high	risk areas					
□ Assessment of farmers' know	ledge					
Characterization and evaluati	on of local varietie	es				
□ Studies on local varieties' pop	pulation structure	and dynamics				
□ On-farm breeding						
□ Seed multiplication and distri	bution of bred var	ieties				
□ Assessment of local varieties	' utilization and m	anagement				
□ Assessment of improved variation	eties' utilization a	nd management				
□ Socio-economic assessment of	of PGRFA on-farm	n management and	l improveme	ent		
Environmental assessment of	PGRFA on-farm	management and	improvemen	t		
Other activities						

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
5. Percentage of cultivated land under farmers' varieties/landraces in areas of high diversity	YES/NO	YES/NO	1-8	

2.2 Indicate the areas of high diversity in the country and, for each crop or crop group, the estimated percentage of cultivated land under farmers' varieties/landraces out of the total cultivated land at the end or most recent year of the reporting period. Optionally, indicate the reference(s) for the estimation.

COLUMN DESCRIPTION

Name of area of high diversity

Name of crop/crop group

Total area under the specified crop/crop group (ha)

Percentage of cultivated land under farmers' varieties/landraces

Year of estimation

Reference link:reftab

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
6. Number of farmers' varieties/landraces distributed by national or local genebanks to farmers (either directly or through intermediaries)	YES/NO	YES/NO	1-8	

QUESTION

2.3 Indicate for each crop or crop group, the number of farmers' varieties/landraces distributed during the reporting period by national or local genebanks to farmers (either directly or through intermediaries).

COLUMN DESCRIPTION

Name of crop/crop group

Number of distinct farmers' varieties/landraces distributed to farmers

PRIORITY ACTIVITY 3: Assisting farmers in disaster situations to restore crop systems

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
7. Number of households that received seeds for planting as an aid after disaster situations	YES/NO	YES/NO	1-8	
8. Percentage of seed produced at the local level ⁸ out of that made available through disaster response interventions	YES/NO	YES/NO	1-8	

QUESTION

3.1 Indicate the name of the area affected by the disaster, the type and date of the disaster, the name of the crop or preferably the name of taxon reintroduced, the amount and origin of seed distributed during the reporting period and the number of beneficiary households. Optionally, indicate the name of the variety(ies) reintroduced, reintroduction date, the seed relief methodology used, the source of the germplasm and type of assessment made to guide the intervention.

<u>Note</u>: "Locally produced seed" is considered seed produced in neighbouring areas with agro-ecological conditions similar to those of the farms of the beneficiaries.

COLUMN DESCRIPTION

Name of disaster area

Type of disaster **O**

• Flood • Fire • Typhoon/hurricane • Drought • Civil war • International war

• Other (please specify)

Other types of disaster **0**

Date of disaster (YYYY/MM)

Name of crop @

Name of taxon link:taxtab

Amount of seed distributed/made available

Unit of measure

• Grams • Kilograms • Tonnes • Units

Percentage of the seed distributed/made available that was locally produced

Number of households that benefitted from seed aid

Variety(ies) reintroduced

Date of reintroduction (YYYY/MM)

Seed aid provided

□ Through direct seed distribution

□ Indirectly, through a market-based approach (e.g. voucher schemes, seed fairs)

□ Community seed multiplication

Source of germplasm/seed

• Community seed bank • National genebank • Regional genebank • International genebank • Farmers • Commercial agencies • Other (please specify)

Other sources of germplasm/seed

Assessments carried out

 $\hfill\square$ To characterize the functioning of seed systems at farmers' level

□ To evaluate the impact of a disaster on farmers' seed systems

INDICATO	OR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
policies for	ce of disaster risk management r restoring crop systems that ed security provisions	YES/NO	YES/NO	1-8	
QUESTION 3.2 Indicate if, by the end of the reporting period, any disaster risk management policy for restoring crop systems that include seed security provisions existed. Optionally, list it/them together with the year of publication.					
	at include seed security provisions ex	· •	0	1 V	0 1
systems that publication.	at include seed security provisions ex	· •	0	1 V	0 1
systems that publication. CO	at include seed security provisions ex	· •	0	1 V	0 1
systems that publication. CO	at include seed security provisions ex n. OLUMN DESCRIPTION	· •	0	1 V	0 1

Year of publication link:reftab

⁸ Produced in neighbouring areas with agro-ecological conditions similar to those of the farms of the beneficiaries.

PRIORITY ACTIVITY 4: Promoting *in situ* conservation and management of crop wild relatives and wild food plants

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
10. Percentage of national <i>in situ</i> conservation sites with management plans addressing crop wild relatives and wild food plants	YES/NO	YES/NO	1-8	
QUESTION				
4.1 Indicate the number of national <i>in situ</i> cons management plans addressing crop wild relative COLUMN DESCRIPTION				
Number of national in situ conservatio	n sites			
Number of national <i>in situ</i> conservation relatives and wild food plants	n sites with mana	agement plans ac	ldressing cr	op wild
INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
11. Number of actions with institutional support addressing <i>in situ</i> conservation and management of crop wild relatives and wild food plants	YES/NO	YES/NO	1-8	
institutions. Optionally, indicate the area covered COLUMN DESCRIPTION		nd additional topi	cs addressed	. (SH)
Name of programme/project/activity 1	ink:protab			
Starting date (YYYY/MM) link:protab				
Ending date (YYYY/MM) link:protab				
Implemented with support from National institution(s) Private sector Institution(s) from a foreign c International research centre(s United Nations agency(ies) Non-governmental organization 	;)			
Name of conservation area				
Type of area Protected Restoration 				
Name of taxon link:taxtab				
Plant group □ Crop wild relatives □ Wild food plants				
Additional topics				
 Implementation of management Involvement of local communication 	nities	-	l of genetic o	liversity
□ Implementation of plans to er □ Arrangements for <i>ex situ</i> cons	servation of threate	rticipation ened and endange	red population	ons

INDICATOR	APPLICABLE	2	1011110	COMMENT BY NFP
12. Number of crop wild relatives and wild food plants species actively ⁹ conserved <i>in situ</i>	YES/NO	YES/NO	1-8	

4.3 Indicate the most recent estimation of the number of crop wild relatives, including all species from primary and secondary genepools plus those from the tertiary genepool previously used for breeding, and of wild food plants species actively conserved *in situ* **in the country and the year of estimation. Optionally, indicate any reference to their estimation.**

<u>Note</u>: By "actively conserved" it is meant that the target species are specifically addressed by the management plan of the conservation area.

COLUMN DESCRIPTION

Plant group

• Crop wild relatives • Wild food plants • Crop wild relatives and wild food plants

Estimated number of species actively conserved in situ

Year of estimation (YYYY)

Reference(s) link:reftab

⁹ By "actively conserved" it is meant that the target species are specifically addressed by the management plan of the conservation area.

PRIORITY ACTIVITY 5: Supporting targeted collecting of plant genetic resources for food and agriculture

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
13. Existence of a strategy for identification of gaps in national genebank holdings and for targeted collecting missions to fill identified gaps	YES/NO	YES/NO	1-8	
14. Number of crops conserved in the national genebank(s) that require targeted collecting	YES/NO	YES/NO	1-8	

QUESTION

5.1 Indicate the crops conserved in the national genebank for which targeted collecting was required at the end of the reporting period and specify if a strategy existed for the identification of gaps in the crop collection and for undertaking targeted collecting missions to fill identified gaps that could not be filled by accessing other national or international genebanks. Optionally, indicate the gaps detected and the methods used to detect them. (SH)

COLUMN DESCRIPTION

Targeted collecting was required for the following crop

A strategy

• Existed for the identification of gaps in the collection • Existed for the identification of gaps and for targeted collecting missions • Did not exist

Gaps detected

□ Incomplete coverage of targeted taxa

- □ Incomplete geographical coverage
- □ Missing known farmers' varieties/landraces
- □ Missing historical varieties
- □ Missing crop wild relatives
- □ Incomplete biotic and abiotic stress resistance coverage

Other gaps detected

Methods used to detect gaps

- □ Comparison of stored material against organization mandate
- □ Comparison of stored material against historical references
- □ Comparison of stored material against geographical references

Other methods

INDICATORS	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
16. Number of samples resulting from targeted collecting missions in the country	YES/NO	YES/NO	1-8	

5.2 Indicate the number of samples collected during targeted collecting missions carried out in the country during the reporting period, providing the name of the taxon. Optionally, indicate the name of the collected crop and the geographical area(s) where the mission took place. (SH)

COLUMN DESCRIPTION

Name of collected crop

Name of collected taxon link:taxtab

Number of collected samples

Name of collecting area(s)

PRIORITY ACTIVITY 6: Sustaining and expanding *ex situ* conservation of germplasm

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP		
17. Trend in annual capacity for sustaining <i>ex situ</i> collections	YES/NO	YES/NO	1-8			
QUESTION						
6.1 Indicate, for each year of the reporting period, the capacity of the national genebank(s) in the country in terms of human and financial resources and infrastructure expressed as a percentage of the capacity in 2010.						
COLUMN DESCRIPTION						
Year						
Human resources capacity (100% in 2010)						
	Financial resources (recurrent costs) capacity (100% in 2010)					
	pacity (100% in 2	2010)				

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
19. Number of species conserved <i>ex situ</i> under medium or long-term conditions	YES/NO	YES/NO	1-8	
20. Number of accessions conserved <i>ex situ</i> under medium or long-term conditions (SDG indicator 2.5.1)	YES/NO	YES/NO	1-8	
21. Percentage of <i>ex situ</i> accessions safety duplicated	YES/NO	YES/NO	1-8	

6.2 Indicate the accessions conserved *ex situ* **under medium- or long-term conditions at the end of the reporting period, including the holding institute WIEWS code, accession number, name of taxon, genebank(s) holding safety duplications and type of storage.** Optionally, indicate the name of the crop, acquisition date, country of origin, biological status, latitude and longitude of collecting site, collecting/ acquisition source and status under the Multilateral System of the International Treaty on PGRFA. (SH)

<u>Note</u>: Question 6.2 provides information for indicator 2.5.1 of the Sustainable Development Goals (SDG).¹⁰ Since 2016 an *ad hoc* reporting form that substitutes this question has been used by countries to report on an annual basis on the above three indicators including SDG indicator 2.5.1.¹¹ Countries already publishing *ex situ* collections data that are compliant with the requirements of indicator 2.5.1 have the alternative option of communicating to FAO the Internet address for downloading the data. For the above reasons this question has been disabled in the online WIEWS Reporting Tool. The NFP is nonetheless expected to provide the ratings and associated comments for indicators 19, 20 and 21 through the online WIEWS Reporting Tool.

