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GENETIC RESOURCES
FOR FOOD AND
AGRICULTURE

Guidelines for Developing a National Strategy for Plant Genetic Resources for Food and Agriculture



Guidelines for Developing a National Strategy for Plant Genetic Resources for Food and Agriculture

Food and Agriculture Organization of the United Nations
Rome, 2015

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EXECUTIVE SUMMARY

Plant genetic resources for food and agriculture (PGRFA) are defined as any genetic material of plant origin of actual or potential value for food and agriculture¹. Serving as a reservoir of heritable traits, these resources are indispensable ‘raw materials’ for generating superior crop varieties. The variety of choices that they provide permit the much desired diversification of crops, foods and farming systems, all of which are indices of the resilience of agricultural systems. PGRFA also provide invaluable ecosystem services that contribute to sustainable agricultural production systems. To prevent losses and maximize the availability of a wide range of PGRFA for current and future requirements, there is an urgent need to ensure more systematic conservation and sustainable use efforts at national levels.

This need has been recognized by international conventions and agreements, including the Convention on Biological Diversity (CBD), the International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty) and the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA). They each underline the commitment of governments to ensure that conservation and use of PGRFA continues to be a key element in the efforts to alleviate poverty, increase food security and provide us with a safety-net for the future of agriculture. They also highlight the need to develop and implement national strategies as means to attaining these goals.

These guidelines shall assist countries to implement the Second GPA in harmony with other relevant national and international commitments. Cognizant

1 International Treaty on Plant Genetic Resources for Food and Agriculture, Article 2.

of each country's needs, capacities and constraints, national strategies for PGRFA should identify a national vision, goals and objectives, and the corresponding plan of action, including responsibilities, resources, and timeframes for activities relevant to the conservation and sustainable use of PGRFA. A National Strategy for PGRFA should:

- Enhance the efficiencies of countries' interventions to domesticate the Second GPA, and hence implement the Treaty, and also meet other international obligations;
- Provide a single overarching framework for the management of PGRFA in order to attain clearly defined goals within a country's overall agricultural, environmental, and economic policies and development agenda;
- Facilitate the monitoring of progress as priority activities and their timeframes are clearly identified;
- Improve the national-level coordination of all PGRFA activities across the constituent sectors thereby enabling concerted actions, the pooling of resources and the avoidance of wasteful duplications and rivalry;
- Foster partnerships and linkages that are underpinned by mutually beneficial collaborative endeavors; and
- Facilitate the ease of developing country reports to regional and global initiatives, frameworks, agreements, etc.

In practical terms, a National Strategy for PGRFA may help a country in setting priorities, assign budgetary and other resources, build capacity, and design the seamless dovetailing of all aspects of national PGRFA management in service of reaching its own national goals. It is also a tangible means for demonstrating effectively that PGRFA, and hence their conservation and sustainable use, underpin food security, sustainable crop production systems and rural development. As a direct result, a country will be in a position to safeguard its PGRFA assets; facilitate access to needed genetic materials and govern the sharing of the accruing benefits; add value to them through crop improvement; and sustainably intensify crop production as may be needed.

A National Strategy can permit the tracking of the benefits of PGRFA – from the conserved materials through enhancements to the tangible seeds and planting

materials that engender higher yields, enhanced income generation, improved nutrition, etc. Such ease in demonstrating impact will be as beneficial to the researcher seeking to show the utility of resources invested in the management of PGRFA as it is to the policy makers in need of justification and basis for the assignment of scarce resources to competing interests and needs.

The usefulness of a National Strategy for PGRFA depends on the preparatory steps that lead to its formulation, the provisions made for its implementation and the commitment from authorities and stakeholders.

A set of draft voluntary guidelines for national plant genetic resources strategies to aid countries in the implementation of the Second GPA has been prepared at the request of the Commission on Genetic Resources for Food and Agriculture.

To help national authorities in developing a systematic approach to the conservation and use of PGRFA, these voluntary guidelines, that are customizable to a country's needs and circumstances, provide an outline of the step-wise processes that may be followed for preparing a National Strategy for PGRFA. Through a step-by-step approach, the voluntary guidelines present a "model process", identifies the PGRFA constituencies and the roles of these stakeholders. For ease of use, the process for preparing a National Strategy for PGRFA is proposed in three key stages.

- Stage A describes the establishment of a national coordinating mechanism which should derive from existing institutions and processes, such as the National PGRFA Programme. It is recommended that a core team from the National PGRFA Programme (or similar structure) be appointed to coordinate and drive the preparation of the strategy. This core team is referred to as the 'National PGRFA Committee', and should be a representative body with combined expertise to cover the different aspects of the management of PGRFA.
- Stage B describes the steps involved in forming the foundation and content of a National Strategy for PGRFA. To reveal gaps and identify priorities for the planning phase, it is recommended that a country assessment on the state of PGRFA be conducted. It is important that the widest array of stakeholders is involved in the preparation of the assessment, and that it covers all aspects of the PGRFA continuum, from conservation, through use to seed delivery. Based on the country assessment, the scope of the National Strategy for PGRFA, i.e. activities relating to the conservation and sustainable use of PGRFA to be implemented, can be agreed upon leading to a clear definition of what the strategy sets out to accomplish. Stage B also describes the formulation of a vision statement, as well

as an action plan with defined goals, activities, targets, indicators and timeframe. A realistic and detailed cost estimate for the individual elements of the action plan, as well as indicators and targets to enable monitoring of progress, are important elements of the action plan.

- The finalization and consultation process is presented in Stage C. The aim of the consultation process is to capture the perspectives of the stakeholders so that inputs from a broad spectrum of interest groups contribute to shaping the final version of the National Strategy for PGRFA. The stakeholder consultations must be well planned and facilitated in order to ensure meaningful participation.

Implementation of the National PGRFA Strategy refers to execution, monitoring and evaluation and reporting on the agreed activities. The steps of implementation should as much as possible follow the sequence of events outlined in its action plan, where all involved stakeholders are responsible for executing, financing and monitoring agreed activities. As part of an efficient monitoring and evaluation process, it is recommended that the country establish or update existing information- and data management systems, and ensure that all stakeholders have access to these and can participate in the data management process.



List of Acronyms

CBD	Convention on Biological Diversity
Commission	Commission on Genetic Resources for Food and Agriculture
CSOs	Civil society organizations
FAO	Food and Agriculture Organization of the United Nations
NAPA	National adaptation programme of action
NBSAP	National Biodiversity Strategies and Action Plan
NFPs	National Focal Points
NGOs	Non-governmental organizations
NISM	National Information Sharing Mechanism
PA	Priority Activities
PGRFA	Plant genetic resources for food and agriculture

SADC	South African Development Community
SAPM	Strategic Action Plan to strengthen the conservation and use of Mesoamerican PGRFA in adapting agriculture to climate change
Second GPA	Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture
SPGRC	SADC Plant Genetic Resources Centre
Treaty	International Treaty on Plant Genetic Resources for Food and Agriculture
Working Group	Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture

I. INTRODUCTION

At its Fourteenth Regular Session, held from 15-19 April 2013, the Commission on Genetic Resources for Food and Agriculture (Commission) expressed its appreciation for FAO's assistance to countries in developing national plant genetic resources strategies, best practices and tools for the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA). It further requested FAO to prepare draft guidelines for national plant genetic resources strategies for review by the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group) and the Commission at their next sessions.

In this document a "National Strategy for PGRFA" is understood as to mean a nationally agreed document that identifies a country's vision, goals and objectives relevant to the conservation and sustainable use of plant genetic resources for food and agriculture (PGRFA), and proposes an action plan with defined activities, targets, indicators, responsibilities, resources and time frame. The strategy should be fully in line with national goals and priorities and reflect and complement sector-specific policies related to PGRFA, such as a seeds system policy.

As a nationally agreed framework for PGRFA-related activities, a National Strategy for PGRFA aims to promote and facilitate the implementation of the Second GPA at country level and support the development of a systematic approach to the conservation and use of PGRFA. It also aims to assist the country in meeting its commitments under international conventions and agreements relevant to PGRFA, including the International Treaty on Plant Genetic Resources for Food and

Agriculture² (Treaty) and the Convention on Biological Diversity³ (CBD), which both require their parties to develop national strategies, plans or programmes for the conservation and sustainable use of plant genetic resources and biological diversity, respectively.

This information document presents the Guidelines for developing a National Strategy for PGRFA, which is aimed at helping national authorities in preparing a National Strategy for PGRFA. It provides a suggested template for this exercise. Recognizing that the formulation and implementation of a national strategy will differ from country to country, the guidelines consist of a sequence of stages and suggested methods to guide the formulation of a document that reflects the country context and the objectives of the stakeholders who must adopt and implement the strategy. The guidelines are primarily intended for use at country level by policymakers, public sector staff of ministries, departments, research and extension institutions, as well as other stakeholders whose work are related to the conservation and use of PGRFA. The management of PGRFA is a matter of national sovereignty so the adoption of these guidelines in charting the course for the conservation and sustainable use of PGRFA is voluntary.

The Guidelines for developing a National Strategy for PGRFA have benefited from FAO's hands-on experience in assisting countries in Africa with formulation of national strategies for PGRFA, including in Botswana, Lesotho, Malawi, Mozambique, Tanzania, Zambia and Rwanda. To further enrich the document with perspectives from countries, the guidelines have been reviewed in a series of three expert consultations⁴ involving stakeholders from all regions.

2 The International Treaty on Plant Genetic Resources for Food and Agriculture. <http://www.planttreaty.org/> (accessed on 23 December 2014).

3 The Convention on Biological Diversity. <http://www.cbd.int/convention/> (accessed on 23 December 2014)

4 Douala, Cameroon (November 2013); Panama City (November 2013) and Rome, Italy (March 2014).

II. BACKGROUND

■ Plant Genetic Resources for Food and Agriculture

Plant genetic resources for food and agriculture (PGRFA)⁵ encompass the entire diversity of plants used, or with the potential to be used, in agriculture for food, fodder, and fibre. These include accessions of germplasm holdings (*ex situ* collections), wild species found in nature (*in situ*) that may be related to crops (i.e., crop wild relatives); landraces or traditional varieties maintained on-farm; breeding materials in crop improvement programs; and improved varieties registered and/or released for cultivation. With a reservoir of heritable traits and characteristics, these resources are the raw materials used in plant breeding to generate superior varieties suited to agro-ecologies and farming systems. The variations within our PGRFA permit the diversification of crops and, hence, foods. The spectrum of diversity present in PGRFA, available both within national boundaries and from other countries, therefore represents a critical component of a country's suite of tools that can be deployed to achieve food and nutrition security in environmentally sustainable ways.

