



**Food and Agriculture
Organization of the
United Nations**



The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

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Item 10 of the Provisional Agenda
SIXTH SESSION OF THE GOVERNING BODY
Rome, Italy, 5 – 9 October 2015
Vision paper on the development of the Global Information System

Executive Summary

This document presents the Vision Paper for the Global Information System and synthesizes the outputs and advice provided by the Expert Consultation on the Global Information System. The draft Vision is contained in the *Appendix* as well as the Programme of Work for its implementation and the terms of reference for the Scientific Advisory Committee on Article 17 as reviewed by the Expert Consultation. This document also provides updates on the follow-up work undertaken by the Secretariat in the biennium.

Guidance Sought

The Governing Body is invited to consider and adopt the Resolution in the *Appendix* to this document, which contains the draft vision, the Programme of Work and the terms of reference for the Scientific Advisory Committee on Article 17.

I. INTRODUCTION

1. As farmers and breeders need new climate adapted plant varieties and new tools to manage diversity and characterize it at different levels, data is becoming more important for the use of plant genetic resources for food and agriculture. In this context, the Governing Body, individual Contracting Parties, users and stakeholders have requested the Article 17 to be further developed and implemented as a priority.
2. The Governing Body started considering the Global Information System (GLIS) at its Third Session in 2009 when it requested the Secretary to collaborate with FAO and other relevant stakeholders to facilitate their contribution to the continuous development of the GLIS in order to promote greater access to relevant information and information systems by Contracting Parties and other relevant stakeholders. It requested the Secretary to develop a vision paper to take stock of existing information systems and to outline a process for its development.
3. At its Fourth Session in 2011, the Governing Body reviewed a synthesis of some of the major information systems on PGRFA and determined the need to set up a consultation process for the effective development of GLIS. Furthermore, it called for cooperation with the Clearing House Mechanism of the Convention on Biological Diversity (CHM-CBD).
4. At its Fifth Session in 2013, the Governing Body called for an Expert Consultation on the Global Information System (COGIS) in order to:
 - i. facilitate the assessment of needs and advise the Secretary on the identification of activities and priorities for information exchange;
 - ii. conduct a review of major ongoing initiatives, projects and programmes at national, regional and international levels of relevance for the development of Article 17 of the International Treaty;
 - iii. identify information gaps on scientific, technical and environmental matters on PGRFA;
 - iv. identify best practices and appropriate methodologies for the strengthening of an effective global information system;
 - v. conduct and publish the necessary background study papers, in cooperation with Contracting Parties and relevant stakeholders and subject to availability of resources, an online survey on the major components of the Global Information System;
 - vi. advise the Secretariat in the drafting of the vision paper on the Global Information System referred to in Article 17 of the Treaty as a conceptual basis for a programme of work to be presented to the Governing Body at its next session for its consideration.¹
5. In early 2014, with financial support from the Government of Germany to prepare the Expert Consultation, the Secretariat initiated a round of discussions with partner organizations to gather inputs and identify the main areas and elements to be further developed, building on experiences accumulated by those partners and with a view to facilitating access to, exchange and use of PGRFA data and information. The initial work included a survey with stakeholders and a number of technical background papers and other information documents provided by partner institutions².

¹ Resolution 10/2013, *Development of the Global Information System on Plant Genetic Resources in the context of Article 17 of the International Treaty*.

² All the documentation is available online at: <http://www.planttreaty.org/content/cogis1>

6. The COGIS meeting took place in San Diego, USA, on 7 and 8 January 2015, back-to-back with the XXIII International Plant & Animal Genome meeting and the first Partner Assembly of DivSeek.³

7. The Expert Consultation adopted the draft vision, Programme of Work and the terms of reference for the Scientific Advisory Committee on the Global Information System of Article 17 (SAC-GLIS). It further requested the Secretariat to continue technical consultations for the development of Permanent Unique Identifiers (PUIs) for PGRFA and to review the draft Programme of Work.⁴ Section IV of this document provides an update of the follow up work undertaken by the Secretariat based on the recommendations formulated at the COGIS meeting.