COLUMN DESCRIPTION

COL	UMN DESCRIPTION
Hold	ing institute code ¹²
Acce	ssion number ¹³
Nam	e of taxon ¹⁴ link:taxtab
Nam	e of crop ¹⁵
Acqu	isition date (YYYY/MM) ¹⁶
Cour	ntry of origin ¹⁷
Biolo	 • 100) Wild • 200) Weedy • 300) Traditional cultivar/Landrace • 400) Breeding/research material • 500) Advanced/Improved cultivar • 600) GMO
Gene	ebank(s) holding safety duplications ¹⁹ link:instab
Latit	ude of collecting site (decimal degrees format) ²⁰
Long	itude of collecting site (decimal degrees format) ²¹
Colle	 ecting/acquisition source²² 10) Wild habitat • 20) Farm or cultivated habitat • 30) Market or shop • 40) Institute, Experimental station, Research organization, Genebank • 50) Seed company • 60) Weedy, disturbed or ruderal habitat
Туре	 e of germplasm storage²³ 12) Seed medium-term 13) Seed long-term 20) Field 30) In vitro 40) Cryopreservation 50) DNA
Statu	• Not included • Included

¹⁰ http://www.fao.org/fileadmin/user upload/wiews/docs/Metadata-02-05-01 PGR.pdf

¹¹ http://www.fao.org/fileadmin/user_upload/wiews/docs/SDG_251_data_requirement_sheet_table_EN.docx

¹² It corresponds to descriptor 1 (INSTCODE) of FAO/Bioversity Multi-Crop Passport Descriptors (MCPD) V.2.

¹³ It corresponds to descriptor 2 (ACCENUMB) of FAO/Bioversity MCPD V.2.

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
22. Number of <i>ex situ</i> accessions regenerated and/or multiplied	YES/NO	YES/NO	1-8	
23. Percentage of <i>ex situ</i> accessions in need of regeneration	YES/NO	YES/NO	1-8	
24. Percentage of <i>ex situ</i> accessions in need of regeneration for which a budget for regeneration does not exist	YES/NO	YES/NO	1-8	

PRIORITY ACTIVITY 7: Regenerating and multiplying ex situ accessions

QUESTION

7.1 Indicate, for each crop, crop group or preferably for each taxon or genus conserved *ex situ* by the national genebank(s), the number of accessions regenerated and/or multiplied during the reporting period, the number of accessions requiring regeneration and the number of these for which a budget for regeneration was not available during the reporting period. (SH)

<u>Note</u>: It is assumed that for determining regeneration needs, a quality testing of the material conserved, especially viability testing for orthodox seeds, is carried out periodically by the national genebank(s).

COLUMN DESCRIPTION

Name of crop/crop group **O**

Name of taxon or genus link:taxtab 0

Total number of accessions in the national genebank(s)

Number of accessions regenerated and/or multiplied

Number of accessions in need of regeneration

Number of accessions in need of regeneration without a budget for regeneration

¹⁴ The full taxon name without authority. It corresponds to the concatenation of descriptors 5 (GENUS), 6 (SPECIES) and 8 (SUBTAXA) of FAO/Bioversity MCPD V.2.

¹⁵ It corresponds to descriptor 10 (CROPNAME) of FAO/Bioversity MCPD V.2.

¹⁶ It corresponds to descriptor 12 (ACQDATE) of FAO/Bioversity MCPD V.2.

¹⁷ It corresponds to descriptor 13 (ORIGCTY) of FAO/Bioversity MCPD V.2.

¹⁸ It corresponds to descriptor 19 (SAMPSTAT) of FAO/Bioversity MCPD V.2.

¹⁹ It corresponds to descriptor 25 (DUPLSITE) of FAO/Bioversity MCPD V.2.

²⁰ It corresponds to descriptor 15.1 (DECLATITUDE) of FAO/Bioversity MCPD V.2.

²¹ It corresponds to descriptor 15.3 (DECLONGITUDE) of FAO/Bioversity MCPD V.2.

²² It corresponds to descriptor 21 (COLLSRC) of FAO/Bioversity MCPD V.2.

²³ It corresponds to descriptor 26 (STORAGE) of FAO/Bioversity MCPD V.2.

²⁴ It corresponds to descriptor 27 (MLSSTAT) of FAO/Bioversity MCPD V.2.

PRIORITY ACTIVITY 8: Expanding the characterization, evaluation and further development of specific collection subsets to facilitate use

INDICATOR	APPLICABLE	DATA AVAILABLE		COMMENT BY NFP
25. Average number of morphological traits characterized per accession of the <i>ex situ</i> collections	YES/NO	YES/NO	1-8	511.11

QUESTIONS

8.1 Indicate the accessions characterized and conserved *ex situ* under medium- or long-term conditions and the number of morphological traits characterized. (SH)

Note: Accessions reported for SDG indicator 2.5.1 (see question 6.2) should also be listed here.

COLUMN DESCRIPTION

Holding institute code²⁵

Accession number²⁶

Name of taxon²⁷ link:taxtab

Number of morphological traits characterized

INDICATOR	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
26. Number of publications on germplasm evaluation and molecular characterization	YES/NO	YES/NO	1–8	

QUESTION

8.2 Indicate the number of publications on characterization based on molecular markers and on evaluation for agronomic and biochemical traits, as well as biotic and abiotic stresses of germplasm conserved *ex situ* in the country, that were produced during the reporting period by the national genebank(s) and by germplasm recipients, as reported to the national genebank(s). Optionally, list the references. (SH)

COLUMN DESCRIPTION

Number of publications produced by the national genebank(s) **O**

Number of publications produced by germplasm recipients and reported to the national genebank(s) $\pmb{0}$

References link:reftab

²⁵ It corresponds to descriptor 1 (INSTCODE) of FAO/Bioversity Multi-Crop Passport Descriptors (MCPD) V.2.

²⁶ It corresponds to descriptor 2 (ACCENUMB) of FAO/Bioversity MCPD V.2.

²⁷ The full taxon name without authority.

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP			
27. Number of trait-specific collection subsets documentedYES/NOYES/NO1-8							
QUESTION							
8.3 Indicate for each crop, or preferably for each taxon, conserved by the national genebank(s), the number of trait-specific collection subsets documented during the reporting period. Optionally, indicate the references. (SH) COLUMN DESCRIPTION							
Name of crop 0							
Name of taxon link:taxtab							
Number of trait-specific collection subs	ets documented						
References link:reftab							

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
28. Number of accessions distributed by genebanks to users of germplasm	YES/NO	YES/NO	1-8	
29. Number of samples distributed by genebanks to users of germplasm	YES/NO	YES/NO	1-8	

8.4 Indicate for each crop, crop group or preferably for each taxon, the number of accessions and the number of samples distributed during the reporting period by the national genebank(s). Optionally, indicate the amounts distributed to the different categories of recipients. (SH)

COLUMN DESCRIPTION

Name of crop/crop group 0

Name of taxon link:taxtab 0

Total number of accessions distributed by the national genebank(s)²⁸

Number of accessions distributed to National Agricultural Research Centres

Number of accessions distributed to the private sector

Number of accessions distributed to farmers or Non-governmental organizations

Number of accessions distributed to others (national - e.g. Universities)

Number of accessions distributed to foreign stakeholders

Number of accessions distributed to unknown

Total number of samples distributed by the national genebank(s)²⁹

Number of samples distributed to National Agricultural Research Centres

Number of samples distributed to the private sector

Number of samples distributed to farmers or Non-governmental organizations

Number of samples distributed to others (national - e.g. Universities)

Number of samples distributed to foreign stakeholders

Number of samples distributed to unknown

²⁸ The sum of the amounts in the following six columns may not equal the total reported here.

²⁹ The sum of the amounts in the following six columns should equal the total reported here.

