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منظمة  
الأغذية والزراعة  
للأمم المتحدة

# COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

## Item 5.3 of the Provisional Agenda

### Sixteenth Regular Session

Rome, 30 January - 3 February 2017

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

### TABLE OF CONTENTS

	Paragraphs
I. Introduction .....	1- 2
II. Background .....	3 - 5
III. Lessons learnt from the first assessment of the implementation of the Second Global Plan of Action .....	6 - 8
IV. Proposed revised timeline and reporting simplification.....	9 - 12
V. Reporting through WIEWS.....	13 - 14
VI. Reporting on Sustainable Development Goals, Target 2.5 .....	15 - 16
VII. Proposed revised list of thematic studies .....	17
VIII. Revised provisional budget .....	18 - 20
IX. Guidance sought.....	21
<i>Appendix I:</i> Proposed revised timeline for monitoring the implementation of the Second GPA and preparing the Third Report	
<i>Appendix II:</i> Proposed core activities and revised provisional budget for monitoring the implementation of the Second GPA and preparing the Third Report (2016 - 2023)	
<i>Appendix III:</i> Proposed revised list of thematic studies	

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## I. INTRODUCTION

1. The Commission on Genetic Resources for Food and Agriculture (Commission), at its last session, considered the preparation of *The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (Third Report). It endorsed the outline<sup>1</sup> as well as a timeline for the Third Report and took note of the provisional budget. The Commission also welcomed the full integration of the preparation of the Third Report with the monitoring process for the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA). It recommended reviewing the list of thematic studies following the assessment of the implementation of the Second GPA at its next regular session.

2. In the light of recent experience with country reporting on the implementation of the Second GPA, the present document provides a new monitoring scheme and a revised timeline for both, the monitoring of the implementation of the Second GPA and the preparation of the Third Report. The proposed new monitoring scheme will simplify routine reporting and give countries more time to report on the implementation of the Second GPA. The proposed new timeline would result in the postponement of the presentation of the draft Third Report to the Commission by two years; the draft Third Report would be presented to the Nineteenth, rather than the Eighteenth Session of the Commission. The present document provides, in addition, a revised list of thematic background studies to be prepared in support of the Third Report.

## II. BACKGROUND

3. 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<sup>2</sup>. The full version of the report was published in 1997<sup>3</sup>. *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (Second Report) was presented to the Commission in 2009 and published by FAO in 2010. The Second Report updates the First Report and focuses on changes and developments that have occurred since 1996. It gives an assessment of the status and trends of plant genetic resources for food and agriculture (PGRFA) and identifies the most significant gaps and needs.

4. Both reports attracted significant attention and generated global policy responses. In response to the findings of the First Report, the Commission negotiated and 150 countries attending the Fourth International Technical Conference on Plant Genetic Resources in 1996 adopted the rolling Global Plan of Action on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture (GPA). In response to the Second Report, the Commission revised the GPA and the FAO Council, on behalf of the FAO Conference, adopted the Second GPA, in 2011.<sup>4</sup> The Second GPA is a framework, guide and catalyst for action at national, regional and international levels to create an efficient system for the conservation and sustainable use of PGRFA, including seed systems. It provides a comprehensive and flexible tool for countries to adopt policies and programmes for the conservation and sustainable management of PGRFA, and calls for strengthening capacities and linkages among all stakeholders through a combination of appropriate policies, use of scientific information, farmers' knowledge and joint action. Updating the rolling Global Plan of Action also strengthens its role as a supporting component of the International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty).

5. The Commission agreed in 2007 on the preparation of the Third Report and, at its last session, endorsed an integrated timeline both for the preparation of the Third Report and for two assessments of the implementation of the Second GPA to be prepared by 2016/17 and 2020/21, respectively. The Commission also agreed on 63 indicators which provide the basis for 51 questions National Focal Points (NFPs) need to respond to, through the WIEWS Reporting System, for the preparation of the

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<sup>1</sup> CGRFA-15/15/Report, *Appendix F*.

<sup>2</sup> ITCGR/96/REP, paragraphs 13-14.