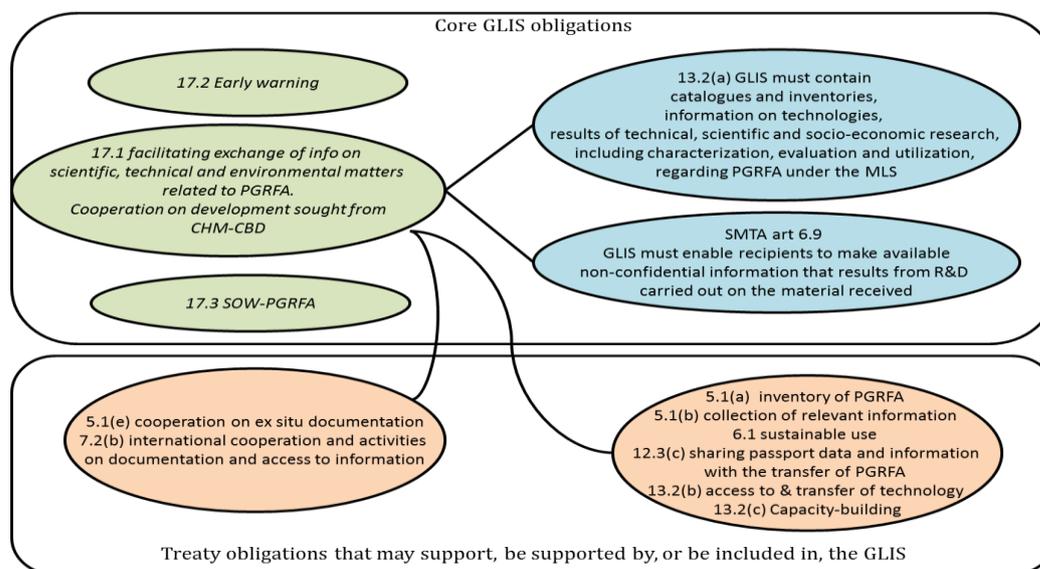
II. ARTICLE 17 OF THE INTERNATIONAL TREATY

8. The GLIS is regulated under Part V of the International Treaty, “Supporting Components”. According to Article 17.1:

“The Contracting Parties shall cooperate to develop and strengthen a global information system to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture, with the expectation that such exchange of information will contribute to the sharing of benefits by making information on plant genetic resources for food and agriculture available to all Contracting Parties. In developing the Global Information System, cooperation will be sought with the Clearing House Mechanism of the Convention on Biological Diversity”.

9. Other paragraphs of Article 17 deal with early warning about hazards that threaten the efficient maintenance of plant genetic resources for food and agriculture, and cooperation with the Commission on Genetic Resources for Food and Agriculture on the periodic Report on the state of the world’s PGRFA to facilitate the updating of the rolling Global Plan of Action. *Figure 1* below shows the wide spectrum of linkages and connections between Article 17 and other articles of the Treaty, as well as previous guidance provided by the Governing Body through several Resolutions.

Figure 1: Analysis of Article 17 in relation to other articles and Treaty Systems



³ See paragraph 15 below.

⁴ <http://www.planttreaty.org/content/cogis1>

10. In a first priority level and according to the provisions of the Treaty, GLIS must provide functionality for notification of early warnings (Art. 17.2) and must facilitate the reassessment of the State of the World on PGRFA (Art. 17.3 and Art.14). The Treaty also indicates that GLIS should include catalogues and inventories, information on technologies, results of technical, scientific and socio-economic research, including characterization, evaluation and utilization, regarding PGRFA under the MLS (Art. 13.2.a)

11. Additionally, Article 6.9 of the Standard Material Transfer Agreement (SMTA) imposes an obligation on recipients to make available to the users of the Multilateral System through GLIS all non-confidential information that results from research and development carried out on the Material.

12. In a second rank of priority, other articles of the Treaty refer to actions for which the GLIS is the logical instrument, although there is not a legal obligation, for example that contracting Parties shall cooperate to promote ex situ documentation (Art. 5.1e) and that international cooperation should be directed to enhancing international activities to promote documentation, sharing and providing access to, and exchanging appropriate information, (Art. 7.2b).