PRIORITY ACTIVITY 9: Supporting plant breeding, genetic enhancement and base-broadening efforts

INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
30. Number of crops with active public pre- breeding and breeding programmes	YES/NO	YES/NO	1–8	
31. Number of crops with active private pre- breeding and breeding programmes	YES/NO	YES/NO	1-8	
32. Number of breeding activities oriented to small-scale farmers, villages or traditional communities and organic farming	YES/NO	YES/NO	1-8	

QUESTIONS

9.1 Indicate taxa that have been used by breeding programmes during the reporting period. Specify whether these programmes were public and/or private and indicate if they were specifically oriented to small-scale farmers, communities that use traditional farmers' varieties/landraces and/or to organic farming. Optionally, indicate the name of the crop, the improvement targets in terms of trait(s) or characteristic(s), agroecological zone(s) and/or farming system(s) the improvement applies to, providing an estimate of the importance of the improvement in terms of food security, and detail germplasm source(s), the type of participatory breeding activities conducted, the number of professional staff involved, output(s) achieved so far and year of achievement. (SH)

COLUMN DESCRIPTION

Name of taxon link:taxtab

Name of crop

Programme supported by

Public • Private • Public and private

Breeding activities oriented to

- \square Small-scale farmers
- □ Villages or communities that use traditional farmers' varieties/landraces
- □ Organic farming

Trait(s)/characteristic(s) addressed

Agroecological zone(s)/Farming system(s) (the improvement applies to) Estimated importance of the improvement in terms of food security for the specified agroecological zone/farming system

• Limited • Medium • High

Germplasm source(s)

- □ Local genebank
- □ National genebank
- Regional/International network
- □ CGIAR genebank
- □ Public organization from developed country
- □ Public organization from developing country
- □ Private sector

Participatory breeding involved farmers in:

- □ Setting breeding priorities
- □ Selecting from fixed lines or finished varieties (participatory varietal selection)
- □ Selecting from segregating populations
- □ Making crosses and/or determining parents

Number of professional staff involved

Output produced

9.2 Indicate taxa that have been targeted by genetic enhancement (including base-broadening) programmes during the reporting period. Specify whether these programmes were public and/or private. Optionally, specify the name of the crop, type of and rationale for the activities undertaken, details of the starting materials and methods for assessing diversity in them, and type of farmers' involvement. (SH)

COLUMN DESCRIPTION

Name of taxon link:taxtab

Name of crop

Programme supported by

Public • Private • Public and private

Type of activity

- □ Genetic enhancement by introgression for specific traits
- □ Population improvement through incorporation or base broadening

Other type of activity

Rationale for activity

- □ Poor gain in breeding programme
- □ Specific trait not available in current breeding materials
- □ Evidence of narrow genetic base

Other rationale for activity

Assessment of genetic diversity was made through

- □ Molecular markers
- \square Pedigree studies
- $\hfill\square$ Other methods
- □ No assessment made

Starting materials

- \Box Local varieties/landraces
- □ Improved varieties in use in the country
- □ Exotic varieties
- \square Wild relatives

Farmers' involvement

- □ Setting priorities
- Implementing programme

INDICATORS	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
33. Number of active public crop breeders	YES/NO	YES/NO	1-8	
34. Number of active private crop breeders	YES/NO	YES/NO	1-8	

9.3 Indicate the number of active public or private crop breeders for the different crop groups specifying the year of the information. Optionally, indicate the source of the information.

Note: The year of the information should be within or as close as possible to the years of the reporting period.

Note: Th	he year of the information should be within or as close as possible to the years of the reporting period.
	COLUMN DESCRIPTION
	Crop group ● □ Cereals
	Grain legumes
	□ Roots and tubers
	Fruits
	□ Vegetables
	□ Forages
	Fiber plants
	□ Oil plants
	□ Sugar plants
	□ Stimulant plants
	Medicinal, aromatic and spice plants
	Other crop group O
	Number of active public crop breeders
	Number of active private crop breeders
	Year of information
	Reference link:reftab

PRIORITY ACTIVITY 10: Promoting diversification of crop production and broadening crop diversity for sustainable agriculture

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP				
35. Number of programmes/projects/activities to increase inter-specific diversity within crop production systems	YES/NO	YES/NO	1–8					
QUESTION								
10.1 Indicate programmes/projects/activities can increase of inter-specific diversity within crop p preferably the taxon/taxa. Optionally, indicate to COLUMN DESCRIPTION	roduction system	s, specifying the	targeted ci	op(s) or				
	lenrotab							
Starting date (YYYY/MM) link:protab	Name of programme/project/activity link:protab Starting date (YYYY/MM) link:protab							
Ending date (YYYY/MM) link:protab								
Name of targeted crop(s) 0								
Name of targeted taxon/taxa link:taxtab	0							
Topics covered Assessing/monitoring intra-spectrum 	ecific diversity in o	crops						
□ Increasing intra-specific divers	sity in crops							
□ Assessing/monitoring crop div	ersity in agricultu	ral systems						
Increasing crop diversity in ag	ricultural systems							
Other topics								
Reference link:reftab								

INDICATOR	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
36. Number of new crops, reintroduced crops and newly domesticated wild species	YES/NO	YES/NO	1-8	

QUESTION

10.2 Indicate the taxon of the new crop(s) introduced from abroad, of wild species newly domesticated and of crops reintroduced that were sourced from a genebank, during the reporting period. Optionally, indicate the name of the crop and the main cultivation area(s).

COLUMN DESCRIPTION

Name of crop

Name of taxon link:taxtab

Source of diversification

• New introduced crop • Reintroduced crop • Wild species domesticated

Name of the main cultivation area(s)

PRIORITY ACTIVITY 11: Promoting development and commercialization of all varieties, primarily farmers' varieties/landraces and underutilized species³⁰

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP	
37. Existence of national policies that promote development and commercialization of farmers' varieties/landraces and underutilized species	YES/NO	YES/NO	1-8		
QUESTION 11.1 Indicate if, by the end of the reporting period, any national policy/legal framework (including strategies) to promote the development and commercialization of farmers' varieties/landraces and underutilized species existed. Optionally, list it/them together with the year of publication and the topic promoted. COLUMN DESCRIPTION					
Existence of policy • Existed • Did not exist					
Policy/legal framework (including strategies) reference link:reftab					
Year of publication link:reftab					
Topic promoted Development and commercialization of farmers' varieties/landraces Development and commercialization of underutilized species 					

³⁰ Indicators of this Priority Activity focus on farmers' varieties/landraces and underutilized species. Indicator 40 of Priority Activity 12 and its associated question 12.1 focus on all varieties.

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
38. Number of programmes/projects/activities promoting development and commercialization of farmers' varieties/landraces and underutilized species	YES/NO	YES/NO	1-8	
QUESTION 11.2 Indicate programmes/projects/activities car development and commercialization of farmers' indicating the targeted taxon. Optionally, indicate topics covered. (SH)	varieties/landra	ces and underut	ilized crops	or species,
COLUMN DESCRIPTION				
Name of programme/project/activity link	k:protab			
Starting date (YYYY/MM) link:protab				
Ending date (YYYY/MM) link:protab				
Target All varieties Farmers' varieties/landraces Underutilized crops or species				
Name of taxon link:taxtab				
Name of crop Reference link:reftab Areas of interest				
Topics covered Research Crop improvement Seed distribution Improving processing Market development Public awareness				
Policy changes				

INDICATOR	APPLICABLE	DATA	1011110	COMMENT
		AVAILABLE	BY NFP	BY NFP
39. Number of farmers' varieties/landraces	YES/NO	YES/NO	1-8	
and underutilized species with potential for	120/110	120/100	1.0	
commercialization identified				

11.3 Indicate for each relevant taxon, the number of farmers' varieties/landraces with potential for commercialization identified during the reporting period. Optionally, indicate the crop name and the references.

COLUMN DESCRIPTION

Name of taxon link:taxtab

Name of crop

Number of farmers' varieties/landraces with potential for commercialization identified Reference(s) link:reftab

11.4 Indicate the underutilized species with potential for commercialization identified during the reporting period. Optionally, indicate the name of the crop, rank the underutilized species in terms of priority and detail the progress achieved so far towards their development and sustainable use in the country.

COLUMN DESCRIPTION

Name of taxon link:taxtab

Name of crop

Priority for the country

• Low • Low-medium • Medium • Medium-high • High

Geographical distribution mapping

- No activity planned Activities planned but not initiated Some on-going activities
- Activities well advanced Activities completed

Characterization/evaluation

- No activity planned Activities planned but not initiated Some on-going activities
- Activities well advanced Activities completed

Crop improvement

No activity planned • Activities planned but not initiated • Some on-going activities
Activities well advanced • Activities completed

Post-harvest processing

- No activity planned Activities planned but not initiated Some on-going activities
- Activities well advanced Activities completed

Marketing

- No activity planned Activities planned but not initiated Some on-going activities
- Activities well advanced Activities completed

Multiplication of seed/planting material

- No activity planned Activities planned but not initiated Some on-going activities
 - Activities well advanced Activities completed

Documentation in information systems

- No activity planned Activities planned but not initiated Some on-going activities
- Activities well advanced Activities completed

Reference(s) link:reftab

PRIORITY ACTIVITY 12: Supporting seed production and distribution

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
40. Number of new varieties released	YES/NO	YES/NO	1-8	
QUESTION				
12.1 Indicate all varieties released in the country year of release. Optionally, indicate, for each variorganization, breeder person, type, origin, target as pedigree.	ety, the year of reg	gistration (when a	pplicable), l	preeding
COLUMN DESCRIPTION				
Name of taxon link:taxtab				
Name of crop				
Name of variety				
Year of release				
Year of registration				
Breeding organization link:instab				
Breeder person link:pertab				
Type • Farmers' variety/landrace • Imp	proved variety			
Origin • National • Introduced from abr	oad			
Target agro-ecological environment(s)				
Important characteristics				
Pedigree				
Remarks ³¹				

INDICATOR	APPLICABLE	DATA AVAILABLE		COMMENT BY NFP
41. Number of formal/registered seed enterprises	YES/NO	YES/NO	1–8	
QUESTION				

12.2 Indicate the most updated number of formal/registered seed enterprises in the country, specifying the year of the information. Optionally, indicate the source of the information.

COLUMN DESCRIPTION

Number of formal/registered seed enterprises

Year of information

Reference link:retab

³¹ Remarks include all information under the column *Note* of the former Cultivars table (cultab).

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
42. The least number of varieties that together account for 80% of the total area for each of the five most widely cultivated crops	YES/NO	YES/NO	1-8	

12.3 Indicate, for each of the five most widely cultivated crops and for the most recent year with available relevant statistics, the least number of varieties that together account for 80% of the total crop area.