5 In the context of the International Treaty on Plant Genetic Resources for Food and Agriculture, 'Plant Genetic Resources for Food and Agriculture (PGRFA)' refers to any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity, of actual or potential value for food and agriculture. <http://www.planttreaty.org>.

Plant genetic resources for food and agriculture encompass the entire diversity of plants used, or with the potential to be used, in agriculture for food, fodder, and fibre.

■ **The Second Global Plan of Action for PGRFA**

For the six decades since its inception, FAO, its Members and research and development partners have consistently implemented activities and programs, established mechanisms and convened normative platforms that underscore the pivotal importance of the global commonwealth, PGRFA, to food and nutrition security. These interventions have resulted in continually improving capacities to both conserve and

sustainably use these resources nationally, regionally and globally. For instance, the Second GPA – a revision of the 1996 *Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture* – was adopted by FAO member countries in 2011. The revision of the GPA was engendered by *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*⁶ which highlighted not only the progress made (globally, regionally and nationally) in the conservation and sustainable use of PGRFA, but also the challenges and opportunities that had arisen since the first report on *The State of the World's Plant Genetic Resources for Food and Agriculture* published in 1996.

The Second GPA is a framework that prescribes a set of 18 priority activities to guide action and progress at community, national, regional and international levels for the conservation and sustainable use of PGRFA. In essence, it seeks to build upon the successes attained in FAO member countries over the years in the conservation of crop germplasm, in their use in plant breeding and in the delivery of high quality seeds and planting materials – that bear true fidelity to the PGRFA – to the farmers who need them. The Second GPA is a supporting component of the Treaty. The Treaty which entered into force in 2004 is a legally binding agreement between countries in the realm of the conservation and sustainable use of PGRFA, and the fair and equitable sharing of the benefits arising from their use. By the end of 2014, more than 130 countries had become Contracting Parties to the Treaty.

⁶ *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture* is available at <http://www.fao.org/agriculture/seed/sow2/en/>.

■ PGRFA and the challenge of food insecurity and malnutrition

FAO defines food security as “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.”⁷ In spite of the enormous advances in agriculture and food production, food insecurity and malnutrition are still widespread. In fact, the world grapples with the reality of a generational challenge of food and nutrition insecurity for which 60 to 70 percent more food is needed by 2050 when the global population is projected to reach 9 billion. Without this unprecedented level of increase in food production, there will be widespread famine and hunger. These will in turn most certainly trigger political unrests and social upheavals in the vulnerable regions of the world whose current food insecurity profiles will be worsened. The task of attaining and sustaining the projected level of increased food production, daunting under the best of circumstances, is exacerbated by climate change. The erratic extreme weather events that are blamed on this phenomenon are expected to impact agricultural productivity negatively in many parts of the world. Also, with finite supplies of arable lands and water resources and the steep costs of increased use of agrochemicals, enhanced crop productivity, i.e. producing more food with fewer inputs, is the recognized sustainable path to success. Taken in concert, the need to produce sufficient nutritional food sustainably, i.e. with minimal environmental footprints, in increasingly degraded environments, with and under unpredictable climatic conditions, requires innovative solutions. The unlocking of the latent potentials of PGRFA is recognized as a foremost constituent of these innovative solutions.

It is clear that agricultural environments change as do farming systems; new pests and diseases arise; there are incidents of drought and flooding; temperatures rise and drop; and the demands for specific products are constantly changing. In order to be able to continually adapt agriculture to ever changing conditions, both farmers and plant breeders need to have access to a genetically diverse portfolio of crops and their varieties that are suited to a range of agro-ecosystems and farming practices. PGRFA are harnessed to contribute to the attainment of these goals through:

- The cultivation of a diverse array of crops and their varieties which demonstrably reduces risks and increases overall production stability thereby enhancing the resilience of farming systems; and

⁷ Department of Economic and Social Development, Food and Agriculture Organization of the United Nations, Rome, Italy. <http://www.fao.org/economic/ess/ess-fs/it/> (accessed 23 December 2014).

- The unlocking and exploitation of the heritable variations encoded into the blueprints of PGRFA for developing improved and better adapted crop varieties that are deployed in response to the continually evolving constraints to food production.

Intrinsically linked to the broader context of sustainability and environmental health, PGRFA are also an important provider of ecosystem services. These include regulating services (e.g. climate and disease regulation, pollination and water purification); cultural services (e.g. recreational, spiritual, religious, inspirational, educational) and supporting services (e.g. soil formation and nutrient cycling).

The PGRFA sector therefore has multiple roles to play in ensuring food security for all, including through producing more and better food for rural and urban consumers; providing healthy and more nutritious food; and enhancing income generation and rural development. Farm households also tend to draw on a variety of activities to achieve food and income security. At the crop level, farmers can diversify with respect to the crops and varieties they grow and at the farm level, a diversity of enterprises can be undertaken, e.g. food processing, agroforestry or 'agrotourism'. Diversification across activities is also an important risk management strategy, especially for poor farmers. And with a more diverse portfolio of PGRFA available, these farmers will be provided with more options.

In addition to food production and security, PGRFA also underpin nutritional well-being, as the consumption of diverse diets represents an important way of ensuring sufficient intake of all nutrients needed for good health. A number of breeding efforts are also underway to improve the nutritional quality of staple crops worldwide.

The Second GPA prescribes roadmaps for leveraging PGRFA in the development and/or strengthening of a country's crop production systems. However, countries require assistance with translating the priority activities of the Second GPA into time-bound activities to suit national peculiarities and specific developmental goals. Virtually all member countries of FAO have established National PGRFA Programs, i.e. the network of national research and development institutions mandated with the conservation and use of PGRFA and their supervisory ministries and departments. These national programs should therefore constitute the hub for all PGRFA-related concerted action and therefore serve as the take off point for further strengthening of capacities.

A lot of progress has been made over the recent years in linking the conservation and use of PGRFA with interventions to increase food security and develop more sustainable agricultural systems. However, in spite of the enormous

contributions and untapped potentials of PGRFA to contribute to global food security and sustainable agriculture, their role is not yet widely recognized or understood. Greater efforts are needed to estimate the full value of PGRFA, to assess the impact of their use and to bring this information to the attention of policy-makers and the general public.

What is lacking in many countries is a mechanism to foster linkages from conservation of PGRFA through use in plant breeding and by farmers to seed systems. This cohesive interlocking of sectors is referred to as the continuum approach to the management of PGRFA. Often PGRFA are not managed as a continuum which diminishes the chances of success. In those cases, re-orientation is necessary to ensure that appropriate measures at country levels are taken to strengthen the linkages between these three components: the conservation of PGRFA; their sustainable use both directly by end-users and in crop improvement; and the delivery of quality seeds and planting materials. A starting point for redressing this situation would be the preparation, adoption and implementation of an inclusive, concerted set of actions that span the whole spectrum of PGRFA management.

■ **What is a National Strategy for PGRFA?**

A National Strategy for PGRFA is the blueprint for the management of a country's PGRFA as a continuum of interventions in order to achieve clearly defined time-bound goals. It identifies the country's vision and goals and the corresponding plan of action and the associated responsibilities, resources, and timeframes for the identified priority activities relevant to the conservation and sustainable use of PGRFA. The conservation and use of PGRFA is a multi-sector endeavour. It is therefore expected that the activities and the responsible entities forming part of such a strategy will cut across several sectors especially food and agriculture; environment; education; culture; science and technology; and commerce.

In addition to food production and security, PGRFA also underpin nutritional well-being, as the consumption of diverse diets represents an important way of ensuring sufficient intake of all nutrients needed for good health.

Box 1. What is the difference between a policy and a strategy?

A policy is a set of basic principles and guidelines, formulated and enforced by a National Government (or the governing body of an organization), to direct and limit its actions in pursuit of long-term goals. A strategy refers to a concrete plan of action, specifically designed to achieve concrete goals.

Although a strategy may exist without a policy in place, it is often to develop strategies within the context of a broader policy which may sometimes also require adjustments of the policy.

A National Strategy for PGRFA leverages the National authorities to:

- Implement the Second GPA and the Treaty;
- Provide a single overarching framework for the conservation and sustainable use of PGRFA, within a country's overall agricultural, environmental, and economic policies and development agenda;
- Improve the national coordination of PGRFA, by identifying and involving all relevant stakeholders drawn from the widest possible range of sectors, e.g., government ministries and departments, the private sector, civil society, and farmer-based organizations, and assigning and/or affirming their roles and responsibilities;
- Agree on priority activities and their timeframes at national level;
- Ensure strong linkages between conservation and sustainable use (i.e., the continuum approach to the management of PGRFA⁸) by fostering partnerships that are underpinned by mutually beneficial collaborative endeavors;
- Facilitate cooperation among different stakeholders in the conservation and sustainable use of PGRFA at different levels; and
- Achieve efficiencies through the pooling of resources and the avoidance of duplication of efforts by linking the management of PGRFA to the national commitments in other sectors, e.g. the meeting of the Aichi Biodiversity Targets of the CBD⁹.

8 Mba, C., Guimaraes, E.P., Gouantoueu, R.G., Hershey, C., Paganini, M., Pick, B. & Ghosh, K. 2012. Mainstreaming the continuum approach to the management of plant genetic resources for food and agriculture through national strategy. *Plant Genetic Resources: Characterization and Utilization*: 24-37.