<sup>3</sup> <ftp://ftp.fao.org/docrep/fao/meeting/015/w7324e.pdf>

<sup>4</sup> CL 143/REP, paragraph 43.

two assessments of the implementation of the Second GPA.<sup>5</sup> In addition, the Commission agreed that NFPs provide expert judgements (NFP ratings) on the level of implementation to calculate three Higher-order Composite Indices (HCIs) which measure progress against the three PGRFA targets adopted by the Commission in 2013.<sup>6</sup>

### III. LESSONS LEARNT FROM THE FIRST ASSESSMENT OF THE IMPLEMENTATION OF THE SECOND GLOBAL PLAN OF ACTION

6. The period under assessment for the first assessment of the implementation of the Second GPA spanned from 1 January 2012 to 30 June 2014. The results of the first assessment of the implementation of the Second GPA are contained in the document *Summary assessment of the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture 2012-2014*.<sup>7</sup> A more detailed assessment is provided in the document *Assessment of the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture 2012-2014*.<sup>8</sup>

7. As of March 2016, only 43 NFPs had completed the online Reporting Format<sup>9</sup> (answering on average 58 percent of the questions). For the question on PGRFA secured in either medium or long term conservation facilities associated with indicators 19, 20 and 21, data on about 3.6 million accessions were gathered from 71 countries and 12 international centres.

8. The relatively small number of countries that provided information during the first monitoring round and the experience gained during the first assessment, indicate that NFPs and other respondents require more time and, at least initially, a considerable amount of assistance in providing detailed data on the implementation of the Second GPA.

### IV. PROPOSED REVISED TIMELINE AND REPORTING SIMPLIFICATION

9. A higher number of country reports is needed to be able to draw conclusions as to the global state of implementation of the Second GPA and the state of the world's PGRFA. It is therefore important to give countries more time for reporting and to offer NFPs for the first monitoring round the option of simplified reporting. A proposed revised timeline is contained in Table 1<sup>10</sup>. A more detailed timeline is contained in *Appendix I*.

#### (i) *Extension of reporting deadline for first monitoring period*

10. NFPs had to complete their report for the first implementation assessment by 30 November 2015. As mentioned above, as of March 2016, only 43 NFPs had submitted data. To enable a larger number of NFPs to complete the first monitoring round (spanning from 1 January 2012 to 30 June 2014), the Working Group recommended that the Commission extend the deadline for first-round reports to 31 December 2017.<sup>11</sup>

#### (ii) *Optional simplified reporting*

11. Countries should report through the WIEWS Reporting System by using the Reporting Format. However, it is proposed that NFPs who do not see themselves in a position to provide such detailed information, are given the option to only provide NFP ratings. The NFP ratings will allow FAO to update the HCIs for 2012-2014 and report them to the Working Group in 2018 and the Commission in 2019.

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<sup>5</sup> CGRFA-15/15/Report, paragraph 17.

<sup>6</sup> CGRFA-14/13/Report, paragraph 23.

<sup>7</sup> CGRFA-16/17/Inf.17.1.

<sup>8</sup> CGRFA-16/17/Inf.17.2.

<sup>9</sup> CGRFA-15/15/Inf.9

<sup>10</sup> CGRFA/WG-PGR-8/16/REPORT

<sup>11</sup> CGRFA-16/17/15, paragraph 18.

<b>Table 1: Proposed revised timeline for monitoring the implementation of the Second GPA and preparing <i>The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture</i></b>					
Reports to the Working Group and the Commission	Information sources	Timeline			
		WG-PGR-8 2016 CGRFA-16 2017	WG-PGR-9 2018 CGRFA-17 2019	WG-PGR-10 2020 CGRFA-18 2021	WG-PGR-11 2022 CGRFA-19 2023
Second GPA implementation assessment (2012-2014)	Data provided by National Focal Points (NFP) or other sources				
Report on feasibility of composite indices for PGRFA					
Second GPA implementation assessment (2015-2019) Draft Third Report	Data provided by NFPs or other sources on the basis of agreed indicators, Country Reports, thematic studies and other relevant sources				

(iii) *Extension of second monitoring period/ Postponement of Country Reports and Third Report*

12. Originally, NFPs were supposed to submit their second monitoring reports (on the period spanning from July 2014 to December 2016) and the Country Report for the Third Report, by June 2018. To reduce the reporting burden of NFPs, it is suggested to extend the second monitoring period by three years until December 2019. The period under assessment for the second monitoring period would thus span from July 2014 to December 2019. NFPs would then be given 12 months, i.e. until December 2020, to provide information on their implementation of the Second GPA using the Reporting Format and to prepare, by the same deadline, Country Reports in line with Guidelines to be reviewed and endorsed by the Commission at its Seventeenth Regular Session in 2019. Subsequently, FAO would prepare the Third Report and provide a first draft to the Eleventh Session of the Working Group in 2022 and the Commission's Nineteenth Session in 2023.