COLUMN DESCRIPTION

Year

Name of crop **O**

Name of taxon link:taxtab **O**

The least number of varieties in 80% of the total crop area

Total crop area (ha)

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
43. Percentage of area supplied with seed meeting the quality standard of the formal seed sector for the five most widely cultivated annual crops	YES/NO	YES/NO	1-8	

QUESTION

12.4 Indicate, for each of the five most widely cultivated annual crops and for the most recent year with available relevant statistics, the taxon name of the crop, the total harvested area and the estimated percentage of area supplied with seed meeting the quality standard of the formal seed sector. Optionally, indicate the name of the annual crop.

COLUMN DESCRIPTION

Year

Name of taxon of annual crop link:taxtab

Name of annual crop

Total crop harvested area (ha)

Percentage of area supplied with seed meeting the quality standard of the formal seed sector

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP	
44. Existence of a national seed policy and/or seed law	YES/NO	YES/NO	1-8		
QUESTION					
12.5 Indicate if, by the end of the reporting period, national seed policy(ies) and/or national seed law(s) existed. Optionally, list it/them together with the year of publication.					
COLUMN DESCRIPTION					
Existence of policy/law					
• Existed • Did not exist					
Seed policy/law reference link:reftab					
Year of publication link:reftab					

PRIORITY ACTIVITY 13: Building and strengthening national programmes

INDICATOR	APPLICABLE	DATA AVAILABLE		COMMENT BY NFP
45. Existence of a national entity (e.g. committee, commission, council, board) functioning as a coordination mechanism for PGRFA activities and/or strategies	YES/NO	YES/NO	1-8	

QUESTION

13.1 Indicate if, by the end of the reporting period, a national entity (e.g. committee, commission, council, board) functioning as a governance structure responsible for coordinating and/or facilitating PGRFA activities in the country existed. Optionally, indicate its name, year of establishment and restructuring, and if it governed other genetic resources, its objectives, the categories of stakeholders represented and the frequency of meetings.

COLUMN DESCRIPTION

Existence of national entity

• Existed • Did not exist

Name of entity link:instab

Year of establishment (YYYY)

Year of latest restructuring (YYYY)

Additional mandate

- □ Forest genetic resources
- □ Animal genetic resources
- □ Aquatic genetic resources
- □ Micro-organism and invertebrate genetic resources

Description of objectives Frequency of meetings

• Quarterly during a year • Twice a year • Annual • Every two years • Every three years • Irregular • Other

Date of last meeting (YYYY/MM) Participating partners

- \square Breeders
- □ Farmers
- \square Private sector
- Non-governmental organizations
- □ Universities
- □ National genebanks
- □ Community organizations
- □ Ministry of Agriculture
- □ Ministry of Environment
- □ Ministry of Fisheries

Other participating partners

INDIC	ATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP	
	stence of a formally appointed national bint or coordinator for PGRFA	YES/NO	YES/NO	1-8		
QUEST	TION					
	dicate if, by the end of the reporting peri icially appointed. Optionally, indicate nam ment.					
	COLUMN DESCRIPTION					
	Existence of National Focal Point					
	• Existed • Did not exist					
	Name of Focal Point/Coordinator link:pertab					
	Title link:pertab					
	Position link:pertab					
	Email address link:pertab					
	Name of organization link:pertab					
	Date of appointment (YYYY/MM)					

INDICATOR	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
47. Existence of a governmental policy framework and strategies for PGRFA conservation and use	YES/NO	YES/NO	1-8	

13.3 Indicate if, by the end of the reporting period, any governmental policy framework and strategy for PGRFA conservation and use existed. Optionally, indicate reference(s) and year(s) of publication.

COLUMN DESCRIPTION

Existence of governmental policy/strategy

• Existed • Did not exist

Policy framework and strategy reference link:reftab

Year of publication link:reftab

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP		
48. Existence of a national information sharing mechanism for PGRFA	YES/NO	YES/NO	1-8			
QUESTION 13.4 Indicate if, by the end of the reporting pe PGRFA existed Optionally indicate reference(
PGRFA existed. Optionally, indicate reference(s), year(s) of publication and the number of contributing stakeholders.						
COLUMN DESCRIPTION						
Existence of national information sha	ring mechanism					
• Existed • Did not exist						
Reference link:reftab						
Year of publication link:reftab						
Number of contributing stakeholders						

PRIORITY ACTIVITY 14: Promoting and strengthening networks for plant genetic resources for food and agriculture

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP		
49. Membership to a regional PGRFA network	YES/NO	YES/NO	1–8			
QUESTION						
14.1 Indicate of which PGRFA regional network(s) the country was a member at the end of the reporting period.						
COLUMN DESCRIPTION						
Member of regional network						
• Yes • No						
Name of network link:instab						

INDICATOR	APPLICABLE	Diffi	1011110	COMMENT BY NFP
50. Number of crop improvement networks of which national stakeholders are members	YES/NO	YES/NO	18	

QUESTION

14.2 Indicate of which crop improvement networks national stakeholders were members at the end of the reporting period. (SH)

COLUMN DESCRIPTION

Member of improvement network

• Yes • No

Name of network link:instab

INDICATOR	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
51. Number of publications produced by national stakeholders within the framework of networks	YES/NO	YES/NO	1-8	

QUESTION

14.3 Indicate publications produced by your organization during the reporting period within the framework of PGRFA networks. (SH)

COLUMN DESCRIPTION

Publications produced

• Yes • No

Reference link:reftab

PRIORITY ACTIVITY 15: Constructing and strengthening comprehensive information systems for plant genetic resources for food and agriculture

INDICATOR	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
52. Number of populations of crop wild relatives conserved <i>in situ</i> and documented in a publicly available information system	YES/NO	YES/NO	1–8	

QUESTION

15.1 Indicate the number of populations of crop wild relatives that at the end of the reporting period, were conserved *in situ* and documented in a publicly available information system, specifying the name and Internet address of the information system. Optionally, indicate the percentage of populations characterized and with geographic distribution data.

COLUMN DESCRIPTION

Number of populations of crop wild relatives

Percentage of populations characterized

Percentage of populations with geographic distribution data

Information system

System web address

INDICATOR	APPLICABLE	DATA AVAILABLE	1011110	COMMENT BY NFP
53. Number of farmers' varieties/landraces cultivated on-farm and documented in a publicly available information system	YES/NO	YES/NO	1-8	

QUESTION

15.2 Indicate the number of farmers' varieties/landraces that, at the end of the reporting period were cultivated on-farm and documented in a publicly available information system, and specify the name and Internet address of the information system. Optionally, indicate the percentage of them with published description and geographic distribution data.

COLUMN DESCRIPTION

Number of farmers' varieties/landraces

Percentage of farmers' varieties/landraces with morphological description

Percentage of farmers' varieties/landraces with agronomic description

Percentage of farmers' varieties/landraces with geographic distribution data

Information system

System web address

INDICATOR	APPLICABLE	DATA	RATING	COMMENT
		AVAILABLE	BY NFP	BY NFP
54. Number of accessions from <i>ex situ</i>	YES/NO	YES/NO	1-8	
collections documented in a publicly				
available information system				

QUESTION

15.3 Indicate the number of accessions that, at the end of the reporting period, were conserved *ex situ* **and documented in a publicly available information system, and specify the name and Internet address of the information system.** Optionally, indicate the percentage of accessions with published characterization and evaluation data. (SH)

COLUMN DESCRIPTION

Holding institute code³²

Number of accessions³³

Percentage of accessions with characterization data

Percentage of accessions with evaluation data

Information system

System web address

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
55. Number of released varieties	YES/NO	YES/NO	1-8	
documented in a publicly available				
information system				

QUESTION

15.4 Indicate the number of varieties that, by the end of the reporting period, were released through a formal procedure and documented in a publicly available information system, and specify the name and Internet address of the information system. Optionally, indicate the type of information published.

COLUMN DESCRIPTION

Number of varieties

Published information includes

□ Pedigree

 $\hfill\square$ Agronomic description

 \square Seed source

Information system

System web address

³² It corresponds to descriptor 1 (INSTCODE) of FAO/Bioversity MCPD V.2.

³³ Equal to or less than the number of records under question 6.2 for the same genebank.

INDICATOR	APPLICABLE	DATA	RATING	COMMENT
		AVAILABLE	BY NFP	BY NFP
56. Participation in publicly accessible,	YES/NO	YES/NO	1-8	
international/regional PGRFA information				
systems				
OUDSTION				

QUESTION

15.5 Indicate if, by the end of the reporting period, your organization contributed information to a publicly accessible international/regional PGRFA information system. If so, optionally, indicate the information system and the frequency of updates. (SH)

COLUMN DESCRIPTION

Contributed to an international/regional PGRFA information system publicly accessible • Yes • No

International/regional information system

Frequency of updates

• Daily • Monthly • Annually • Every two years • Every three years or more

PRIORITY ACTIVITY 16: Developing and strengthening systems for monitoring and safeguarding genetic diversity and minimizing genetic erosion of plant genetic resources for food and agriculture

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP		
57. Existence of national systems/mechanisms to monitor and safeguard genetic diversity and minimize genetic erosionYES/NO1-8						
QUESTION						
16.1 Indicate if, by the end of the reporting period, any national system or mechanism to monitor and safeguard genetic diversity and minimize genetic erosion existed. Optionally, indicate the system/mechanism reference, year of publication, the number of contributing stakeholders and remedial actions undertaken.						
COLUMN DESCRIPTION						
Existence of national system/mechanism						
• Existed • Did not exist						
System/mechanism reference link:reftab						
Year of publication link:reftab						
Number of contributing stakeholders						
Number of contributing stakeholders						

PRIORITY ACTIVITY 17: Building and strengthening human resource capacity

INDICATOR	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP
59. Existence of post-graduate, graduate and secondary educational and training programmes including aspects on PGRFA conservation and sustainable use	YES/NO	YES/NO	1-8	
QUESTION	• • •			

17.1 Indicate if, by the end of the reporting period, any post-graduate, graduate and secondary educational and training programmes that included aspects on PGRFA conservation and sustainable use existed in the country.