9 Aichi Biodiversity Targets of the CBD. <http://www.cbd.int/sp/targets/> (accessed on 23 December 2014).

A well-designed National Strategy needs to be tailored to the particular circumstances and needs of the country, and should be amenable to review and updating as country situations change. The National Strategy should be fully in line with national goals and priorities, such as development plans, poverty reduction strategies, climate change adaptation plans and agricultural policies. It should also accommodate and complement sector specific policies related to PGRFA, such as a seed policy. The National Strategy for PGRFA should also be complementary to other national, regional and global conservation strategies or initiatives. In some cases it has proven beneficial to develop a regional PGRFA Strategy, which then covers more than one country.

A well-designed National Strategy needs to be tailored to the particular circumstances and needs of the country, and should be amenable to review and updating as country situations change.



Box 2. Regional Strategies for PGRFA

An example of the development of a Regional PGRFA Strategy is the *Strategic Action Plan to strengthen the conservation and use of Mesoamerican PGRFA in adapting agriculture to climate change (SAPM)*, 2014-2024. This strategy is focusing on 10 Mesoamerican crops (maize, beans, cassava, sweet potato, cucurbits, amaranth, peppers, papaya, avocado and a native forage (*Tripsacum*)) which are important for local and global food security and contribute to diet diversity and income generation for farmers. The development of the regional strategy was financed by the Treaty, through its Benefit-Sharing Fund.

Link to SAPM:

www.biodiversityinternational.org/uploads/tx_news/SAPM_2014_2024_1725.pdf

Similarly, countries of the South African Development Community (SADC) adopted the “Conservation Strategy for Crop Diversity Collections in the SADC Region” in 2008. This was followed by the “Plant Genetic Resources for Food and Agriculture Policy Guidelines”, published by the SADC Plant Genetic Resources Centre (SPGRC) in 2013. These guidelines provide a uniform framework to aid countries in implementing activities related to the conservation and use of PGRFA according to international norms and activities. They permit harmonization of operations across the sub-region and also provide the SPGRC with a ready tool for assisting countries in the domestication of the international normative instruments.

Link to SPGRC: www.spgrc.org.zm/

■ Why is a National Strategy for PGRFA needed?

A well-prepared, formally adopted and implemented National Strategy for PGRFA will be an asset for each nation, documenting its PGRFA-related activities by identifying the key steps needed to achieve conservation and facilitate use of those resources. A National Strategy for PGRFA is also a tangible means for demonstrating effectively that PGRFA, and hence their conservation and sustainable use, underpin food security, sustainable crop production systems and rural development.

The National Strategy for PGRFA may provide the basis for a country to streamline its internal capacities towards the conservation and use of its PGRFA and leverage those capacities to achieve clearly articulated domestic goals; participate in regional and global collaborations and live up to its bi- and multi-lateral commitments. In fact, irrespective of how much plant genetic diversity is available in a country and how much capacity and financial resources are available,

a set of clearly structured action plans for their management is needed to achieve in the most efficient and effective manner the goal of conserving and using them sustainably to the benefits of current and future generations.

In practical terms, a National Strategy for PGRFA may help a country in setting priorities, assigning budgetary and other resources, building capacity, and designing the seamless dovetailing of all aspects of national PGRFA management in service of its own goals. As a result, a country will be in a position to safeguard its PGRFA assets; facilitate access to needed genetic materials and govern the sharing of the accruing benefits; add value to them through crop improvement; and sustainably intensify crop production as may be needed.

■ **National Strategy for PGRFA and the Treaty**

Several practical tools are available to help countries make strategic decisions in relation to the ratification and implementation of the Treaty¹⁰. The implementation of the Treaty in each Contracting Party requires collaborations between a wide range of stakeholders from the public and private sectors and civil society. These collaborations require functional linkages between several government agencies, national research and development institutions, genebanks and farmer organizations. National coordination and planning can be beneficial to Contracting Parties in order to:

- Participate in the Multilateral System on Access and Benefit-sharing (Articles 10-13) including by making available, through the standard MTA, the PGRFA under the management and control of the Contracting Party and in the public domain, and by encouraging private holders of PGRFA to apply the same contract.
- Support national implementation of the Treaty in areas such as the conservation and sustainable use of PGRFA (Articles 5 and 6, respectively) and the implementation of Farmers' Rights (Article 9).
- Strengthen regional and international cooperation, that will add value and make more effective national efforts, in fields such as technology transfer, capacity building or the exchange of information to develop and strengthen the Treaty's Global Information System on PGRFA (Article 17).

¹⁰ The Secretariat of the International Treaty has created a webpage to include relevant existing practical tools developed by the Secretariat and its partners to help promote the ratification and implementation of the International Treaty in the national context: <http://www.planttreaty.org/national-pgrfa-planing>

- Prepare for the Sessions of the Governing Body and follow up actions to Resolutions made by it, including the obligation to regularly report to the Governing Body on compliance to the Treaty.
- Enhance national cross-sectorial cooperation to mainstream Treaty implementation, for instance, collaborations between the national focal points of the Treaty and the Convention on Biological Diversity on relevant processes, in particular in the context of the National Biodiversity Strategies and Action Plans (NBSAPs).

Complementing these commitments are the benefits accruable to Contracting Parties. For instance, the Treaty's Funding Strategy provides for financial mechanisms such as the Benefit-sharing Fund and the Global Crop Diversity Trust. Developing country Contracting Parties also benefit from capacity building, technology transfer and information exchange. Contracting Parties, especially from developing countries, will be better placed to benefit from these mechanisms if national coordination and planning are in place and regularly updated.

Planning and coordination, which can be made possible by a National Strategy for PGRFA, are also useful for countries that have not ratified the Treaty. For instance, a National Strategy would be useful for a non-Contracting Party that is embarking on the analysis of the need to ratify the Treaty and the obligations and policy changes that may arise from joining the Treaty.

■ **National Strategy for PGRFA and the Commission**

According to the Second GPA, overall progress on its implementation and the related follow-up processes will be monitored and guided by governments and other FAO Members through the Commission. To this end, the Commission, at its Fourteenth Regular Session, agreed on a format for progress reports as well as on criteria and indicators for monitoring the implementation of the Second GPA, building on previous work done by the Commission in the development of such indicators and reporting format. The National Strategy for PGRFA may help countries to coordinate and monitoring and reporting to the Commission and its Working Group.

■ **Background and purpose of the guidelines**

It is the practice of FAO to assist countries in developing strategies, best practices, and tools for the implementation of the GPA.

The primary purpose of these guidelines is to assist countries, especially developing countries in preparing a National Strategy for PGRFA as an overarching framework for facilitating the implementation of the Second GPA and for carrying out other PGRFA-related priority activities in furtherance of national agricultural, environmental and socio-economic goals. The guidelines are intended for use at country level. These may include public sector staff of ministries, departments, research and extension institutions, the academia, etc. The Guidelines can also be relevant for nongovernmental organizations, the private sector, and other stakeholders (including growers, producers, exporters, and their organizations), whose work is related to the conservation and use of PGRFA.

■ **How to use the guidelines**

There is no single method for developing a national strategy, and the process of developing a National Strategy may differ from country to country. The guidelines should assist countries in identifying steps, the order in which the steps taken as well as methods to guide the formulation of a National Strategy for PGRFA. The guidelines fall into three sequential stages, each of which includes a number of key steps. The suggested steps do not necessarily have to be followed in the same predefined order, and some of the steps may not even be necessary for each and every country. A checklist in tabular format is offered in Annex 1 to summarize the suggested stages and steps and to aid countries/users in monitoring progress. Technical guidance on specific aspects of PGRFA management is not included in these guidelines, but there are many resources which can provide these (see Annex 2 for some examples).

The guidelines should assist countries in identifying steps, the order in which the steps taken as well as methods to guide the formulation of a National Strategy for PGRFA.



III. PREPARING A NATIONAL STRATEGY FOR PGRFA — A STEP-BY-STEP APPROACH

■ Stage A. Establish a coordinating mechanism at national level

Some countries have efficient institutional structures for the coordination of PGRFA-related activities in place. In general, a large number of countries have functional National PGRFA Programmes that are constituted by an implementing arm, i.e. a network of national research and development institutions on one hand and the supervisory ministries or departments that coordinate and advise, on the other hand. Together, these two distinct groups of national stakeholders often lead PGRFA-related activities at country level. The identification of public and private sector research and development entities that are engaged with the conservation and use of PGRFA that could constitute part of the National PGRFA Programme is relatively straightforward across countries. But, significant variations exist across countries with respect to the national coordinating mechanisms. Two main types of coordinating mechanisms, centralized and sectoral, are prevalent amongst FAO member countries¹¹. For the centralized coordination format, a single institution is mandated with the coordination of most PGRFA activities in the country. For the sectoral variant, several institutions carry out PGRFA-related activities according to their mandates while coordination is implemented by a representative committee or council. In some cases, this advisory council or committee for PGRFA may be

11 Spillane, C., Engels, J., Fassil, H., Withers, L. & Cooper, D. 1999. Strengthening National Programmes for Plant Genetic Resources for Food and Agriculture: Planning and Coordination. *Issues in Genetic Resources* No. 8. International Plant Genetic Resources Institute, Rome, Italy.

a subcommittee of a larger body addressing a broader theme or themes, such as biological diversity. The subcommittee may also be part of the wider national agricultural research and extension system. Its establishment could even be through a legislative process that may be so detailed as to prescribe methods and constituencies for the appointment of members, usually specifying means for attaining a balanced membership – between the scientific community and the general public. Such an advisory body may be mandated with formulating recommendations on actions and policies for the collection, maintenance, and utilization of genetic resources; making recommendations for the coordination of genetic resources plans; and advising the head of the supervising ministry. Usually, the functions of the advisory body include the provision of advice to executive arms on mechanisms for providing farmers with high quality seeds and planting materials and on making plant genetic resources available to agriculture and strengthening capacities for public sector crop improvement.

In yet other scenarios, as is the case in many countries, a single body with such a sweeping mandate may be lacking with the sectoral arrangement being the norm. Representatives of an aggregate of institutions are constituted to drive overall national PGRFA activities. It is not uncommon, for instance, that the ministries responsible for agriculture, environment or forestry, through their respective institutes and academies, share responsibilities for the conservation and use of agrobiodiversity. In some other variants, a single entity is mandated with the collection and conservation of PGRFA and would then partner with several other organizations for the downstream plant breeding and seed delivery work.