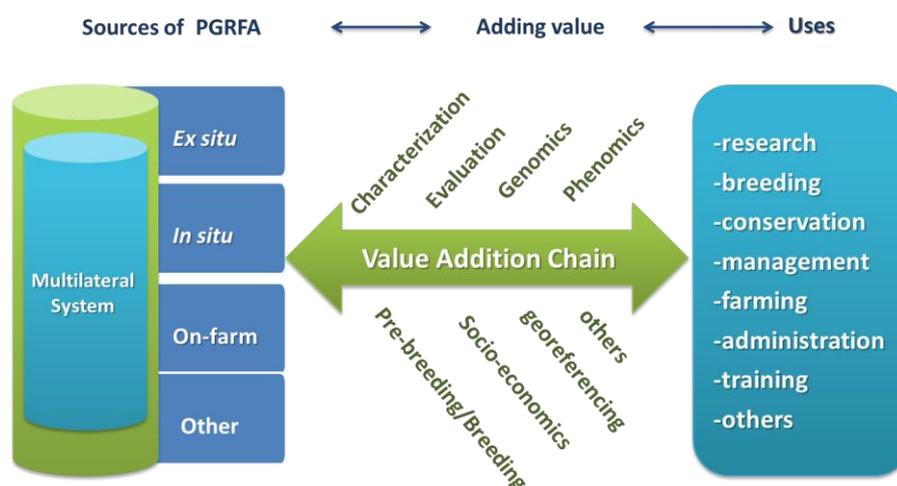
13. Furthermore, the Treaty also refers to the functions of GLIS in other articles in relation with the inventory of PGRFA (Art. 5.1), the promotion of the collection of relevant information (Art. 5.1b), the development and maintenance of appropriate policy and legal measures to promote the sustainable use of PGRFA (Art. 6.1), the sharing of all passport data and other associated available non-confidential descriptive information with the transfer of PGRFA (Art. 12.3c), the access to and transfer of technology (Art. 13.2.b) and Capacity-building (Art. 13.2.c).

14. Although at different level, those articles and the guidance already provided by the Governing Body in various resolutions and during the development of other Treaty core systems, refer to the need to connect existing information systems maintained by different organizations, to add value to the material available the Multilateral System and to other core systems and programmes of the Treaty and to facilitate cooperation and capacity building at international level.

III. THE ELEMENTS OF THE VISION

15. One of the outputs of COGIS was recommendation that the GLIS should mirror the three elements of the value change for PGRFA (*Figure 2*), to meet the information needs of each element. The corresponding elements of the GLIS are described below.

Figure 2. The value chain of PGRFA, illustrating the components of and linkages between the three elements, namely the sources of PGRFA, adding value, and using PGRFA.



- i. **Facilitating access to information on sources of germplasm** in existing sources of germplasm information systems, databases and data sets on *ex situ* collections, *in situ* crop wild relatives, on-farm resources and other sources and their relationship with the MLS. The sources of information are different in nature and accessibility, dispersed, owned or held by different types of data providers and they serve different purposes (eg. national inventories, Eurisco, ARS-GRIN⁵, Genesys⁶, Plant Genetic Resources Gateway⁷, scientific publications and relevant crop portals). One outcome of preliminary research is that the closer the information source is to the data generator the higher the quality of the information is. Hence, the GLIS should provide key core central services to aggregate information and provide a quick searchable entry point to discover and facilitate access to PGRFA, but should remain predominantly decentralized. This element is reflected in **objective 1** and **objective 2** of the draft Programme of Work.
- ii. **Supporting value addition activities** such as generating phenotypic, genetic, environmental and other relevant data and assessing potential value in the socio-economic and environmental policy context. GLIS should be able to receive, store or reference and make publicly available all types of PGRFA information, including non-digitized data. This would require the development of data standards, tools and incentives to contribute data for the GLIS community, a mechanism enabling recipients of PGRFA to comply with their obligation under SMTA Art 6.9 to make available to the MLS, through the GLIS, all non-confidential information that results from their research and development carried out on the material received, as well as data sharing and use policies. COGIS also indicated that the GLIS should contain links to genomic data, including sequence data, because they greatly enhance the value of PGRFA and improve conservation and use of PGRFA. In addition, genomic information should be mined to develop molecular markers that could then be used

⁵ <http://www.ars-grin.gov/>

⁶ <http://www.genesys-pgr.org/>

⁷ The PGR diversity Gateway for the conservation and use of crop wild relative and landrace traits is a product of the 'PGR Secure Project' funded by the EU and is available at: <http://pgrdiversity.bioversityinternational.org/> (last accessed on 9 July 2015).

to follow the inheritance of linked traits during the breeding cycle, thus streamlining phenotyping requirements. In this context, the newly established DivSeek initiative may play a relevant role in aggregating needs and identifying new solutions together with the scientific community. The promotion of open data standards and the establishment of synergies with other initiatives on open data, like GODAN⁸, will be explored in the first Programme of Work. This element is reflected in **objective 3** and **objective 4** of the draft Programme of Work.