COLUMN DESCRIPTION

Educational and training programmes including aspects on PGRFA conservation and sustainable use

Existed at post-graduate level

□ Existed at graduate level

- □ Existed at secondary-school level
- □ Did not exist

INDICATOR	APPLICABLE	DATA AVAILABLE		COMMENT BY NFP
60. Percentage of staff whose skills in conserving and using PGRFA have been upgraded	YES/NO	YES/NO	1–8	

QUESTION

17.2 Indicate the total number of professional staff in your organization working on PGRFA conservation and use at the end of the reporting period, and the number of those whose skills have been upgraded during the reporting period. (SH)

COLUMN DESCRIPTION

Total number of PGRFA professionals

Number of PGRFA professionals who completed a PhD programme O

Number of PGRFA professionals who completed a MSc programme **O**

Number of PGRFA professionals who attended short courses and seminars **0**

PRIORITY ACTIVITY 18: Promoting and strengthening public awareness of the importance of plant genetic resources for food and agriculture

NIDICATODO		DATA	DATING	COMMENT	
INDICATORS	APPLICABLE	DATA AVAILABLE	RATING BY NFP	COMMENT BY NFP	
61. Existence of a public awareness programme promoting PGRFA conservation and utilization	YES/NO	YES/NO	1-8		
62. Number of stakeholder groups participating in the implementation of the public awareness programme	YES/NO	YES/NO	18		
QUESTION					
conservation and utilization existed in the cou implementation. Optionally, indicate programm use that were initiated during the reporting period programme.	es/projects/activitie	s on PGRFA cons	servation an	d sustainable	
COLUMN DESCRIPTION					
PGRFA public awareness programme• Existed • Did not exist					
Participating stakeholder groups ● □ National genebanks					
Farmers					
□ Community organizations					
Non-governmental organizat	ions				
□ Plant breeders					
□ Private seed sector					
Universities or schools					
□ Ministry of Agriculture					
Ministry of Environment					
Other participating group(s) 0					
Resulting programmes/projects/activ	ities link:protab				

REPORTING FORMAT: COMMON TABLES

This section contains a description of five common tables. Each table is used to store detailed information about the different entities, namely, organizations, contact persons, programmes/projects/activities, taxa and published/unpublished references, which can be referred to in the answers to several questions throughout the Revised Reporting Format.

Information available at FAO on the above entities are made available to countries through the on-line WIEWS reporting tool.

The 'ORGANIZATIONS table' (instab) contains contact information on institutes, organizations and networks, as well as departments or subordinate structures within them. The column 'parent organization' is used to build hierarchies among the table entries.

COLUMN DESCRIPTION Name of organization **Organization acronym** WIEWS instcode Parent organization link:instab Address **ZIP** code City Country Telephone Fax **Email address** WWW address Latitude (decimal degrees format) Longitude (decimal degrees format) **Organization authority status** • Governmental • Non-governmental • International • Regional • Parastatal • Private • United Nations • CGIAR

Organization role categories

- \Box Genebank (long-term collections)
- □ Genebank (medium-term collections)
- □ Genebank (short-term collections)
- \square Botanical garden
- \square Breeder
- \square Network
- \Box Community
- \square Educational
- \square Seed producer
- Seed supplier
- \square Farmer community
- \square Research
- \square Extensionist
- \square Publisher
- □ Laboratory
- □ Administration/Policy

The 'CONTACT PERSONS table' (pertab) contains contact information on persons, including phone and email address. Persons are usually associated with organizations in the organization table, where the mail address is stored.

COLUMN DESCRIPTION Last name Title First name Position Country of residence Email address Telephone Organization link:instab

The 'PROJECTS table' (protab) collects data on programmes, projects, activities, plans, courses, etc. A flag column indicates the context and serves for analysis and filtering entries that belong to different priority activity areas.

COLUMN DESCRIPTION

Name

Acronym/code

Type

• Programme • Project • Activity • Workshop • Seminar • Symposium • Academic course • Short course • Not applicable

Status

• Proposed • Approved • On-going • Completed

Starting date (YYYY/MM)

Ending date (YYYY/MM)

Parent Project/Activity link:protab

Description

Co-ordinator link:pertab

Co-ordinating organization link:instab

Participants link:pertab

Participating organizations link:instab

Participating countries

Associated networks link:instab

Budget amount

Budget currency units

Budget type

• Annual • Total

(continued on next page)

Categories of funding sources

- □ Coordinating organization
- □ Participating organizations
- \square National Programme
- □ Associated networks

Funding sources link:instab

Scope

• Institutional • Local • National • Regional • International

Second GPA priority activities addressed

- □ Surveying and inventorying PGRFA
- □ Supporting on-farm management and improvement of PGRFA
- □ Assisting farmers in disaster situations
- □ Promoting in situ conservation of crop wild relatives and wild food plants
- □ Supporting targeted collecting of PGRFA
- □ Sustaining and expanding *ex situ* conservation
- □ Regenerating and multiplying *ex situ* accessions
- □ Expanding the characterization, evaluation and specific collection subsets
- □ Supporting plant breeding, genetic enhancement and base-broadening efforts
- □ Promoting diversification of crops and broadening crop diversity for sustainable agriculture
- Promoting development and commercialization of all varieties, primarily farmers' varieties/landraces and underutilized species
- □ Supporting seed production and distribution
- □ Building and strengthening national programmes
- □ Promoting and strengthening networks for PGRFA
- □ Constructing and strengthening comprehensive information systems for PGRFA
- Developing and strengthening systems for safeguarding diversity and minimizing erosion of PGRFA
- □ Building and strengthening human resource capacity
- □ Promoting and strengthening public awareness of the importance of PGRFA

The 'TAXA table' (taxtab) contains data on scientific plant names and authorities.

COLUMN DESCRIPTION

Name of taxon

Name of authority

Botanical family

Taxonomic status

Preferred taxon name link:taxtab

The 'REFERENCES table' (reftab) is used to collect data on references. The structure follows the BibTex standard in order to allow easier processing with existing BibTex tools, e.g. to produce lists of references in standard format. A reference can be an electronic document, such as a website on the Internet.

COLUMN DESCRIPTION Title Author Type of reference Article • Booklet • InBook • InProceedings • MastersThesis • PhDThesis • Manual • TechReport • Book • Proceeding • Catalogue • Misc • Unpublished • Web page • Draft law • Bill • Law • Regulation Journal Year of publication Volume Number Pages/Page range **Book title/Proceeding** Editor Edition Series Language Publisher Place ISBN ISSN WWW address Abstract Cross-reference link:reftab

ANNEX II Summative Narrative

The summative narrative complements the information provided in the course of the two reporting cycles. It allows NFPs to contextualize the information and data provided through the Reporting Format and to reflect upon key achievements, changes and trends and identify gaps and needs with regard to the different priority activities.

NFPs are encouraged to summarize for each of the 18 priority activities of the Second GPA:

- (i) key achievements during the reporting period;
- (ii) changes and trends during the reporting period;
- (iii) gaps and needs/possible remedial actions; and
- (iv) additional information that has not been captured by the above three sections.

The information should be provided online through the WIEWS reporting tool or in a Word document, which is available on the WIEWS portal.

Each section of the summative narrative includes guidance as to the information NFPs are requested to provide. NFPs are encouraged to add further information and details they consider necessary to provide a comprehensive picture of the state of conservation and sustainable use of PGRFA in their country.

Chapter 1. In situ conservation

Priority Activity 1: Surveying and inventorying PGRFA

Knowledge of existing crop diversity, its distribution and evolution over time, is an essential prerequisite for developing and implementing effective and efficient management strategies of crops and their genetic diversity. This knowledge is used to monitor changes in diversity and to aggregate information on individual species and populations.

Key achievements since January 2012

1.1. Please summarize the key achievements with respect to in situ (including on-farm) surveys/inventories of PGRFA undertaken.

Changes and trends since January 2012

Points to ponder:

- 1.2. Significant changes noted in geographical areas that have affected the threat status of species, and the specific drivers of changes in those areas.
- 1.3. Observations of any major change and/or trend in species richness (number of species) and species abundance (number of individuals per species) in your country.
- 1.4. The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture highlighted the need for increased funding, human resources, knowledge and coordination in surveying and inventorying PGRFA. You may wish to explain if it has been possible to address this over this time period and, if so, to what extent.

Gaps and needs as of December 2019

1.5. Please report major current gaps and needs with respect to surveying and inventorying in terms of species and area coverage, methodologies, coordination and organizational arrangements, knowledge, capacity and funding.

Additional relevant information, as applicable.

- 1.6. Actions taken (e.g. targeted collecting of threatened materials; revision of the management plan of the conservation areas to better address needs of PGRFA) in those cases where significant changes in the status of PGRFA were noted (see question 1.2 http://www.fao.org/pgrfa/answers/listByCountry?questionId=2).34 You can also make reference to relevant information provided under other Priority Activities and sections.
- 1.7. Priorities and strategic directions for future action that have been or are being defined following the identification of gaps/needs.

³⁴ Question 1.2 in Annex I. Indicate the species (taxon name) of crops, crop wild relatives and wild food plants surveyed/inventoried *in situ* (including on farm) during the reporting period and flag the species identified as threatened. For the crop species indicate the number of farmers' varieties/landraces surveyed/inventoried and those that have been identified as threatened.

Priority Activity 2: Supporting on-farm management and improvement of PGRFA

Plant diversity found on-farm constitutes a pivotal element in farmers' strategies for livelihood and development. The on-farm management and improvement of these PGRFA, including farmers' varieties/landraces and underutilized crops, enhance the resilience of cropping systems to biotic and abiotic stresses in changing environments.