Irrespective of whether a national programme – with mandates for advice and coordination – is a formally constituted single entity or is an aggregate of several bodies, what is important is that there is a recognised hub for concerted action in the PGRFA domain. It is also imperative that a PGRFA Programme derives from existing institutions and programmes in order to achieve maximum complementarities while eschewing overlaps and consequent wasteful multiplication of efforts and resources. This hub would serve as the take off point for further strengthening of capacities and elaboration of subsequent national strategies.

What is clearly sub-optimal and requires addressing is when a National PGRFA Programme (or a similar institutional mechanism) is weak or completely lacking.

Countries vary in the extent to which National PGRFA Programmes are incorporated in the overall developmental plans of the country, or included in specific agricultural or environmental policies and strategies. The development of a National PGRFA Strategy as a means to the efficient implementation of the Second GPA provides a country with the unique opportunity to mitigate these shortcomings

and achieve seamless cohesion between the conservation and sustainable use of PGRFA.

The different country scenarios will influence who will lead and coordinate the development of the National Strategy for PGRFA. If a National PGRFA Programme is in place it is recommended that the strategy is elaborated within this existing structure. If a National PGRFA Programme is not in place, a similar structure, encompassing all relevant stakeholders at country level must be established. The model framework as suggested here can with some modifications,

be used in both these cases. The most important aspects are that a coordination committee is appointed, with a clear mandate to lead the development of the National Strategy for PGRFA, and that the process is broadly participatory right from the start.

The 'National Programme for PGRFA' is the overarching term for the totality of the entities in a country that contributes to the management and their organizing structure and policy and legal instruments.

A1. Establish, maintain, or strengthen the National Programme for PGRFA

The 'National Programme for PGRFA' is the overarching term for the totality of the entities in a country that contributes to the management, i.e., conservation and use of PGRFA, and their organizing structure and policy and legal instruments. Such Programmes therefore exist in many countries and are contributing to and coordinating the activities related to plant genetic resources at national level. A National PGRFA Programme is usually cross-sectoral as the constituent entities usually are from different ministries (such as agriculture, environment, education, science and technology, culture, trade and tourism, etc.). A National PGRFA Program is therefore predicated upon collaborations between stakeholders with diverse mandates and that are possibly resourced independently. Increasingly, regional organizations and international agricultural research centres (especially the centres of the CGIAR) and national and international non-governmental organizations play critical roles in these domains and are often considered as *de facto* constituent parts of a National PGRFA Programmes.

The National PGRFA Programme may be a formal entity, established by legislation or regulatory decisions, or *de facto* opportunistic and, even possibly, transient assemblages of organizations driven by the myriad of interests and collaborations involving PGRFA. In practice, the design and function of a national

programme is country specific, shaped by many factors such as history, geography, the status of biodiversity, the nature of agricultural production and relationships with neighbouring countries with respect to shared biodiversity. It is therefore a considerable heterogeneity among national programmes in terms of their goals, functions, organization and infrastructure.

Box 3. What is a National PGRFA Program?

A National PGRFA Program is the network of national research and development institutions, mandated by supervisory ministries or departments, to lead PGRFA-related activities at country level. These activities may include a combination of the conservation of PGRFA (*ex situ*, *in situ* and on-farm), crop improvement, seed delivery and extension services. In a number of countries with functional National PGRFA Programmes (or similar structures), these are invaluable in coordinating the activities related to PGRFA at country level and provide advisory functions to the Ministry of Agriculture and other governmental entities, private sector, and civil society involved in the management of PGRFA. Another important role of such programmes has been in providing the practical mechanism for fostering synergies among stakeholders, (e.g. by developing joint project proposals; organizing joint activities etc.) across ministerial, sectoral, and other usual functional barriers.

In general, there are two main variants of the National PGRFA Programme operating in countries. These are the centralized and sectorial types. In the centralised type, the coordination and implementation of most PGRFA activities are the responsibilities of one institution, e.g. a national plant genetic resources centre or a specific agricultural department. In the sectorial type, there exists a network of different institutions with distinct mandates usually delineated along commodity crops and themes.

Regardless of which form and structure the National PGRFA Programme has in a given country, it is highly recommended that the programme — with its network of stakeholders — is involved in the process of developing the National Strategy for PGRFA. In countries where the National PGRFA Programme is well functioning, it may be expected that it takes a leading or coordinating role in the strategy development. However, in some situations, it may be that the National PGRFA Programme in place is not the best fit to coordinate the strategy development. This may be the case if the programme represents a very limited array of stakeholders, or if its members do not have capacity to drive the development of the strategy. In the cases where a National PGRFA Programme exists, but is not playing a prominent role in the coordination

and execution of activities, it may need strengthening before taking a leading role in the strategy development process. A National PGRFA Program can be strengthened by involving more — or a better representation of — stakeholders, and initiate meetings and activities that will contribute towards creating a stronger network. In countries where a National PGRFA Programme is not in place, it is recommended that a similar structure, encompassing all relevant stakeholders at country level, is established. The establishment of a new coordinating entity depends to a large extent on the commitment of national governments to provide the necessary funding, policy support and institutional/enabling framework; as well as the ability to create commitment and involvement among the relevant stakeholders.

A2. Establish or confirm a National PGRFA Committee

A key component of the National PGRFA Programme should be a team whose task is to coordinate and drive the development of the National Strategy for PGRFA. This team is here referred to as the 'National PGRFA Committee'. It is recommended that the team is made up of a small but representative core team whose combined expertise cover the different aspects of the management of PGRFA (e.g. policy makers, germplasm curators, plant breeders, seeds specialists, agricultural extension specialists, researchers in disciplines such as genetics, environmental science, genomics, plant biology, plant health officials, regulators, grower and producer organizations, etc.). The committee should be able to draw upon administrative resources from the National PGRFA Programme or the represented organizations for support with logistics, planning, documentation and meetings.

The National PGRFA Committee will need to select a leader or chair and have the ability to enlist participation of additional experts in all phases of the process as needed. Countries have been requested by FAO to confirm or nominate National Focal Points (NFPs) who will lead the monitoring of the implementation of Second GPA at national level as well as the preparation of the Country Report for the *Third Report of the State of the World's PGRFA*; it would be logical for this individual to be a member of the National PGRFA Committee, if not its chair.

The committee's responsibilities to the National PGRFA Programme may include serving as the action unit for the planning, coordinating, and raising funds for PGRFA activities. The Committee should hold regular meetings and be the medium for meeting national obligations to international processes and norms. Accordingly it should be the Committee which specifically initiates the process of developing or furthering the development of a National Strategy for PGRFA.

Specifically, with respect to the National Strategy for PGRFA, the Committee should:

- Oversee the process of preparing the National Strategy for PGRFA, providing guidance, coordination, and generally driving the process;
- Prepare a vision statement and goals for the strategy, initiate the consultation process, and create awareness among all identified stakeholders;
- Liaise with stakeholders to build support for the preparation of the national strategy, and ensure effective communication and information sharing;
- Lead the identification of goals, objectives, priorities and actions that will provide the main elements of the strategy;
- Lead the consultation process and review of the draft strategy;
- Mobilize support and financial resources for the preparation and implementation of the strategy; and
- Monitor progress and evaluate milestones (to be set during the planning process with contributions from the NFP, stakeholders, consulted experts, and working groups).

A3. Identify and involve PGRFA stakeholders

The National PGRFA Committee should identify the most important stakeholders who should be directly involved and consulted in the preparation of the National Strategy for PGRFA and establish close linkages with them (see A4). In this context, a stakeholder refers to an organization, network or individual that is actively involved in a specific project, process or sector relevant to the conservation, management and use of PGRFA, and whose interests may be affected by developments in this sector. Stakeholders include organizations and individuals who represent the diverse interests of the PGRFA sector, at central, regional, and local levels. All countries are encouraged to involve the following types of stakeholders:

- Government ministries and departments (e.g., agriculture, forestry, natural resources, environment, science and technology, planning, finance, trade, research and education);

- Local authorities, including state, zonal, or regional offices of ministries and/or departments;
- Farmers and local communities;
- National research institutions, including genebank curators, plant breeders, protected area managers;
- Universities and other educational institutions, including researchers/experts in botany, agronomy, crop science, taxonomy, and related disciplines;
- Non-governmental organizations (NGOs), such as professional development and conservation organizations;
- Civil society organizations (CSOs), such as farmers' and community-based organizations, indigenous and local communities, rural women's groups, civil society, religious organizations;
- Private-sector and parastatal companies, export promotion agencies, etc.; and
- Regional and international organizations, research centers, and networks which are involved in PGRFA conservation, use and management in the country.

Stakeholders include organizations and individuals who represent the diverse interests of the PGRFA sector, at central, regional and local levels.

Involving a full range of stakeholders in formulating the strategy can yield many benefits. Some of these benefits include increased ownership of the strategy, a broadened knowledge base and better general understanding of goals which facilitates achievement of objectives. Collaboration between stakeholders in this work will also increase the sustainability of the work, encourage more linkages between them, reduce the costs (through sharing of tasks), increase effectiveness and ensure more political and practical support. However, it should also be noted that too many stakeholders will not drive the process forward, and that there is a need to prioritize stakeholders that should be directly involved in the process of the actual preparation of the document. To ensure that all relevant stakeholders are involved, the committee that drives the strategy development should ensure that a budget to enable broad participation is secured at the beginning of the process. This is important in many countries to enable a participatory process.

Key roles for participating stakeholders include the following:

- Contributing to the process of preparing a national needs assessment;
- Participating in the preparation of a vision statement and goals for the strategy, and identifying strategic priorities and actions that will provide the main elements of the strategy;
- Serving as communications channels for the 'National PGRFA Committee' in its efforts to extend awareness of the process of preparing the national strategy, build support for it, and enhance communication and information sharing;
- Assisting and advising the 'National PGRFA Committee' in mobilizing support and financial resources for the preparation and implementation of the national strategy;
- Helping to select and advise *ad hoc* working groups and experts (see A5).