- iii. **Supporting the major uses of PGRFA.** The GLIS should cater for the different purposes for which PGRFA is accessed and used. The variety of uses ranges from conservation of PGRFA in *ex situ* or *in situ* conditions, to on-farm management, pre-breeding and breeding, and training. For the GLIS to respond to user needs, it should connect and offer services along the value addition chain for PGRFA. The assessment of information-related needs and the establishment of priorities for information exchange would require the use of surveys, targeted to particular user groups. Other research methods, such as case studies, will also be needed to solicit information, views and opinions from users and to allow them to participate in the design and implementation of the GLIS. Based on the advice of COGIS, some of these activities are grouped under **objective 5** of the draft Programme of Work.

16. Cooperation with the CHM-CBD is prescribed by Article 17 of the Treaty, and during the current biennium, the Secretariat has explored linkages with the Access and Benefit Sharing Clearing House Portal which is a key tool for facilitating the implementation of the Nagoya Protocol on Access and Benefit-sharing⁹. Certain useful information have been identified that will require further validation with users in the coming biennium. Potential linkages could be also established between the information reported by Parties to the Nagoya Protocol and selected sets of information that are expected to be reported by Contracting Parties to the Treaty under the Online Reporting Mechanism (under development) in the area of compliance. COGIS also recommended that the two systems closely interact on overlapping activities, such as capacity development and dissemination of information. This collaboration is related to **objectives 1, 3** and **6** of the draft Programme of Work.

17. In the draft vision and Programme of Work, **objective 6** deals with capacity development, mainly through training activities in partnership with a range of organizations and networks. The objective is to assist users in Contracting Parties with taking stock of the information services and tools available within the Treaty community and beyond. The activities listed under objective 6 and also other activities under objective 2, include the provision of information, training and tools jointly with the CGIAR Centres, the CBD, FAO, selected networks and Contracting Parties through workshops, training materials and the organization of dedicated events. In this context, the Treaty PGRFA community, particularly staff working in national PGRFA programmes in developing countries, has already benefitted since 2013 from the analysis tools and training activities. The tools were developed, and training was delivered under the Programme to Strengthening National Plant Genetic Resources Capacities in Latin America¹⁰. The tools have also been tested in other regions in 2014. They present a huge potential for integration into the

⁸ The Global Open Data for Agriculture and Nutrition (GODAN) works to support global efforts to make agricultural and nutritionally relevant data available, accessible, and usable for application worldwide, see www.godan.info for more information.

⁹ Available at <https://absch.cbd.int/> (Last accessed on 9 July 2015).

¹⁰ The suite of tools and documentation developed under this programme can be accessed at: <http://www.planttreaty.org/capfitogen> (Last accessed 9 July 2015).

GLIS as part of dedicated packages with analysis tools to improve information quality and decision making processes.

IV. EARLY IMPLEMENTATION ACTIVITIES AND CORE SERVICES

18. Some of the provisions of Article 17, as indicated in *Figure 1* above, point out the close relation and synergies between the GLIS and the MLS. COGIS recommended an improved notification facility to document germplasm in the MLS. Based on this request, the Secretariat has been working during 2015 in two directions: a) the design of a new notification of inclusion and discovery facility; and b) and the development of permanent unique identifiers (PUIs) associated with PGRFA. The need for PUIDs emerges as critical to unambiguously and permanently identify PGRFA samples being exchanged not only in the context of the ITPGRFA and its Multilateral System, but also outside. Once a PUID is assigned, an accession can be referenced easily and unambiguously forever, even across organizations¹¹.

19. One of the initial steps towards the implementation of the GLIS that COGIS determined, is the elaboration and adoption of a sound PUI strategy to properly identify PGRFA and facilitate the transfer of associated information.

20. As a follow-up to COGIS, the Secretariat set up a Task Force of experts in March 2015, which recommended the adoption of Digital Object Identifiers (DOIs) as the PUID strategy for the System.¹² COGIS also recommended the Secretariat to make the necessary arrangements to facilitate the registration of DOIs free of charge for the PGRFA community as well as to further refine the metadata fields to be used during the registration.¹³

21. At the time of preparation of this document, the Secretariat is preparing a global survey, mainly addressed to breeders, data curators, geneticists and bioinformaticians to further validate the minimum set of descriptors required for the assignation of DOIs to PGRFA building upon the well-established international standard 'FAO/Bioversity List of Multi-Crop Passport Descriptors'. The results of the survey will be further tested directly with breeders in a collaborative project on rice funded by the Benefit-sharing Fund of the International Treaty.¹⁴ The findings of those consultations will be presented in a side event at this Session of the Governing Body.