Key achievements since January 2012

2.1. Please summarize the key achievements with respect to on-farm management of PGRFA and crop improvement activities.

Changes and trends since January 2012

Points to ponder:

- 2.2. Relevant changes and/or trends with respect to the number and type of activities supporting on-farm management of PGRFA and crop improvement as referred to in question 2.1 (see question 2.1 http://www.fao.org/pgrfa/answers/listByCountry?questionId=3).35 These may also include initiatives, such as market incentives, awareness-raising efforts and supportive policies.
- 2.3. Significant changes in the: (i) number, average age and gender composition of farmers that undertake on-farm management and improvement of PGRFA; and (ii) coverage of geographical areas where on-farm management and improvement of farmers' varieties/landraces and underutilized crops are practiced.
- 2.4. Changes in the number of farmers' varieties or landraces distributed to farmers by national or local genebanks, including community genebanks.
- 2.5. How farmers' responses to climate change have affected on-farm management and improvement of PGRFA, and which trends have been observed.

Gaps and needs as of December 2019

2.6. Please report major current gaps and needs with respect to on-farm PGRFA management and improvement in your country.

Additional relevant information, as applicable

- 2.7. Actions undertaken since January 2012 to address gaps and/or needs identified in the last report, including the development of policies and strategic directions.
- 2.8. Priorities set for supporting on-farm management and improvement of PGRFA over the next decade.

³⁵ Question 2.1 in Annex I. Indicate programmes/projects/activities carried out during the reporting period addressing onfarm management and improvement of PGRFA, and the number of farmers involved. Optionally, indicate the type of activities.

Priority Activity 3: Assisting farmers in disaster situations to restore crop systems

Natural disasters and civil strife often challenge the resilience of crop systems. Access to adequate quantities of good quality seed and planting materials of the crop varieties that farmers grow and prefer, also referred to as seed security, is one of the essential elements for the restoration and maintenance of crop systems immediately after disaster situations.

Key achievements since January 2012

3.1. Please summarize the key achievements with respect to assisting farmers in disaster situations to restore crop systems.

Changes and trends since January 2012

Points to ponder:

- 3.2. Changes in crop diversity that have been observed in crop systems affected by disasters after their restoration.
- 3.3. The improvement of mechanisms to assist farmers to restore crop systems after disaster situations during the period.
- 3.4. The impact that disasters have had on the availability of seed/planting materials and the crops/crop groups that were most affected.

Gaps and needs as of December 2019

3.5. Please report major current gaps and needs with respect to assisting farmers in disaster situations to restore crop systems in your country.

Additional relevant information, as applicable

- 3.6. If and how the country has taken remedial actions to address lack of seed/planting materials for local communities.
- 3.7. The role the national PGRFA conservation system has played in assisting farmers in your country to restore crop systems after disaster situations and how it was implemented.
- 3.8. The adequacy of existing policies for restoring crop systems and/or for seed security provisions after disaster situations, and if there is a clear role in restoration for the national genebank.

<u>Priority Activity 4: Promoting *in situ* conservation and management of crop wild relatives and wild food plants</u>

Natural ecosystems contain important PGRFA, including rare, endemic and threatened crop wild relatives and wild food plants. Ideally, crop wild relatives and wild food plants are conserved *in situ*, in protected areas, where they can evolve under natural conditions. However, often management plans for protected areas do not specifically address genetic diversity of these species and many protected areas are under threat of degradation and destruction.

Key achievements since January 2012

4.1. Please summarize the key achievements with respect to *in situ* conservation and management of crop wild relatives and wild food plants.

Changes and trends since January 2012

Points to ponder:

- 4.2. Relevant changes in the number of species and size of populations of crop wild relatives and wild food plants actively conserved *in situ*.
- 4.3. Trends in terms of number of *in situ* conservation sites with management plans that specifically address crop wild relatives and wild food plants and percentage of these sites out of the total (see question 4.1 <u>http://www.fao.org/pgrfa/answers/listByCountry?questionId=3</u>)?³⁶
- 4.4. Relevant changes in policies, legislation and procedures for establishing protected areas with active management plans for crop wild relatives and wild food plants, for collecting them and for better national coordination of these efforts.
- 4.5. Relevant changes in financial and technical/scientific capacity for the conservation and management of crop wild relatives and wild food plants.

Gaps and needs as of December 2019

4.6. Please report major current gaps and needs with respect to *in situ* conservation and management of crop wild relatives and wild food plants in your country.

Additional relevant information, as applicable

- 4.7. Key methodologies used for the *in situ* monitoring of crop wild relatives and wild food plants.
- 4.8. Collecting and conservation in genebanks of crop wild relatives and wild food plants preserved *in situ*, and level of accessibility of the information on the occurrence of crop wild relatives and wild food plants (*in situ* and *ex situ*) to interested stakeholders.
- 4.9. Systematic constraints and/or problems faced since January 2012 regarding the *in situ* conservation of crop wild relatives and wild food plants.
- 4.10. Remedial actions that have been undertaken to address these constraints and/or problems, if not already reported above.

³⁶ Question 4.1 in Annex I. Indicate the number of national *in situ* conservation sites and the number of those that had management plans addressing crop wild relatives and wild food plants at the end of the reporting period.

Chapter 2. Ex situ conservation

Priority Activity 5: Supporting targeted collecting of PGRFA

Imminent risk of loss, opportunities for use and gap filling of *ex situ* collections are the primary motivating forces to undertake targeted collecting of PGRFA. Although many major crops have generally been well collected, gaps still remain. Collections of crop wild relatives, wild food plants, regional, minor and underutilized crops are much less complete. Existing diversity of these plant groups can be particularly vulnerable to climate change even when adequately conserved and managed *in situ*/on-farm.

Key achievements since January 2012

5.1. Please summarize the key achievements with respect to targeted collecting of PGRFA, for example, reduction or elimination of identified gaps in *ex situ* collections, rescue of threatened species or prevention of genetic erosion for priority species through timely collecting, etc.

Changes and trends since January 2012

Points to ponder:

- 5.2. Significant changes and trends when comparing the findings on collecting that are reported in the current country report with those reported in the previous country report.
- 5.3. The increase of collecting and *ex situ* conservation of crop wild relatives and minor crops for climate change preparedness, which was highlighted as a need in the Second Report.

Gaps and needs as of December 2019

5.4. Please report major current gaps and needs with respect to targeted collecting in your country.

Points to ponder:

- 5.5. The technical capacity currently available to undertake targeted collecting of crop wild relatives and wild food plants.
- 5.6. The collaboration among the national genebank(s), authorities of *in situ* protected areas and academic institutions in collecting crop wild relatives and wild food plants that are/might be affected by climate change.

Additional relevant information, as applicable

- 5.7. Major gaps, constraints or problems faced during the implementation of targeted collecting in your country since 2012.
- 5.8. Partner countries and/or regional or international institutes that have been involved in germplasm collecting in your country since 2012.

Priority Activity 6: Sustaining and expanding ex situ conservation of germplasm

Driven by an increasing demand for diversification, it is critical to expand *ex situ* conservation of underutilized crops, wild food species, forages and crop wild relatives, which are often more difficult to conserve *ex situ* than cereals or legumes. This Priority Activity aims to ensure the development of a rational, efficient, goal-oriented and sustainable system of *ex situ* conservation and use for both seed and vegetatively propagated species.

Key achievements since January 2012

6.1. Please summarize the key achievements with respect to overall *ex situ* conservation of germplasm in the country, including those that are 'outside' the direct scope of the national PGRFA programme (e.g. botanic gardens; museum collections).

Changes and trends since January 2012

Points to ponder:

- 6.2. Significant changes and trends when comparing the current findings of *ex situ* conservation with those reported in the Second Report and/or with those mentioned in the Second GPA first reporting cycle and SDG indicator 2.5.1.
- 6.3. Significant changes that you have observed with respect to the 'type of storage' of your accessions, i.e. medium-term seed storage, long-term seed storage, field genebank, *in vitro* collection, cryopreserved accessions, DNA samples.
- 6.4. Significant changes that you have observed with respect to the levels of safety duplication and unintended duplication of the germplasm conserved. The Second Report stated that, while there are still high levels of duplication globally for a number of crops, especially major crops, much of this is unintended and many crops and important collections remain inadequately safely duplicated. This is most relevant to vegetatively propagated species and species with recalcitrant seeds.

Gaps and needs as of December 2019

Points to ponder:

- 6.5. Major current gaps and needs with respect to ex situ conservation in your country.
- 6.6. Needs and priorities in terms of capacity for *ex situ* conservation in your country, e.g. rationalization of your collections through regional and international collaboration, including: the possibility of sharing facilities; sharing the burden of the costs of conservation; improved germplasm management; low-cost conservation technologies; and development of pathogen-tested collections.

Additional relevant information, as applicable

- 6.7. Serious issues or constraints with the *ex situ* conservation in your country since 2012 and remedial actions undertaken.
- 6.8. Efforts undertaken to achieve complementarity between the on-farm management and *in situ* conservation of PGRFA on the one side and the *ex situ* conservation on the other.
- 6.9. Efficiency and efficacy of your genebank documentation and information system to manage your conserved germplasm and participation in a regional information system.
- 6.10. Areas of *ex situ* conservation for which you have difficulty in following the guidelines for conservation activities of the Genebank Standards for Plant Genetic Resources for Food and Agriculture.³⁷

³⁷ FAO. 2014. Genebank Standards for Plant Genetic Resources for Food and Agriculture. Rev. ed. Rome. Available online from: <u>http://www.fao.org/3/a-i3704e.pdf</u>

Priority Activity 7: Regenerating and multiplying ex situ accessions

Even under optimum *ex situ* storage conditions, seeds eventually require regeneration to ensure their continued viability. The focus of this Priority Activity is on the regeneration and multiplication of *ex situ* accessions in order to satisfy needs for conservation, distribution and safety duplication.