A4. Promote linkages and partnerships

Linkages and partnerships between stakeholders at country level can include formal and informal arrangements to connect individuals and organizations with an interest in PGRFA. Examples of such partnerships include those with and among:

- Public entities, private companies, NGOs, botanic gardens, genebanks, farmers, indigenous and local communities and individuals from the agriculture, research, environment, and development sectors;
- Stakeholders involved in agriculture and those involved in biodiversity conservation with an environmental protection perspective; and
- International and regional partners and, within the country, ministries or sectors at levels including communities.

These linkages are a means to involve broad-based participation in the strategy development process and other National PGRFA Programme activities. It is recommended that each country strive to establish such linkages or, if they exist already, that they are maintained and strengthened to support the preparation of the National Strategy for PGRFA and its implementation.

Strong national linkages can achieve:

- Improved collaboration and coordination at national level;
- Financial support, funding opportunities, and efficient use of resources to support PGRFA management;
- Partnerships and linkages between and among sectors, networks, decision makers, and actors in the field;
- Knowledge-sharing, capacity development and technology transfer;
- Increased awareness and recognition of particular crops and crop varieties, diversity-rich sites and practices (conservation, production, and distribution), farmers, and genetic resource users;
- Local action, e.g., through national implementation; and
- Policy, legal, and institutional support, and development of local and national strategies and regional and global conservation/management strategies.

The National PGRFA Committee should stimulate the creation of partnerships and linkages throughout the process of developing the National Strategy for PGRFA, for instance through dialogue, meetings and collaborative activities. It is especially relevant to foster linkages between the three domains of PGRFA management, namely conservation, use and seed delivery.

A5. Convene ad hoc working groups and enlist expertise

The National PGRFA Committee, with the advice of stakeholders, should convene working groups and enlist expertise as needed for addressing any specific component of the National Strategy for PGRFA. These working groups should consist of stakeholders who wish to take a leading role in seeing a particular topic discussed. The roles of the working groups and experts would therefore include providing information, possibly drafting components of the strategy, and reviewing parts of the strategy drafted by others. The Priority Activities (PA) of the Second GPA

The National PGRFA Committee should stimulate the creation of partnerships and linkages throughout the process of developing the National Strategy for PGRFA.

(Box 4) could serve as the template for identifying the types of specialities that might be needed from experts, such as disaster relief (PA 3), *in situ* conservation (PA 4); plant breeding (several PAs), access and benefit sharing (PAs 11, 12), and information systems (PAs 14, 15, 16). It may also be relevant to involve other experts, such as economists, sociologists and with the mass media.

Box 4. The 18 Priority Activity Areas of the Second GPA

1. Survey and inventory of plant genetic resources for food and agriculture
2. Support of on-farm management and improvement of plant genetic resources for food and agriculture
3. Promotion of *in situ* conservation and management of crop wild relatives and wild food plants
4. Assistance to farmers in disaster situations to restore crop systems
5. Support for targeted collection of plant genetic resources for food and agriculture
6. Sustaining and expanding *ex situ* conservation of germplasm
7. Regenerating and multiplying *ex situ* accessions
8. Expansion of characterization, evaluation and further development of specific subsets of collections to facilitate use
9. Support for plant breeding, genetic enhancement and base-broadening efforts
10. Promotion of diversification of crop production and broadening of crop diversity for sustainable agriculture
11. Promotion of development and commercialization of all varieties, primarily farmers' varieties/landraces and underutilized species
12. Support of seed production and distribution
13. Building and strengthening national programmes
14. Promotion and strengthening of networks for PGRFA
15. Construction and strengthening of comprehensive information systems for PGRFA
16. Development and strengthening of systems for monitoring and safeguarding genetic diversity and minimizing genetic erosion of PGRFA
17. Building and strengthening human capacity
18. Promotion and strengthening of public awareness on the importance of PGRFA

■ **Stage B. Establish the foundations for a National Strategy for PGRFA**

Preparation of the National Strategy for PGRFA will take several months, depending on factors such as the size and nature of the country, the complexity of the PGRFA sectors, and the extent to which consultation processes are required. Before the draft strategy is formulated, it is important that this is guided by a status assessment, and that the scope of the plan is agreed.

B1. Undertake or update a country assessment on the state of PGRFA

A National Strategy for PGRFA needs to be based on the specific context and situation in the country where it will be implemented. It is therefore highly recommended that a comprehensive assessment of the state of PGRFA in the country, and of the policy environment which influences their management, is done prior to the elaboration of the strategy. In most countries such an assessment is already available, either as part of a Country Report on the State of Plant Genetic Resources for Food and Agriculture, part of a country's establishment of a National Information Sharing Mechanism (NISM)¹², previous research projects, or as an independent study. If an assessment is already available, it should be determined whether this can provide the information necessary for the development of the National Strategy for PGRFA, before a new assessment is conducted.

In countries where an assessment is not available, this needs to be done as a first step in the preparatory phase. If the country assessment is more than five years old, and/or the situation at country level has changed (or is expected to have changed) significantly, it is also recommended to conduct a new country assessment. This section will present the general process and content of an assessment, in order for a particular country to determine what needs to be done.

12 The portal for the FAO National Information Sharing Mechanisms is at <http://www.pgrfa.org/gpa/selectcountry.jsp>

Box 5. Linking the country assessment to other FAO processes

A set of indicators¹ and a reporting format for monitoring the implementation of the Second GPA has been agreed by the Commission. The Reporting Format guides countries in the assessment of progress in conservation and use of PGRFA, including in the preparation of country reports. The reporting format sets out questions, the answers to which will capture a country's progress in meeting the indicators for progress in implementing the Second GPA. The assembled information gathered by this reporting format would provide the core information for a country's assessment of the status of its PGRFA, and for periodic assessment. In preparation for the compilation of the *Third Report on the State of the World's PGRFA*, FAO will also provide specific guidelines for the preparation of country reports. It would be beneficial to link an assessment for the preparation of a National Strategy for PGRFA with these processes, e.g. with the preparation of a county report or a periodic assessments of the implementation of the Second GPA. This will also enable the country to avoid duplication of work and streamline their processes.

1 <http://www.fao.org/docrep/meeting/027/mf557e.pdf>

A strategic assessment of the state of PGRFA will quickly establish on-going activities across the PGRFA continuum, reveal apparent gaps, and help to identify priorities for the planning phase of the National Strategy for PGRFA. Typically, the assessment should cover:

- International agreements entered into, relevant to PGRFA, e.g., the CBD and the Treaty;
- National laws, policies, and strategies governing the conservation and use of PGRFA, including sector-specific strategies and national programmes;
- Institutions, programmes, and activities that fall within the purview of the National PGRFA Programme (such as crop-specific forums, variety release committees, production associations, plant import/export administrations, and plant health organizations);
- Regional and sub-regional programmes and networks;
- Overall pertinent agricultural and environmental initiatives in the country;

- An overview of the known PGRFA diversity in the country, including the main factors affecting the diversity;
- Priority crops for the country based on clearly defined indices, e.g. related to food security, livelihood development, poverty reduction, sustainable agriculture, environmental resilience and/or socio-economic activities;
- Current and potential instances of *in situ* conservation of PGRFA, inside and outside protected areas;
- Current and potential extent of *ex situ* conservation of PGRFA, including type and state of the germplasm, storage facilities, collection missions, etc.;
- Current utilization of PGRFA, including characterization, evaluation, and use in pre-breeding and breeding activities;
- Promotion of diversification/broadening of crop production and development and commercialization of crop varieties (including underutilized);
- Activities in support of seed production and distribution; and
- Status and challenges related to institutional and human capacity.

The outputs of the assessment will help to identify country priorities and generate some of the key elements that can be addressed in the strategy. Some of these elements may include the following:

- The current and potential contributions of PGRFA to food security, agriculture, the environment, and socio-economic activities;
- Current or potential priority crops in the country;
- The status of the conservation of PGRFA, their use in plant breeding, and the delivery of high quality seeds and planting materials;
- Validations of the current and potential PGRFA stakeholders;
- The factors driving change in the management of PGRFA;

- Existing trends for crop and agricultural production and productivity, including challenges and opportunities;
- Unmet needs and priorities for capacity building to enable the conservation, sustainable use, and delivery of high quality seeds and planting materials; and
- Existing and desirable strategic partnerships across institutions and stakeholder entities.

B1.a. Coordination. The National PGRFA Committee, with advice from the broader group of stakeholders, should appoint a working group to compile data and information for the assessment, and for writing assigned sections. The National PGRFA Committee should oversee this work and meet regularly to assess the progress. It is recommended that the working group and the National PGRFA Committee familiarize themselves with all available assessments, such as the latest *Country Report on the state of the PGRFA*, as well as the ongoing efforts in monitoring the implementation of the Second GPA.

B1.b. Preparation. The working group should determine the scope, structure, and content of the country assessment, indicating the approximate length of each section, in collaboration with the National PGRFA Committee. It is recommended that the working group review the guidelines for previous Country Reports and for the establishment of an NISM. The working group should then prepare a draft outline for review by and discussion with the National PGRFA Committee. When the outline is approved, the working group could designate persons to assemble information and prepare a first draft of each section. This work should start early in the process leaving sufficient time for reflection, discussion and analysis.

It is also highly recommended that the National PGRFA Committee advises the working group of existing information systems and tools that can provide assistance in preparation of the country assessment, such as the Reporting Format for Monitoring the Implementation of the Second GPA¹³, the NISM, WIEWS, Genesys, etc. (Annex 1). For any specific areas or difficulties it is recommended to involve experts, such as statisticians, economists, taxonomists, and crop scientists.

13 CGRFA-15/15/Inf.9.

B1.c. Analysis. The assessment needs to go beyond a description of resources and stakeholders at country level, in order to provide a solid base for developing a national strategy. It is expected that the collected data are analysed, so that the assessment can report on the state of the resources and the capacities to manage them and identify needs and priorities. It is also crucial to analyse the policy context of the country, to ensure that the strategy will be in line with the regulatory frameworks in place, such as seed policies and laws, national biodiversity acts and plans, and operational master plans of relevant agencies and organizations. It may also be valuable to identify national priority crops in the assessment, to ensure that the National PGRFA Strategy will include provisions for strengthening linkages between conservation, use, and distribution of planting material to farmers (the PGRFA continuum). Analysis of the assessment may also reveal pitfalls such as the risk that the strategy document may rely unduly on one administrative unit to the exclusion of other stakeholders or focus too strongly on one component of the continuum at the expense of the others.