## V. REPORTING THROUGH WIEWS

13. WIEWS is the platform made available by FAO for the periodic preparation of reports on the state of the world's PGRFA. Since its establishment, WIEWS has been one key component of the FAO Global System for the Conservation and Sustainable Use of PGRFA. In 2000, WIEWS was among the first databases of FAO that provided access to officially appointed users for reporting and updating through the Internet.

14. With the adoption of the Second GPA, WIEWS provides the platform for the new monitoring and reporting framework adopted by the Commission. The WIEWS Reporting System facilitates country reporting on the implementation of the Second GPA and the preparation of the Third Report. All the information will be published through a new WIEWS portal, an intuitive interface which is currently under development.

## VI. REPORTING ON SUSTAINABLE DEVELOPMENT GOALS, TARGET 2.5

15. As noted by the Working Group, the Second GPA monitoring process is also relevant for reporting on Sustainable Development Goals (SDGs) Target 2.5 and provides an opportunity to raise the profile of PGRFA conservation. Target 2.5 reads:

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

16. The Commission's framework for monitoring the implementation of Second GPA will allow FAO to assist countries in monitoring activities contributing to the implementation of SDG target 2.5. As a custodian of the related indicator, FAO will strengthen partnerships with other international agencies and relevant stakeholders to support country implementation of the SDGs, including for collecting and analysing data. Based on information received from NFPs, FAO will be in a position to report, upon request, on the *ex situ* holdings to the UN Statistical Commission.

## VII. PROPOSED REVISED LIST OF THEMATIC STUDIES

17. Thematic studies will be prepared in 2019/2020. A list of thematic studies, as revised in response to the Commission's request, is given in *Appendix III*. The Working Group noted that the topics identified will be subject to a continuing process of review by the Commission to ensure their relevance to the Third Report.

## VIII. REVISED PROVISIONAL BUDGET

18. The revision of the timeline requires adjustments of the provisional budget of the Third Report. Monitoring the implementation of the Second GPA and preparing the Third Report will require substantial human and financial resources. In addition to upgrading, maintaining and moderating WIEWS, simplifications to the Reporting Format will require technical adjustments to WIEWS and its Reporting System for which extra-budgetary resources will be needed. Financial support will also be required to enable the full participation of developing countries in the process, including for organizing national stakeholder consultations, assessing the implementation of the Second GPA and preparing Country Reports.

19. For the preparation of the Third Report, it is estimated that about USD 3 040 000 will be required (see *Appendix II*), approximately USD 1 972 000 in extra-budgetary funds and USD 1 068 000 from FAO's Regular Programme. The Regular Programme contributions given for the next biennium and beyond are indicative and subject to the approval of the Programme of Work and Budget by the FAO Conference. The budget would support the monitoring of the implementation of the Second GPA as well as the preparation of Country Reports in 120 developing countries, the production of five thematic studies and the publication of the Third Report in all official languages. A lack of funding would put at risk or delay the preparation of the Third Report.

20. The total cost of the preparation and publication of the First Report amounted to USD 5.5 million and was fully supported with extra-budgetary resources received from France, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United States of America<sup>12</sup>. For the Second Report, the total cost was about USD 3.8 million of which USD 2.3 million was provided as extra-budgetary resources, including contributions from Canada, Italy, Japan, the Netherlands, Norway, and Spain<sup>13</sup>.

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<sup>12</sup> *The State of the World's Plant Genetic Resources for Food and Agriculture*. Preface endnote 10, page 8.

<sup>13</sup> CGRFA/WG-PGR-3/05/3, paragraph 20.

## IX. GUIDANCE SOUGHT

21. The Commission may wish to:

- Review the revised timeline for the monitoring of the implementation of the Second GPA and the preparation of *The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture (Appendix I)* with a view to endorse it;
- Request FAO to adjust the list of thematic studies, as necessary and appropriate, to ensure the relevance of the thematic studies;
- Request the Secretariat to consult the Working Group and the Commission on the thematic studies before work commences;
- Invite donors to provide the necessary extra-budgetary resources to support the preparation of the Third Report, ensure the participation of developing countries, in particular least developed countries, in the preparation of implementation assessments and Country Reports, and to facilitate the preparation of thematic studies and the publication of the Third Report;
- Encourage FAO to support countries, upon their request, in assessing their national reporting obligations and improving data and capacity to report on SDG indicator 2.5.1; and
- Request the Secretariat to continue collaborating with the Statistical Division of FAO and to inform the Commission of any relevant developments, including the final decisions taken by the UN Statistical Commission on the global reporting mechanism for the SDGs.