Key achievements since January 2012

7.1. Please summarize the key achievements with respect to regeneration and multiplication of *ex situ* accessions.

Changes and trends since January 2012

7.2. Significant changes and trends when comparing the findings on regeneration/ multiplication in the present Country Report with those reported in the First and/or Second Report.

Gaps and needs as of December 2019

7.3. Please report major current gaps and needs with respect to regenerating and multiplying *ex situ* accessions in your country, including for those specific crops or groups of crops that are more problematic to regenerate/multiply in your country facilities.

Additional relevant information, as applicable

- 7.4. The adequacy of the monitoring procedure or system in place to deal with viability and seed stock, two key pre-requisites for safe and secure conservation. This includes the monitoring frequency of the quality (viability, health) and quantity (number of accessions and number of seed/plants/plantlets per accession) of your ex situ collection/s and the adequacy of the genebank information management system in place to link quality (viability, health) and quantity (number of seed/plants/plantlets per accession) data with the need for regeneration and multiplication.
- 7.5. Management practices followed to prevent genetic erosion in your collections during regeneration and multiplication.
- 7.6. Collaboration with other genebanks (in- and outside the country), for instance within the framework of a regional or global network, in view of the fact that regenerating and multiplying germplasm require adequate environmental conditions that may not coincide with the local ones.
- 7.7. Existence of an 'emergency plan' in the event that regeneration/multiplication cannot be timely undertaken to prevent loss of accessions or significant diversity within accessions.
- 7.8. Regeneration/multiplication priorities defined for the next decade.

Chapter 3: Sustainable use of PGRFA

<u>Priority Activity 8: Expanding the characterization, evaluation and further development of specific collection subsets to facilitate use</u>

Improved characterization and evaluation can encourage greater and more efficient use of collections. This Priority Activity addresses the improvement and facilitation of the exchange of, and access to, quality characterization and evaluation data across genebank collections, including through national, regional and global information systems.

Key achievements since January 2012

8.1. Please describe the key achievements in the characterization (morphological and molecular) and evaluation of PGRFA held *ex situ* and the development of trait-specific subsets.

Changes and trends since January 2012

- 8.2. Major changes and trends with respect to the characterization and evaluation of germplasm of the *ex situ* collections conserved in the country, including the number of descriptors used and/or traits evaluated.
- 8.3. Major changes and trends in the development of trait-specific subsets.

Gaps and needs as of December 2019

8.4. Please report major current gaps and needs with respect to characterization, evaluation and distribution of germplasm accessions in your country, also highlighting crops or genera collections with insufficient characterization data available.

Additional relevant information, as applicable

- 8.5. The status of characterization and evaluation of relevant species/crops, taking into account crop wild relatives and neglected and underutilized species.
- 8.6. The accessibility to newly generated data on characterization/evaluation and the improved use of germplasm resulting from the identification of collections' subsets.
- 8.7. The combination of characterization with regeneration and multiplication activities and the collaboration with plant breeders, pathologists, virologists, etc. or other institutes to evaluate germplasm.
- 8.8. Molecular techniques applied to characterize and/or evaluate collections, define collection sub-sets and the degree of molecular characterization of the collections and/or their subsets compared with the degree of their morphological characterization.
- 8.9. Facilitating the use of germplasm in your country and general issues or constraints that affect the level of use of the conserved genetic resources in the genebanks of your national programme.
- 8.10. The impact of your active participation in the Multilateral System of Access and Benefit Sharing (MLS) of the International Treaty on the distribution of germplasm.
- 8.11. Gaps and needs with regard to the characterization, evaluation and distribution of germplasm accessions, as reported in the previous country report, addressed.
- 8.12. Priorities defined for the next decade.

<u>Priority Activity 9: Supporting plant breeding, genetic enhancement and base-broadening efforts</u>

Germplasm collections can be used both to identify specific alleles that are useful for developing varieties adapted to new conditions and needs, and to broaden the overall genetic base of breeding programmes. Strengthened human capacity and infrastructure are necessary for effective pre-breeding and breeding programmes whose ultimate aim is to deliver varieties with the enhanced tolerance to biotic and abiotic stresses needed for adaptation to climate change, for improved nutrition and for supporting diversification.

Key a	chievements since January 2012
9.1.	Please summarize the key achievements with respect to plant breeding, genetic enhancement and base-broadening efforts in your country and provide one or two success stories to illustrate them.
Chang	ges and trends since January 2012
9.2.	Major changes and trends with respect to plant breeding, genetic enhancement and base broadening efforts in your country.
Point	s to ponder:
9.3.	Changes occurred when comparing the present situation of number of crops with active public and/or private breeding activities and the number of breeding activities oriented to small-scale farmers with the situation reported in the previous country report and/or in the Second GPA first reporting cycle.
9.4.	Trends in human resources capacity for breeding in the public and private sectors, the number of accessions used in breeding activities and the number of improved varieties resulting from these.
Gaps	and needs as of December 2019
9.5.	Please report major current gaps and needs with respect to plant breeding, genetic enhancement and base-broadening activities in your country.
Additi	ional relevant information, as applicable
Point	s to ponder:
9.6.	Levels of public and/or private breeding capacity and activities to address the demands of farmers, and dependency on foreign breeders and breeding institutions.
9.7.	The role of genebanks in your country with respect to breeding programmes in general, the degree of their involvement in activities and/or contribution in term of genetic diversity provided to the breeding programmes.
9.8.	Participation in any national/regional projects or collaborative arrangements on plant breeding, genetic enhancement and/or base broadening for key crops or crop groups.
9.9.	Pre-breeding was recognized in the Second Report as an important adjunct to plant breeding, as a way to introduce new traits from non-adapted populations and wild relatives. Has this been a key activity for your country? If not, how is the breeding programme widening its genetic base?
9.10.	Extent of application of plant biotechnology by breeding programmes in your country.
9.11.	In order to increase varietal adoption, breeders are requested to work closely with different actors of the production and transformation chain to assess their needs and requirements in order to set breeding priorities. Is there a process for setting breeding priorities in your country, and if so describe?
9.12.	Priorities established for specific crops or group of crops for the next decade.

<u>Priority Activity 10: Promoting diversification of crop production and broadening crop diversity</u> <u>for sustainable agriculture</u>

Agricultural systems that depend too heavily on a limited number of crop varieties and species lack resilience and can be prone to yield losses due to pests and diseases. New challenges to agriculture point to the need to introduce more crop and species diversity into production systems to support agricultural sustainability.

Key ac	Key achievements since January 2012				
10.1.	Please summarize the key achievements with respect to diversification of crop production and broadening crop diversity for sustainable agriculture and provide one or two success stories to illustrate them.				
Chang	ges and trends since January 2012				
10.2.	Major changes and trends with respect to the present situation of crop diversification with				

- 10.2. Major changes and trends with respect to the present situation of crop diversification with the situation reported in the previous country report and/or in the Second GPA first reporting cycle.
- 10.3. Changes in the levels of cultivated diversity over the reporting period, especially as a consequence of climate change. Note: the Second Report mentioned that more attention was being paid to increasing the levels of genetic diversity within production systems as a means of reducing risk, particularly in the light of the predicted effects of climate change.

Gaps and needs as of December 2019

10.4. Report major current gaps and/or needs that exist in the country with respect to diversification and broadening crop diversity.

Additional relevant information, as applicable

- 10.5. Promotion of diversification of crop production and/or broadening crop diversity for sustainable agriculture under the national PGRFA strategy.
- 10.6. Participation and role of your genebank in regional or global projects addressing diversification of crop production and broadening crop diversity for sustainable agriculture.
- 10.7. Public and NGO involvement in programmes promoting diversity.
- 10.8. Main drivers for promoting crop diversification in the country.
- 10.9. Priorities and/or targets established with respect to crops and/or regions in the country for diversification and/or broadening the genetic diversity either in the past or for the future.

<u>Priority Activity 11: Promoting development and commercialization of all varieties, primarily</u> <u>farmers' varieties/landraces and underutilized species</u>

A few major crops predominate in commercial production systems. However, many more species, including farmers' varieties/landraces of both major and minor crops, are used by farmers and indigenous and local communities to meet local demands for food, fibre and medicine. In order to capture the potential market value of farmers' varieties/landraces and underutilized species, there is a need to better integrate the efforts of individuals and institutions with a stake in the different stages of the production chain.

Key achievements since January 2012

11.1. Please summarize the key achievements with respect to development and commercialization of farmers' varieties/landraces and underutilized species and provide one or two success stories to illustrate them.

Changes and trends since January 2012

Points to ponder:

- 11.2. Significant changes and trends over the reporting period related to national policies that promote the development and commercialization of farmers' varieties and underutilized species (see question 11.1 <u>http://www.fao.org/pgrfa//answers/listByCountry?questionId=25</u>).
- 11.3. Significant changes and trends in the development and commercialization of farmers' varieties/landraces.
- 11.4. Significant changes or trends in the development and commercialization of underutilized species.

Gaps and needs as of December 2019

11.5. Please report major current gaps and needs with respect to the development and commercialization of farmers' varieties and underutilized species. For example, gaps in: documenting, characterizing or evaluating PGRFA; utilization in crop breeding; extension; post-harvest processing; in marketing; working with traditional knowledge, etc.

Additional relevant information, as applicable

- 11.6. Available data on the overall economic importance of farmers' varieties/landraces and underutilized species in your country.
- 11.7. Effectiveness of the existing policies/legal framework in promoting farmers' varieties/landraces and underutilized species and specific requirements for the commercialization of varieties for these crops existing in the country.
- 11.8. The three underutilized species in your country with the biggest development and commercialization potential.
- 11.9. Serious constraints or problems encountered with regard to the development and commercialization of farmers' varieties/landraces and underutilized species and remedial actions undertaken.
- 11.10. Priorities established for the next decade.