Box 6. Regulatory frameworks at national level

Countries have regulatory systems in place that will impact PGRFA. Some regulations may have predated the Second GPA and others may have been developed to facilitate its implementation. Regulatory systems may derive from national motivations and they may also have resulted from obligations countries have under international and regional agreements and regional agreements.

B1.d. Review and validation. The working group should assemble a first draft of the assessment, to be discussed and reviewed by the National PGRFA Committee. The assessment that emerges from this process should then be presented in a national stakeholder workshop, with broad stakeholder representation, in order to validate the document. The stakeholders that should be involved in this process should be the same as those identified in section A3.

B2. Define the scope of the National Strategy for PGRFA

The National Strategy for PGRFA should spell out clearly what it sets out to accomplish, and help stakeholders to take the necessary identified steps towards the accomplishment of defined goals. The scope of the strategy should be developed in an inclusive process, involving the broadest range of stakeholders, and be based

on the country assessment and context. The following aspects should be carefully considered when deciding the scope of the National Strategy for PGRFA.

B2.a. Crops/taxa. In determining the crops and taxa the National Strategy for PGRFA should be relevant for, countries can choose to focus on all PGRFA, or a specific set of prioritized crop species. Two distinct approaches are normally referred to, either

- i. all crops grown in the chosen area (e.g. the country), or
- ii. specific priority crops (e.g. those most important to food security, livelihood development, poverty reduction, sustainable agriculture, environmental resilience and/or socio-economic activities at country level).

The decision on which approach is taken will depend on the quantity and quality of existing data, the human and financial resources available, as well as the goals and priorities of the authorities. To maximize the conservation and use of PGRFA, a combination of both approaches could be considered, e.g. to prepare a national strategy encompassing all PGRFA in the country, and in addition develop specific strategies for the highest priority crops.

B2.b. Geographic coverage. The National Strategy should define its geographical scope. It is highly recommended that the geographical scope of the National Strategy for PGRFA is the whole country. However, in some cases, for instance where the country is very large, very diverse or very divided, it may be more logical and more efficient to choose a different approach, e.g. to develop separate strategies for specific regions of the country, or focus on one particular region. To maximize the conservation and use of PGRFA, a combination of several approaches can be considered, e.g. to prepare a national strategy valid for the entire country, and in addition develop specific strategies for areas of particular interest or concern (e.g. a centre of domestication, or an area with particularly high level of diversity).

B2.c. Complementarity with national, regional and global strategies. A National Strategy for PGRFA should be in full alignment within the larger policy context of the country and be complementary to other national, regional and global conservation and use strategies or initiatives. It is highly recommended to ensure harmonization between interacting conservation and use plans at the earliest stage possible, and promote the formation of partnerships that contribute to common goals. If the country has developed a National adaptation programme of action (NAPA) or a

National Biodiversity Strategy and Action Plan (NBSAP), for instance, the National Strategy for PGRFA needs to be in line with and complement these.

B2.d. Participatory approach. Conservation, management and use of PGRFA will involve farmers, who are managing these resources on a daily basis. To achieve this, farmers and local communities need to be supported in their efforts to conserve and use landraces while at the same time allowing them access to seeds and planting materials of improved varieties. It is recommended that the National Strategy for PGRFA highlights the need for local participation and promotes opportunities for farmers and local communities to be part of national activities.

B2.e. Content of the National Strategy for PGRFA. These guidelines are meant to be customizable to the priorities of the country. In this respect, the Second GPA, with its 18 Priority Activities (PAs) (given in Box 4) could serve as a guide for articulating the contents of the National Strategy for PGRFA. It is not a requirement that the national strategy should cover all 18 PAs, but it is highly recommended that aspects of all the four main areas are included, namely *in situ* conservation and management, *ex situ* conservation, sustainable use, and institutional and human capacities. Each country will need to assess and prioritize the activities they consider most relevant, based on the country assessment and context. A critical advantage for using the Second GPA as template for developing the activities to be implemented under the National Strategy is that it facilitates the eventual reporting on its implementation by the country.

B2.f. Complementarity within and between sectors in the PGRFA Continuum. The PGRFA continuum approach¹⁴ requires close linkages within and between each of the three domains of conservation, use and seed delivery. In addition to the general provisions of the strategy, relating to the priority activities of the GPA, it is therefore strongly recommended that the demonstration of the continuum approach is

Farmers and local communities need to be supported in their efforts to conserve and use landraces while at the same time allowing them access to seeds and planting materials of improved varieties.

¹⁴ Please see explanation under the sub-section, *PGRFA and the Challenge of Food Insecurity and Malnutrition*, of Section II. Background.

reflected in the strategy. This will be achieved by stipulating for the country's priority crops the series of activities and the respective responsible entities pertaining to the three components and the intervening linkages thereof.

It is similarly important to ensure complementarity within each domain. Conservation *ex situ* should therefore not be viewed as an alternative or in opposition to *in situ* conservation, but rather both should be viewed as complementary approaches to the management and safeguarding of PGRFA. It is highly recommended that such complementarity is emphasized in all plans and strategies relevant to PGRFA, and that holistic actions are proposed.

B2.g. Financial and human resources for implementation. Implementing a National Strategy for PGRFA will need funding and commitment from all stakeholders and partners. If the financial resources in the country are limited or not secure, the scope of the strategy and the activities it prescribes might need to be adjusted accordingly. Similar considerations should be made if the country has limited human resources and/or few committed stakeholders to drive the implementation of the strategy.

B3. Formulate a vision statement

With an assessment of the state of the country's PGRFA at hand, and an agreed scope, the development of a vision statement and goals for the conservation and sustainable use of PGRFA in the country can begin. The long-term vision for the state of diversity of genetic resources in the country should be an inspirational statement reflecting the importance of PGRFA for people and national interests such as food security, agricultural and rural development, management of natural resources and adaptation and resilience to climate change. The vision statement should provide inspiration for both strategic decisions and daily operations. It is important to relate the vision statement to the long-term vision for the country, and the timeframe should be aligned with other long to medium term national development plans. The vision statement should be developed by the National PGRFA Committee with the advice of stakeholders and draw from information gained from the country PGRFA assessment.

Individual countries need to work towards their vision statement at individual levels, and through various ways. A simplistic way of developing a vision statement may be to:

- 1) Discuss the country's aspirations and long-term expectations for a specific sector;

- 2) Agree on a time-frame and envision a “best scenario” for the sector. The scenario should be realistic and one that stakeholders can commit to;
- 3) Formulate the vision statement, based on the outcome of 1 and 2. E.g. By 2025, Country X will understand, conserve and use sustainably all plant genetic resources for food and agriculture in the country, and be a regional hub for expertise and capacity building in these areas; and
- 4) Commit to the vision statement, by making sure it forms the basis of the goals, objectives and activities.

The goals of the national strategy will emerge from the assessment, the agreed scope and the vision statement, and must be clearly defined.

B4. Formulate goals and objectives

The National Strategy for PGRFA is not developed in isolation, but should be conceived as providing the template for leveraging the management of PGRFA to address national policies and development plans. The Strategy should be fully in consonance with applicable national goals and priorities and should therefore relate to such other relevant instruments as agricultural development plans, poverty reduction strategies, climate change adaptation plans and agricultural policies. It should also accommodate and complement sector specific policies, such as the national seed system policy.

The goals of the national strategy will emerge from the assessment, the agreed scope and the vision statement, and must be clearly defined. The goals should be stated as general intentions, describing the purpose and desired result of the strategy. They should be in line with overall national priorities as well as contribute to the global PGRFA objectives to which countries have committed themselves, e.g. the Treaty and the CBD.

The objectives of the National PGRFA Strategy should be specific and measurable, defining a concrete target that the plan intends to accomplish. Objectives of a National Strategy for PGRFA could include:

- Efficient *in situ* and *ex situ* conservation of PGRFA is implemented at country level, including data management to facilitate access;
- A systematic and coordinated national approach, supporting on-farm

management of PGRFA, including landraces and neglected and underutilized species, is established;

- Linkages between PGRFA collection holders (e.g., genebanks, nurseries, plantations, farms, protected areas) and users, (i.e., the farmers that use them directly and/or the plant breeders that use them as raw materials to develop elite crop varieties) are established for all priority crops;
- Linkages between crop improvement and the seed-delivery sectors are established;
- National crop-improvement goals have been reached through improved utilization of PGRFA;
- Efficient delivery of high quality seeds and planting materials of suitable varieties to the growers in all areas of the country is achieved;
- National rules and legislations promoting and facilitating conservation and use of PGRFA are implemented successfully;
- Materials to build stewardship and awareness on conservation and use of PGRFA in the country are developed and distributed; and
- Educational opportunities to increase awareness about conservation and sustainable use of PGRFA are provided.

These objectives should also be mainstreamed into other national programmes, e.g., those of the National Biodiversity Strategies and Action Plans (NBSAPs) and the national programmes within the ministries of environment and agriculture. It is recommended to take advantage of regional strategies that may have been developed for PGRFA for guidance and information, especially about resources and support for national efforts.

A practical approach could be to look at the gaps that were identified through the country assessment, and use the 18 Priority Activities of the Second GPA (see Box 4) as a template for formulating goals and objectives. It may not be feasible for every country to address all 18 PAs in their National Strategy for PGRFA. Countries should therefore prioritize the most relevant and important areas identified. Although the National Strategy for PGRFA should be realistic in

its goals and objectives, it should be noted that aspirational objectives may also be included. This should be evaluated in each situation, but may be particularly relevant for countries with opportunities for obtaining extra-budgetary resources.