22. Both the conceptual and the practical work on DOIs will be relevant for the design of a new notification and discovery facility. The new facility is based on the existing notification requirements already approved by the Bureau, including description of the material at accession level. Furthermore, it standardizes the data entry form and includes metadata documentation in case the notification is made through the publication of material in a third-party system. The new facility will be tested in the last quarter of 2015 to facilitate the access to the material and the

¹¹ <http://www.planttreaty.org/doi>

¹² *The Summary report of the Task Force on Permanent Global and Unique Identifiers for PGRFA in the context of the Global Information System of Article 17* is available online at http://www.planttreaty.org/sites/default/files/PUIDs-PGRFA-taskforce_en.pdf (Last accessed on 9 July 2015).

¹³ The use of Digital Object Identifiers (DOI) within the Global Information System, <http://www.planttreaty.org/doi>

¹⁴ The project '*Multi-country construction of a test platform for the development and allocation of globally unique identifiers for rice germplasm, linking the MLS information infrastructure and the DivSeek repository*' (PR-29) is being implemented by the Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (ICABIOGRAD-IAARD) with the involvement of the International Rice Research Institute (IRRI).

information generated by the projects funded under the Second Project Cycle of the Benefit-sharing Fund. It will also connect with existing external systems.

23. The Secretariat has also collaborated with partners and a group of experts in the further enhancement of the Notification and Discovery Facility to enhance access to the information and the material available in the Multilateral System, including linkages with online inventories and portals¹⁵. The new facility will be fully integrated with the Global Information System and will also make available information on the material resulting from the projects supported by the Benefit-sharing Fund.

V. INCENTIVES AND FURTHER RESEARCH

24. The resources (eg. scientific information, knowledge and data) that feed into the GLIS may have different uses and characteristics in different communities and different contexts. The communities that are expected to exchange data, such as germplasm providers, plant scientists, pre-breeders and breeders, researchers, farmers and others, are defined by connections on interest or expertise. For the GLIS to attain its objectives, an institutionalized global network linking up such communities for the creation and sharing of information, knowledge and data, is to be established on solid policy foundations (e.g. for data sharing and use) and managed with efficiency and responsiveness.

25. The draft Programme of Work, under **objective 4**, list a number of activities aimed at generating research-based suggestions for the governance and management of the GLIS network. Policy and management settings are likely to vary according to the different outcomes that the System is intended to achieve. The practical deployment of this modular approach will benefit from applied research based on existing major theoretical frameworks, which enable an analysis of the interests of the different actors and how the participation and interaction among actors can produce the desired outcomes.

26. COGIS advised on the establishment of the SAC-GLIS. While the overall guidance for the development and strengthening of the GLIS remains within the mandate of the Governing Body, the Committee will assist the Secretariat on the resolution of technical issues arising from its ongoing development. Its terms of reference, which are analogous in some elements to those of the Informal Advisory Committee to the Access and Benefit-sharing Clearing-House of the Nagoya Protocol were adopted by the COGIS and are contained in *Annex 3* to the *Appendix*.¹⁶

27. When considering the draft Programme of Work and the terms of reference of the SAC-GLIS prepared by COGIS¹⁷, the Governing Body is also invited to consider the need to design a monitoring and assessment mechanism to analyse how the tools and services that will be provided will impact on the implementation of the objective of the International Treaty. COGIS did not provide any concrete guidance on this element.

28. The activities under the first Programme of Work will cover a period of three biennia and are expected to be funded through extrabudgetary contributions, so therefore there are no direct cost implications for Contracting Parties to be reflected in the Core Administrative Budget. The Implementation of the Programme will follow a phased approach, with a set of pilot activities to be initiated during the first biennium. The advice of the SAC-GLIS and the availability of resources will be taken into account for the prioritisation. The Secretariat has initiated discussions with potential donors and there appears to be interest in supporting multiples components and activities under the first Programme of Work.

¹⁵ Also with the information being reported at national level through the GPA monitoring mechanism.