**APPENDIX I**  
**PROPOSED REVISED TIMELINE FOR MONITORING THE IMPLEMENTATION OF THE SECOND GPA**  
**AND PREPARING THE THIRD REPORT**

2017												2018											
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>CGRFA-16</b>									<b>GB-7</b>								<b>WG-9</b>						
<b>GPA2 Monitoring (reporting period 2012-14) extended</b>												<b>Country report guidelines</b>											
2019												2020											
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>CGRFA-17</b>									<b>GB-8</b>								<b>WG10</b>						
												<b>GPA2 Monitoring (June 2014 – December 2019) and preparation of Country Reports</b>											
2021												2022											
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>CGRFA-18</b>									<b>GB-9</b>								<b>WG11</b>						
<b>Preparation of the draft SoW3</b>												<b>Draft SoW3</b>											
2023																							
1	2	3	4	5	6	7	8	9	10	11	12												
<b>CGRFA-19</b>									<b>GB-10</b>														
<b>Translation and publication of SoW3</b>																							

**GB** = Governing Body of the Treaty; **WG** = Working Group on PGRFA; **GPA2** = Second GPA; **CGRFA** = Commission; **SoW3** = Third Report

## APPENDIX II

**PROPOSED CORE ACTIVITIES AND REVISED PROVISIONAL BUDGET FOR MONITORING THE IMPLEMENTATION OF THE SECOND GPA AND PREPARING THE THIRD REPORT (2016-2023)<sup>14</sup> (AMOUNTS IN USD 1 000s)**

	2016-2017		2018-2019		2020-2021		2022-2023		TOTAL		
	RP 15,16	EB	RP 15,16	EB	RP 15,16	EB	RP 15,16	EB	RP	EB	RP+EB
Mobilize funding for the process and the report	6		11		11		11		39	0	39
Coordinate the reporting process and communications	60		64		102		87		313	0	313
National stakeholder consultations for GPA-2 assessments (through NISM) and country reports preparation <sup>17</sup>		270		300		900			0	1470	1470
Analyse data and prepare a synthesis					55				55	0	55
Upgrade, maintain and moderate WIEWS	95		74		74		56		299	0	299
Development of thematic background studies <sup>18</sup>			8	40	16	85			24	125	149
Coordinate the updating of and update the					21	10			21	10	31
Edit and publish draft of The Third Report					179	50	44	20	223	70	293
Format, translate (into 5 languages) the Third Report							14	215	14	215	229
Publish the Third Report and it's in-brief version							61	82	61	82	143
Launch the Third Report (communication strategy)							19		19	0	19
<b>TOTAL</b>	161	270	157	340	458	1045	292	317	<b>1068</b>	<b>1972</b>	<b>3040</b>

RP = Regular Programme; EB = Extra Budgetary

<sup>14</sup> It is assumed that the Nineteenth Regular Session of the Commission will take place in early 2023.

<sup>15</sup> Estimated Regular Programme contribution to the preparation process and the Third Report, covering mainly salaries for Professional and General Staff.

<sup>16</sup> Subject to the approval of Programme of Work by FAO Conference.

<sup>17</sup> Assistance to 90 developing countries to produce an assessment on the implementation of the Second GPA (budgeted at USD 3,000/country) and to 120 developing countries to convene national workshops with stakeholders to produce an assessment on the implementation of the Second GPA and a country report (budgeted at USD 10,000/country).

<sup>18</sup> Support the development of thematic studies and other necessary background material and expert meetings for the Third Report, according to the priorities identified by the Commission. Budgeted at USD 25,000/study for 5 thematic studies.



### APPENDIX III

#### PROPOSED REVISED LIST OF THEMATIC STUDIES

The context and background to the Third Report shall be provided through commissioned studies on themes that are relevant to the conservation and sustainable use of PGRFA. These may include emerging issues and trends in relevant scientific and technological advances. They may also include evolutions to the policy landscapes and other factors that may have implications for the conservation and sustainable use of PGRFA with regard to their utility in both food security and nutrition and environmental protection.