B5. Formulate an action plan

The main content of the National Strategy for PGRFA should be in the form of a clear action plan with defined activities, targets, indicators and time frame. The activities can be both normative (e.g. at a political, institutional, legislative, or economic level) and operational (e.g. technical activities related to germplasm conservation, plant breeding, seed delivery, etc.). The normative activities usually cover enabling conditions and incentives necessary to achieve the objectives of the plan, while the operational activities are implemented by stakeholders through specific programmes, projects and activities on the ground. The action plan needs to have a defined time frame; a medium-term timeframe from 5 to 10 years is practical in most cases. It is also highly recommended to provide a cost estimate for each activity, in order to guide governments and other stakeholders during implementation. Cost estimates are also essential in informing and attracting donors.

The responsibilities for national coordination and the roles and tasks of national stakeholders should be outlined in the National Strategy for PGRFA. These would include the responsibilities for managing and coordinating activities. It should be clearly enunciated which office, entity, institution, or person is responsible for delivering on what activity and by when. Lines of authority, communication requirements, staff capacity, and training needs required to maintain quality standards should also be included.

The action plan will need to define success criteria or indicators for each activity. It is also highly recommended that the National Strategy for PGRFA include quantitative (country based) performance targets. This would ensure that the strategy is a commitment of the country to achieve particular targets. The set of indicators¹⁵ developed by the Commission to guide the implementation of the 18 Priority Activities of the Second GPA provides a ready means for determining gaps and needs.

¹⁵ CGRFA-15/15/4.1.

The concept of use is fundamental to the conservation and management of PGRFA, and is acting as bridge between conservation and delivery of improved varieties to farmers.

The concept of use is fundamental to the conservation and management of PGRFA, and is acting as bridge between conservation and delivery of improved varieties to farmers. Sustainable use encompasses a wide range of actions, including characterization, pre-breeding, genetic enhancement, base-broadening, diversification of crop production, development and commercialization of varieties, supporting seed production and distribution and developing new markets for local varieties and products. The continuum approach to the management of PGRFA, as already explained, demonstrably enhances efficiencies of processes in a demand-driven crop improvement program. Getting the high-quality seeds and planting materials of the most suitable crop varieties efficiently to the farmers is the hallmark of a successful crop improvement program and justifies investments in germplasm conservation. The utility of the National Strategy for PGRFA — for the practitioners and policy makers alike — is therefore greatly enhanced by including the demonstration of the continuum approach to the management of PGRFA for the country's priority crops. The National Strategy for PGRFA should therefore encourage and promote sustainable use of PGRFA, by strengthening the links between stakeholders working with conservation and management and those involved in research, plant breeding, crop production, seed production, etc. For instance, showcasing the continuum of interventions from conservation through value addition in plant breeding to seed delivery for a priority crop is an effective means for demonstrating the direct translation of upstream activities relating to germplasm conservation to the tangible impacts of improved yields, food and nutritional security, income and livelihoods.

It is recommended that the National PGRFA Committee formulate the draft action plan, with the support of the National PGRFA Programme and other groups or individuals as required, before initiating a review with a larger stakeholder base. The draft action plan can include suggested priority activities, derived from the country's goals, the assessment and the Second GPA. The draft action plan then needs to be reviewed through a participatory process. This review process should involve stakeholder consultations. Based on the advice from stakeholders, experts, and consultants, the National PGRFA Committee should revise and update the action plan accordingly. Final consultations and validation of the action plan is described in Stage C. Finalizing and presenting the National Strategy for PGRFA.

Table 1. Example of an action plan

Goal/ objective	Activities	Implemen- ting agency	Success criteria	Time frame	Budget
What are the overall, broader impacts to which the activity will contribute?	What should be done to achieve the country objectives?	Who is the responsible unit (or person) for each task?	What are the indicators to measure whether and to what extent the activities have achieved the expected results?	By when should the task have been achieved?	What are the costs of each activity?

B6. Budget and mobilization of resources

Implementing a National Strategy for PGRFA will require financial resources. In the same way that the strategy — and action plans — is the result of a broad participatory process, it is expected that the funding of the national strategy will derive from a broad range of sources. A realistic and detailed cost estimate for the individual elements of the action plan will facilitate the mobilization of resources and funding for the implementation of the strategy.

The willingness of the country to make core domestic budget resources available is essential for the implementation of the plan. Additional funds should come from the implementing stakeholders and from other sources including assistance from external partners or donors, or through other innovative financial mechanisms. The National PGRFA Committee with the advice of stakeholders must play the key role in determining the costs, which should not exclude those for human resources to carry out the process. It is also recommended that a resource mobilization scheme is agreed upon among stakeholders and included in the national strategy.

B7. Formulate a monitoring plan

When preparing the national strategy it is important to consider the inclusion of provisions that will allow an efficient monitoring of progress, financial resources, and deliverables for its subsequent implementation. Monitoring is an essential part of any strategic plan for a number of reasons, including to:

- Evaluate the effectiveness of the activities;
- Facilitate early detection of potential or emerging problems;
- Record changes over time;
- Make informed decisions and adjustments; and
- Plan on-going management activities.

It is recommended the plan should include details for when, how, and by whom the activities and deliverables in the action plan should be monitored. The national strategy should therefore include a specific monitoring plan, where these details are outlined for all the priority actions and deliverables. The monitoring plan can either be an integral part of the action plan, or it can be written as an independent table. The following questions can be useful when preparing a monitoring plan:

- What are the key objectives of monitoring the activity?
- How should the data be used?
- What should be monitored?
- When and how often should activities and deliverables be monitored?
- Who should be involved in monitoring and how?
- How should the monitoring data be managed?

Table 2. Example of a monitoring plan

Goal/objective	Activities	Performance indicator	Baseline	Target	Data collection	Responsibility
What are the overall, broader impacts to which the activity will contribute? (Same as in the action plan).	What should be done to achieve the country objectives? (Same as in the action plan).	What quantifiable measures can be used to determine performance in relation to the goals and objectives?	What are the starting conditions against which progress can be measured?	What is the specific, measurable goal, linked to the indicator?	What are the tools and methods to observe and collect data to measure the indicator?	Who is the responsible unit (or person) for monitoring each task?

B8. Formulate a communication plan

Communication is part of the vertical process that supports the development of the National Strategy for PGRFA. Preparation of a communication plan is therefore recommended, in order to identify the main target audiences and the best means of communicating results of the National Strategy planning process. The communication plan should outline the various products that need to be prepared to assist the National PGRFA Committee to communicate effectively and to report on progress during the preparatory process. Opportunities should be identified for promoting the preparation of the National Strategy for PGRFA, including through newsletters, conferences, public meetings, and news media. Stakeholders should be encouraged to participate in events where they can highlight the need for a National Strategy for PGRFA, and inform other groups, networks, and stakeholders on the process of developing the strategy. Updated information material will assist them with such advocacy tasks.

■ **Stage C. Finalizing and presenting the National Strategy for PGRFA**

All stakeholders need to be given the opportunity to contribute to the development of the draft National Strategy for PGRFA. Based on the consultation process, the National Strategy for PGRFA should be finalized and validated among all stakeholders. When a final agreement has been reached on the strategic priorities and action plan, the national strategy can be considered final.

C1. Prepare a draft National Strategy for PGRFA, forming the basis for stakeholder review

The outputs of steps B.1 to B.8 above constitute the elements of the strategy and should lead to a single cohesive document, i.e. the draft National Strategy for PGRFA which would then form the basis for further consultations, review and eventual validation. Typically, the draft National Strategy for PGRFA may have the following parts:

- Background and introduction, including the rationale for and process of developing the National Strategy for PGRFA
- Key findings of the country assessment
- Scope of the strategy
- Vision statement, goals and objectives of the National Strategy
- Action plan
- Budget and mobilization of resources
- Monitoring and evaluation
- Communication plan

It is recommended that the draft strategy document is prepared by the National PGRFA Committee itself or by contracting one or more individuals for producing the actual text. Clear terms of reference and direction from the National PGRFA Committee are needed to ensure that external writers deliver what is required. It is also important that the committee is fully engaged in the preparation process

by providing advice and reviewing draft sections of the document as they are developed, prior to broader review by stakeholders.

C2. Coordinate the consultation process

The stakeholder consultations must be well planned and facilitated in order to ensure meaningful participation. Care should be taken to avoid unduly tedious processes with uncoordinated stakeholder involvements. The aim of the consultation process is to capture the perspectives of the stakeholders so that inputs from a broad spectrum of interest groups contribute to shaping the final version of the National Strategy for PGRFA. An important output of stakeholder consultations is also to finally agree on timelines, management responsibilities and key deliverables.

Since PGRFA tend to fall between the remit of the nature conservation community and the plant genetic resource and agricultural community, it is essential to fully involve stakeholders from both these sectors. Each country will need to decide on a consultation process appropriate to its needs, circumstance and budget.

The National PGRFA Committee may wish to make the entire document available for comments from all stakeholders and complement this approach with focused workshops and discussions to review particular elements of the strategy. Guiding principles for an effective consultation process include:

- 1) Identification of the target stakeholders, individuals, and organizations is crucial for effective consultations (see A3).
- 2) Preparation of participants by providing them with necessary information, including clear terms of reference for the consultation, well in advance of the consultations.
- 3) Identifying barriers to participation, including language barriers, discomfort during participation in open forums, or lack of financial resources for travel, and considering options to overcome these.
- 4) Establishing timelines for the consultation process.
- 5) Carefully documenting suggestions made during all consultations.

In many cases, it is practical and relevant to solicit inputs from stakeholders electronically, through email, electronic conferences/meetings etc. For the best possible consultation process, allowing all stakeholder equal opportunities to provide feedback and/or contribute to discussions, a combination of electronic consultations and personal meetings are recommended. To allow for the feedback of some stakeholders, the draft strategy may have to be translated. This is particularly relevant in cases where several languages are spoken in the country. It is also recognized here, that different audiences may need different adaptations of the document. These are issues the National PGRFA Committee needs to discuss and find a solution to.

Very importantly, the finalization and validation of the draft strategy should always be followed by stakeholder commitment to implement it. It is therefore recommended that specific “next steps” are agreed on during the consultation process, which can help to initiate the implementation phase.

C3. Revision and final presentation of the National Strategy for PGRFA

Based on the inputs received through the consultation process, the National PGRFA Committee should revise the consultation document. The committee will thus act as a “filter” and decide on which comments and suggestions should be reflected in the document. It is important that the committee is able to clarify why particular suggestions were not included in the final document. An open dialogue with the stakeholders is beneficial in the revision period.