¹⁶ Nagoya Protocol (COP-MOP 1), in decision I/2, paragraph 2.

¹⁷ Minor edits have been inserted by the Secretariat following the advice contained in the Report.

VI. GUIDANCE SOUGHT

29. The Governing Body is invited to:

Review and adopt the draft Resolution contained in the *Appendix* to this document, with the vision, the Programme of Work and the terms of reference for the Scientific Advisory Committee on the Global Information System of Article 17.

*Appendix***DRAFT RESOLUTION **/2015****RESOLUTION ON THE VISION AND THE PROGRAMME OF WORK ON THE GLOBAL INFORMATION SYSTEM****The Governing Body,**

Recalling its previous decisions on the Global Information System and particularly Resolution 10/2013,

Acknowledging the need to facilitate the documentation and dissemination of PGRFA available in the Multilateral System and its associated information to facilitate research, plant breeding and training,

Thanking the Government of Germany for the financial support provided for COGIS and the Government of Spain for their support to the PGRFA analysis tools during the 2014-2015 biennium,

1. **Adopts** the *Vision* and the *Programme of Work* contained in Annexes 1 and 2 respectively;
2. **Decides** to establish the Scientific Advisory Committee on the Global Information System of Article 17 with the terms of references contained in Annex 3. Subject to the availability of financial resources, the Committee will meet at least twice during the 2016-2017 biennium.
3. **Requests** the Secretary to further develop and implement the programme of work based on the recommendations of the Scientific Advisory Committee;
4. **Invites** Contracting Parties, other governments and stakeholders to provide the necessary resources to implement a set of pilot activities of the Programme of Work;
5. **Requests** the Secretary to continue facilitating the DivSeek Initiative, with the view to enabling synergies with the Global Information System, in full respect of existing mandates and governance structures;
6. **Encourages** synergies and connections with existing information systems and networks, as well as with the operations of the Multilateral System and the projects funded by the Benefit-sharing Fund for the documentation of PGRFA;
7. **Requests** the Secretary to design a monitoring and assessment mechanism for the global Information System, based on the recommendations of the Scientific Advisory Committee, and present a draft to the next Session of the Governing Body,
8. **Requests** the Secretary to report on the above to the next Session of the Governing Body.

*Annex I***Vision for the Global Information System on PGRFA**

The Global Information System for PGRFA integrates and augments existing systems to create the global entry point to information and knowledge for strengthening the capacity for PGRFA conservation, management and utilization.

The development of a truly effective Global Information System as foreseen in the International Treaty involves, *inter alia*: strengthening existing systems and, where gaps remain, establishing new systems and initiatives; promoting inter-connectivity among systems; and providing overarching mechanisms to ensure ready access to the information and services provided. This translates into the following objectives:

- 1-To create a web-based platform with use-oriented entry points to PGRFA information;
- 2-To provide a comprehensive overview and facilitate access to sources of PGRFA and associated information;
- 3-To promote and facilitate interoperability among existing systems by providing clear principles, technical standards and appropriate tools;
- 4-To promote transparency on the rights and obligations of users for accessing, sharing and using PGRFA associated information;
- 5-To create and enhance opportunities for communication and international and multidisciplinary collaboration to increase knowledge about and add value to PGRFA;
- 6-To provide capacity development opportunities for the conservation, management and use of PGRFA and associated information and knowledge.

*Annex 2***Programme of Work on the Global Information System (2016-2022)**

The Programme of Work will cover an initial period of six years. It will be implemented through a phased approach and funded through extra budgetary contributions

1-To create a web-based platform with use-oriented entry points to PGRFA information

- a. To set up the technical infrastructure needed for the development of the Platform
- b. To engage with FAO, the Convention on Biological Diversity and its Nagoya Protocol and other organizations to build on the experience accumulated on the development of global portals;
- c. To define use case scenarios for target groups and set up mechanisms to get feedback from them;
- d. To create a prototype of the global portal able to receive feedback from the users on the SMTA material;

2-To provide a comprehensive overview and facilitate access to sources of PGRFA and associated information

- a. To create an index of sources of information, knowledge and other materials;
- b. To strengthen the capacity of genebanks and other providers to document and sequence their holdings and to facilitate access that information;
- c. To enable recipients of PGRFA to make available to the MLS all non-confidential information that results from their research and development carried out on the material received, in compliance with their obligation under SMTA Art 6.9.
- d. To allow quick access to information on the material available in the Multilateral System of Access and Benefit-sharing (MLS) at sample level;
- e. To develop the technical standards required for interoperability between different PGRFA information management systems