Priority Activity 12: Supporting seed production and distribution

Effective seed systems must be in place to ensure that farmers adopt the most suitable varieties and use seed and planting materials in adequate quantity and quality, in a timely manner and at reasonable costs. Integrated approaches that strengthen existing seed systems are needed in order to produce and make available quality seed of crop varieties that are useful for diverse farming systems.

Key achievements since January 2012

12.1. Please summarize the key achievements with respect to seed production and distribution in your country.

Changes and trends since January 2012

12.2. Significant changes and trends over the reporting period in:

- the main species planted in the country;
- the number of newly released varieties (Indicator 40);
- the number of active seed production enterprises (Indicator 41);
- the amount of quality seed production in the formal sector and the percentages of cropping areas planted with quality seed (Indicator 43);
- \circ the vulnerability of cropping systems (Indicator 42); and
- the seed policies and laws (Indicator 44).

Gaps and needs as of December 2019

- 12.3. Please report major current gaps and needs that exist in the current seed production and distribution system(s) with regard to:
 - o the availability of good quality seed of a wide range of varieties and crops; and
 - the national seed policies and laws.

Additional relevant information, as applicable

- 12.4. The co-existence of formal and informal seed systems in the country.
- 12.5. Changes and adaptations of the legal framework (seed policy, law or regulatory documents) to promote crop diversification in production systems.
- 12.6. Levels of adoption of released improved varieties by farmers.

Chapter 4. Building sustainable institutional and human capacity

Priority Activity 13: Building and strengthening national programmes

Effective national PGRFA programmes provide the enabling policies, support strategies and concrete action plans that are necessary for setting well-defined goals and clear priorities, allocating resources, distributing roles and responsibilities and identifying and strengthening linkages among all relevant stakeholders.

Key achievements since January 2012

13.1. Please describe the key achievements in building and strengthening national programmes including development, implementation and harmonization of policy and institutional framework(s).

Changes and trends since January 2012

- 13.2. Major changes with regard to the national programme(s), including its(their) structure, composition, etc.
- 13.3. Changes in collaboration among institutions, private enterprises and entities from other sectors (e.g. environment, forestry, education, etc.) under the national programme, including linkages to, or support by, regional or international institutions to facilitate regular national planning, priority setting and coordinated fund-raising.

Gaps and needs as of December 2019

13.4. Please report major current gaps and needs with respect to developing or strengthening the national programme.

Additional relevant information, as applicable

- 13.5. The Second Report stated that many countries still lack national strategies and/or action plans for the management of diversity, or if they have them, they do not fully implement them. How has this been addressed in your country?
- 13.6. The Second Report called for greater attention to be paid in many countries to the development of appropriate, non-conflicting and complementary national policies and legislation relating to the conservation, exchange and use of PGRFA, including such areas as phytosanitary regulations, intellectual property protection, farmers' rights and biosafety taking into account the needs and concerns of all stakeholders. How has this been addressed in your country?
- 13.7. Priorities established for strengthening national PGRFA programmes in the next decade.

Priority Activity 14: Promoting and strengthening networks for PGRFA

Networks facilitate the exchange of PGRFA and provide a platform for information sharing, technology transfer, scientific discussion and research collaboration. Networks can help in setting priorities for action and developing policies, as well as backstopping national programmes.

Key achievements since January 2012

14.1. Please summarize the key achievements with respect to promoting and strengthening networks for PGRFA, including thematic networks.

Changes and trends since January 2012

14.2. Major changes and trends when comparing the present situation of your participation in regional PGRFA and crop improvement networks with the situation reported in the previous country report and/or in the Second GPA first reporting cycle.

Gaps and needs as of December 2019

14.3. Please report major current gaps and needs that have been observed with respect to national, regional or global PGRFA and improvement networks including issues affecting your country's effective participation.

Additional relevant information, as applicable

Point to ponder:

14.4. Recent experiences with regional PGRFA and crop improvement networks, their effectiveness and major benefits derived from them.

<u>Priority Activity 15: Constructing and strengthening comprehensive information systems for</u> <u>PGRFA</u>

Reliable information can facilitate transparent and rational decision-making in the conservation and sustainable use of PGRFA. Information management plays a pivotal role in PGRFA conservation and utilization. It involves collection, processing and dissemination of information through national, regional or global platforms. A comprehensive information system should recognize traditional indigenous knowledge and integrate it with modern scientific knowledge to develop the best approach to conservation and use of PGRFA diversity preserved both *ex situ* and *in situ*.

Key achievements since January 2012

15.1. Please summarize the key achievements with respect to constructing and strengthening comprehensive information systems for PGRFA.

Changes and trends since January 2012

- 15.2. Major changes and trends when comparing the current status of your information systems for PGRFA with the situation reported in the previous Country Report and/or in the Second GPA first reporting cycle.
- 15.3. Major changes with regard to the number of: (i) crop wild relatives and wild food plants *in situ;* (ii) farmers' varieties/landraces on-farm; (iii) accessions *ex situ* and; (iv) released varieties, made publicly available through information systems.

Gaps and needs as of December 2019

15.4. Please report major current gaps and needs with respect to comprehensive information systems for PGRFA addressing crop wild relatives and wild food plants *in situ*, farmers' varieties/landraces on-farm, accessions *ex situ* and released varieties.

Additional relevant information, as applicable

- 15.5. Existence of different information systems for PGRFA, addressing crop wild relatives and wild food plants *in situ*, farmers' varieties/landraces on-farm, accessions *ex situ* and released varieties, in your country, links among them and provision of access through a 'one entry point'.
- 15.6. Public accessibility of the information included in your national PGRFA information system(s).
- 15.7. Considerations and/or suggestions for possible improvements derived from experiences contributing information to publicly accessible international and/or regional information systems.
- 15.8. Progress in data standardization to improve data and germplasm exchange at national and global levels.
- 15.9. Remedial actions undertaken to deal with gaps, needs or constraints to operate effective information systems.
- 15.10. Priorities established for the next decade.
- 15.11. Major constraints faced with recording/obtaining and documenting pedigree and descriptive information of released varieties in your country.

<u>Priority Activity 16: Developing and strengthening systems for monitoring and safeguarding</u> genetic diversity and minimizing genetic erosion of PGRFA

Erosion of PGRFA occurs in farmers' fields and in nature, but can also occur in *ex situ* collections. The concept of systems for monitoring and safeguarding genetic diversity and minimizing genetic erosion embraces any activity or mechanism that directly or indirectly contributes to the conservation and continued use of PGRFA, including surveying/inventorying systems, monitoring systems, conservation systems and information systems.

Key achievements since January 2012

16.1. Please summarize the key achievements with respect to developing and strengthening systems for monitoring and safeguarding genetic diversity and minimizing genetic erosion of PGRFA.

Changes and trends since January 2012

16.2. Major changes and trends when comparing the present situation of your monitoring systems with the situation reported in the previous Country Report and/or in the Second GPA first reporting cycle.

Gaps and needs as of December 2019

16.3. Please report major current gaps and needs with respect to the development and strengthening of monitoring systems for genetic diversity and minimization of genetic erosion.

Additional relevant information, as applicable

- 16.4. General comments on the implementation of this Priority Activity in your country, in particular with respect to crop wild relatives and wild food plants.
- 16.5. Any regional or global collaboration in the field of monitoring PGRFA established over the reporting period.
- 16.6. Examples of indicators developed and baselines established for monitoring genetic erosion in your country.

Priority Activity 17: Building and strengthening human resource capacity

Effective and efficient PGRFA conservation and use are very dependent on human resource capacity and its continuous development. Capacity-building activities on PGRFA entail interdisciplinary education and training in a range of interrelated subjects, which may result from national, regional or international initiatives.

Key achievements since January 2012

17.1. Please summarize the key achievements with respect to building and strengthening human resource capacity.

Changes and trends since January 2012

17.2. Major changes and trends when comparing the current status of human resource capacity with the situation reported in the previous Country Report and/or in the Second GPA first reporting cycle.

Gaps and needs as of December 2019

17.3. Please report major current gaps and needs in your country with respect to building and strengthening human resource capacity.

Additional relevant information, as applicable

- 17.4. Efforts to address capacity building and training needs for the main PGRFA areas.
- 17.5. Capacity building programmes organized under the national PGRFA programme and main technical areas covered.
- 17.6. Participation of staff from the national PGRFA programme (including technicians) in advanced educational programmes and/or training activities (other than those mentioned above) and technical areas addressed.
- 17.7. Availability of and accessibility to adequate training/capacity building programmes.
- 17.8. Collaboration with national universities and research institutes to build or strengthen the capacity of your staff.
- 17.9. Priorities established for the next decade.

Priority Activity 18: Promoting and strengthening public awareness of the importance of PGRFA

Awareness raising is key to mobilizing public opinion and to generating and sustaining appropriate political action nationally, regionally and internationally. Public awareness programmes have to be carried out on a continuous basis to ensure adequate funding for infrastructure improvement and for human resource development in the national PGRFA programmes.

Key achievements since January 2012

18.1. Please summarize the key achievements with respect to public awareness of the importance of PGRFA and highlight the main public awareness initiatives undertaken as well as the most important products developed.

Changes and trends since January 2012

18.2. Major changes and trends when comparing the present situation of public awareness with the situation reported in the previous country report and/or in the Second GPA first reporting cycle.

Gaps and needs as of December 2019

18.3. Please report major current gaps and/or needs that exist in the country with respect to public awareness creation of the value of PGRFA and their national programme, including the appropriate management of crop wild relatives and wild food plants, crop diversification and nutrition, adaptation of crops to changing environments, to reduce agricultural environmental impact and meet future production challenges, etc.

Additional relevant information, as applicable

- 18.4. The Second Report states that raising public awareness of local crops and varieties can help build a broader base of support, through personal contacts, group exchanges, diversity fairs, poetry, music and drama festivals and the use of local and international media. Has this occurred in your country? Please elaborate.
- 18.5. Priorities established for the next decade.