In response to the Commission's request, a revised list of thematic studies is provided below. This list is based on anecdotal evidence on current trends and is tentative. It is being provided on the expectation that relevant developments which may influence the eventual choices of themes and their contents might occur in the intervening period. These expected developments include the publications of studies being conducted by the Commission. It is therefore envisaged that the identified themes will be subjected to a continuing process of review by the Commission and Working Group in order to ensure their continuing relevance and in order to align the publication to other relevant activities in the Commission's Multi-Year Programme of Work. This continuing review will also permit the articulation of precise research questions for the studies closer to the publication date of the Third Report. The tentative themes are:

- Climate change. Erratic extreme weather events will continue to impact on where and how PGRFA are conserved and used. For instance, climate change will affect the distribution of CWR and wild plants harvested for food due to its impacts on their natural habitats. On the other hand, changing climatic conditions may also predispose these PGRFA to the development of adaptive features as part of ongoing evolutionary processes. Regarding use, a major thrust of crop improvement efforts shall be the development of resilient and input-use efficient crop varieties. Non-adapted germplasm, including CWR, will serve as the sources of traits for generating such varieties.
- Nutrition. Hidden hunger, i.e. micronutrient deficiency, and obesity are becoming established public health concerns. Increasingly therefore, the enhancements of quality and nutritional traits in improved varieties of staple crops are becoming standard plant breeding objectives. The unlocking of the largely untapped potentials of PGRFA will be critical to success as will be the developments, adaptations and revisions of protocols for assays. A review of the state of the art in the sustainable use of PGRFA to improve nutrition would therefore be an important part of the Third Report.
- Characterization and evaluation of germplasm. New efficiency-enhancing tools and methods are increasing our capacities for generating large amounts of reliable data on germplasm at cost- and time-efficient rates previously unimaginable. For instance, Focused Identification of Germplasm Strategy (or FIGS) permits the predictive characterization of yet uncharacterized germplasm by letting the investigator assign potential phenotypic or genotypic properties based on environmental information of the collecting sites or data on already characterized samples. The average costs for generating molecular genetic data have decreased sharply in the recent past. This, coupled with increasing availability of critical masses of skilled personnel, is permitting the routine use of high throughput molecular genetic platforms to generate unprecedented amounts of data quickly and cheaply. Genotyping by Sequencing (or GBS), whereby whole genome sequences of several samples of individuals are used to catalogue variations, is one example of the benefits of the relatively cheap and quick assays. The potentials that these more accessible assays portend for extending the benefits of molecular biology to the characterization and evaluation of under-researched crops and plant species are enormous. In like manner, high throughput screening platforms, including those based on imaging, are being used to generate copious amounts of phenotypic characterization and evaluation data. When such phenotypic data are related to genotypic information, this is known as phenomics. This is revolutionising not only how phenotypic data are generated but also the establishment of cause-effect relationships between expressed traits and the heritable factors that influence them. Access

to genomic information and the bioinformatics skills to utilize them in breeding programmes will be crucial for the widespread use of such technologies for food security by developing countries.

- Safety duplicates. The safety duplication of unique accessions represents a fundamental practice to reduce the risk of loss of germplasm diversity in *ex situ* collections. On the other hand, duplication of accessions beyond some reasonable level is not necessary and drains financial resources which could otherwise be used for other urgent tasks. As highlighted by the Second Report, a significant increase in the number of genebank holdings is due to a large proportion of these holdings being duplicates. Ways and means to reduce the number of unintended duplications in *ex situ* collections should be further explored. A valuable contribution of such a study would be the definition of what constitutes a “safety duplication” and the proposition of its criteria. This has become necessary in order to delineate between “black box” collections that contain samples that are largely unmonitored from de facto “safety duplication” collections that must involve the active management of the stored accessions.
- New plant breeding techniques. Recombinant DNA techniques have been used to introduce traits that were not readily accessible from germplasm collections into crop varieties. For a variety of well-documented reasons, the official release and cultivation of crop varieties produced through genetic transformation, known as genetically modified organisms, has been constrained by different regulatory regimes in many parts of the world. New plant breeding techniques, based on genome editing, for instance, are recently being used to generate new plant variants in different parts of the world. Policy makers are striving to determine how best to classify the varieties arising from these techniques that do not involve the introduction of foreign hereditary materials. Other new methods involve aspects of cisgenesis, reverse breeding, synthetic genomics. All these may engender significant impacts on regulatory mechanisms and hence, access to new crop varieties. The Third Report will review these emerging techniques especially as for some of them, there are already products in the pipeline.