3-To promote and facilitate interoperability among existing systems by providing clear principles, technical standards and appropriate tools

- a. To develop a common standard for Permanent Unique Identifiers applied to PGRFA and an operational mechanism to promote the adoption of DOIs;
- b. To develop further training and capacity development material, including e-learning material, in collaboration with other relevant organizations;
- c. To recommend common standards for data and metadata and develop further standards (e.g. for phenotypic data) based on existing experiences in other sectors;
- d. To establish functional connections with other initiatives relevant for the adoption of open data and standards to PGRFA;

4-To promote transparency on the rights and obligation of users for accessing, sharing and using PGRFA associated information

- a. To analyse the institutional, organizational, policy and legal factors for PGRFA information access, sharing and use;
- b. To understand the applicability of models developed in other parts of the Treaty, such as the Multilateral System of Access and Benefit Sharing, and initiatives such as DivSeek;

5-To create and enhance opportunities for communication and international and multidisciplinary collaboration to increase knowledge about and add value to PGRFA

- a. To identify and create tools, mechanisms and opportunities for communication and collaboration with partners and users of the system (media, mailing lists, etc);
- b. To conduct focused surveys with a wide range of users and validation methods;
- c. To strengthening the linkages with relevant communities to concentrate research on core collections;

6-To provide capacity development opportunities for the conservation, management and use PGRFA and their associated information and knowledge

- a. To convey and support regional meetings and scientific conferences related to new technologies and themes;
- b. To provide access to capacity development materials;
- c. To support the training of staff in the area of bioinformatics in collaboration with relevant partners;
- d. To design mechanisms to promote training opportunities across institutions (training of trainers, match-making);
- e. To provide training for the genebank managers of the future;

*Annex 3***Terms of Reference for the Scientific Advisory Committee
on Article 17**Objectives

The Governing Body provides guidance on the development and strengthening of the Global Information System, to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture (PGRFA).

The Scientific Advisory Committee (Committee) shall advise the Secretary on:

- general recommendations on the development and deployment of the Global Information System and its components as adopted by the Governing Body;
- the discovery of new areas of work with potential impact on the System;
- the selection of pilot activities for the Global Information System and, upon request of the Secretary, other initiatives and actions to sustain the operation of the Global Information System, and the further update of the Programme of Work.

In particular, the Committee shall provide scientific advice to the Secretary on the following items:

1. the effectiveness and efficiency of the Global Information System as a mechanism to promote advice regarding scientific, technical and environmental cooperation on PGRFA matters;
2. the exchange of PGRFA-related information and the transfer of publicly available expertise, technology and scientific cooperation;
3. scientific and technical components of the Global Information Systems and its Programme of Work as recommended by the Governing Body;
4. cooperation with other relevant international and regional scientific and technical cooperation and technology transfer initiatives, including the Access and Benefit-sharing Clearing House Mechanism of the Nagoya Protocol;
5. means to facilitate the implementation of the Global Information System at the national level and the establishment of a Stakeholder Platform;
6. scientific, technical and environmental cooperation and benefits of all the Treaty activities, including the Multilateral System and Access and Benefit-sharing and the Programme of Work on Sustainable Use.

Subject to the availability of financial resources, the Committee will hold two meetings per biennium.

Composition

The Committee is composed of:

- up to 2 scientific experts from each Region, nominated by the Vice-chairpersons of the Governing Body of each respective Region;
- 10 additional scientific and technical experts appointed by the Secretary, taking into account the balance of stakeholder technical expertise.

The members shall be selected for their scientific expertise and understanding of the Global Information System and the International Treaty, taking into account the need for specialized and in-depth expertise including: bioinformatics and molecular genetics; the 'omics', in particular genomics, phenomics and proteomics; management of environmental and geo-spatial data about

plant genetic resources; scientific, taxonomy, crop wild relatives and genebank management and *ex situ*, *in situ* and on-farm conservation of PGRFA, technical cooperation; capacity-building; system integration, information exchange and data sharing; and partnerships with other organizations, institutions and initiatives.

The Committee shall elect its Co-chairpersons from among the experts.

The Secretariat of the International Treaty will facilitate and coordinate the work of the Committee, and prepare and service its meetings. It will also report to the Governing Body.