It is important to agree on how the National Strategy for PGRFA should be presented and promoted in the country, for decision makers and for the wider public. It is recommended that the final National Strategy for PGRFA is made available in printed and electronic form and disseminated widely, including to all involved stakeholders. The organization of events, as well as the timely use of media (newspaper, TV, leaflets, radio etc.), should also be considered in creating awareness for the National Strategy for PGRFA.

IV. IMPLEMENTING THE NATIONAL STRATEGY FOR PGRFA

The implementation of a National Strategy for PGRFA means turning the written document into reality. This implies the execution, monitoring and evaluation and reporting on the agreed activities. When a national strategy has been developed, a number of challenges with regard to its implementation can arise, including:

- Unsporting policy and legal framework;
- Lack of commitment and dedication among stakeholders;
- Lack of political will to implement the strategy;
- Unclear coordination and decision making;
- Lack of resources (funding, projects etc.);
- Lack of personnel and capacity;
- Unclear roles and responsibilities;
- Limited cooperation and networking;
- Lack of awareness.

How the National Strategy for PGRFA is implemented will especially depend on the commitment of stakeholders, the political will and support and the coordination of the National PGRFA Programme (or similar entity where a national programme is not in place). To support the National PGRFA Programme in coordinating the implementation of the national strategy, it is recommended that the National PGRFA Committee continues to support the National PGRFA Programme and the stakeholders throughout the implementation phase, for instance with regard to monitoring and evaluation. It is also recommended to identify "lessons learnt" in overcoming challenges related to the implementation (e.g. as part of the monitoring and evaluation procedures), so that these experiences may shape the planning and implementation of future activities through some feedback loop.

■ **Ensure enabling capacities**

Enabling capacities will be essential for the implementation of the National Strategy for PGRFA and should therefore form part of the strategy. The capacities may include:

- *Policy and Normative*: capacity to formulate and implement policies and lead policy reform;
- *Knowledge*: capacity to access, generate, manage, and exchange information and knowledge;
- *Partnering*: capacity to engage in networks, alliances, and partnerships; and
- *Management*: management capacity to implement and deliver programmes and projects, from planning to monitoring and evaluation.

In some countries it can be beneficial to establish formal commitments with/between Ministries (MoU), other stakeholders and donors to ensure enabling capacities.

■ Disseminate and raise awareness

The National PGRFA Committee should use a variety of ways and means to raise awareness of the National Strategy for PGRFA. These can include:

- Preparing a Statement of Commitment, indicating official government endorsement of the National Strategy for PGRFA;
- Providing means for public-sector institutions, such as research institutes, universities and others, to commit themselves to supporting the implementation of the National Strategy for PGRFA;
- Providing means for nongovernmental organizations and the private sector to commit to supporting the implementation of the National Strategy for PGRFA;
- Distributing the National Strategy for PGRFA widely; and
- Preparing communications material to accompany the National Strategy for PGRFA, such as a summary document, an executive brief, pamphlets, fact sheets, or video material.



■ **Implementation of activities**

The steps of implementation should as much as possible follow the sequence of events outlined in its action plan. Implementation of the national strategy will require several years of effort and involve a diverse range of individuals and organizations. It is crucial that all stakeholders involved contribute to the implementation process, with time and / or financial resources. The implementation process should be fully transparent and the National PGRFA Committee should make sure that stakeholders are kept informed throughout the implementation process. To oversee the implementation and ensure a well-coordinated process, one may consider to:

- Establish lead agencies, and ideally appoint thematic focal points, for each strategic priority and associated actions;
- Identify partner organizations that, in collaboration with the lead agencies, will implement strategic priorities and actions;
- Indicate the expected outcomes associated with the strategic priorities and actions;
- Estimate the time required to achieve the desired outcomes (on-going action or achievable in the short, medium, or long term);
- Identify or create the institutional arrangements necessary to oversee the implementation;
- Translate the action plans into annual work plans, with specific targets and milestones; and
- Ensure regular contacts stakeholders, including the dissemination of information on progress, funding and other aspects related to the implementation of the strategy.

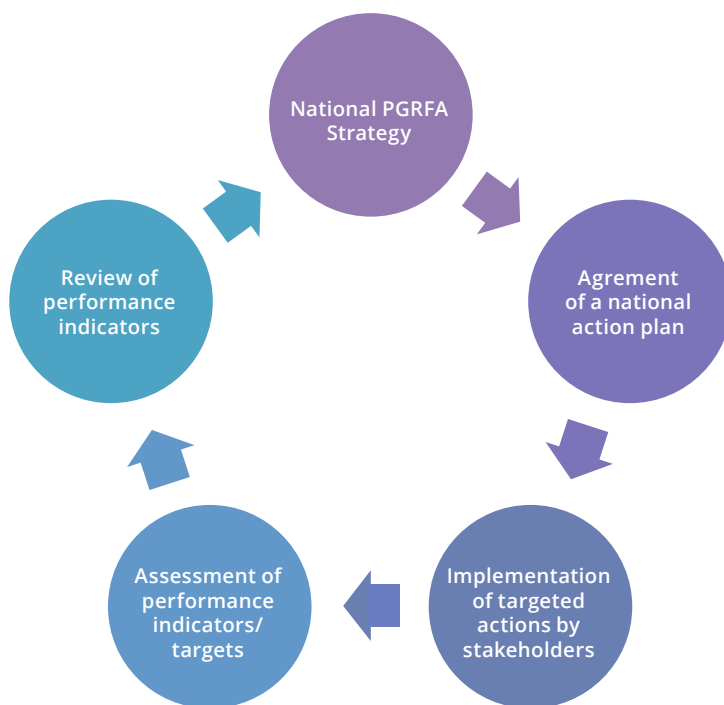
The monitoring of progress should be an integral part of the implementation process.

■ Monitoring and evaluation

Monitoring the National Strategy for PGRFA is part of the overall responsibility of the implementing authority, i.e. the National PGRFA Programme or a similar national entity. The monitoring should as much as possible follow the agreed action plan (see Section B5) and progress can be communicated through annual/regular progress reports. If possible, it is also highly recommended to have an external body to evaluate the implementation (especially mid-term and end evaluations).

The monitoring of progress should be an integral part of the implementation process. Receiving periodic feedbacks on the implementation of activities is essential for the eventual revision of the National Strategy as the lessons learned will certainly shape the subsequent versions. Monitoring results should thus inform any subsequent revision of the national strategy (see Figure 1).

Figure 1. Life cycle of the National Strategy for PGRFA



■ **Support information systems and data management**

One of the major factors hindering effective conservation and use is the lack of easy access to data, and complicated information exchange due to the many different approaches in managing data. The implementation and monitoring of a National Strategy for PGRFA will enable considerable data to be gathered at country level. It is therefore highly recommended to establish ways and means for the country to effectively and efficiently establish or update existing information systems with new data. Similarly, it must be ensured that all stakeholders have access to the information and can participate in the data management process.

Efficient information and data management systems at national level will also enable the country to be part of worldwide networks facilitating scientific and technical cooperation through information exchange.

A large number of national, regional and global tools and information systems are available online (Annex 1), and might be useful in establishing, updating and aligning data management tools at national level. Many countries have for instance established a National Information Sharing Mechanism (NISM). The NISM is specifically designed for monitoring the implementation of the GPA, and form the national repository for information on the agreed indicators and targets. When established, this is an information source that should be regularly updated with current information. It is therefore highly recommended that the NISM is actively used and updated in the process of preparing and monitoring the National Strategy for PGRFA.

ANNEXES



ANNEX 1. SOME EXISTING TOOLS AND INFORMATION SYSTEMS

Name	Description	URL
Bioversity International	Contains links to various information resources and databases, as well as relevant training material	www.biodiversityinternational.org
FAOSTAT	Agricultural statistics and data	http://www.faostat.fao.org/
GBIF	Global biodiversity data	http://data.gbif.org/
GENESYS	Global database of major <i>ex situ</i> genebank holdings	http://www.genesys-pgr.org/
GRIN	Germplasm Resources Information Network	http://www.ars-grin.gov/
IUCN Red List	Database of red list (extinction threat) assessments	http://www.iucnredlist.org/
Plant list	Working list of all known plant species	http://www.theplantlist.org/
Royal Botanic Gardens Kew	Herbarium catalogue containing images and information of a large range of specimens	http://apps.kew.org/herbcat/navigator.do
SINGER	CGIAR System-wide Information Network for Genetic Resources	http://singer.cgiar.org/
US Genetic Resources Information Network (GRIN)	Database of USDA <i>ex situ</i> genebank holdings	http://www.ars-grin.gov/npgs/acc/acc_queries.html
World information sharing mechanism on the implementation of the Global Plan of Action (GPA) for PGRFA (WISM-GPA)	Provides access to countries NISM portals and databases	www.pgrfa.org

ANNEX 2.

CHECKLIST FOR DEVELOPING A NATIONAL STRATEGY FOR PGRFA

Stage or task	Yes	No
<i>Stage A. Establish, maintain, or strengthen the national framework for PGRFA</i>		
Has the National Focal Point for PGRFA been identified?		
Is there an active PGRFA Programme in the country?		
Is there a suitable committee in place to drive the preparation of the National Strategy for PGRFA?		
Have the PGRFA stakeholders in the country been identified?		
Are there active linkages and partnerships between stakeholders at national level?		
Is there engagement with regional and sub-regional PGRFA collaborations?		
Are means in place to convene ad hoc working groups and enlist expertise?		
<i>Stage B. Establish the foundations for a National Strategy for PGRFA</i>		
Has a country assessment on the state of PGRFA been conducted or updated?		
Has the vision statement been drafted and agreed?		
Have goals and objectives been formulated?		
Has an action plan been formulated?		
Is a budget in place for the strategy-development activities?		
Has a monitoring plan been formulated?		
Has a communication plan been formulated?		

Stage or task	Yes	No
Stage C. Finalizing and presenting the National Strategy for PGRFA		
Has a consultation document been prepared?		
Have stakeholder consultations been initiated?		
Via common stakeholder consultations/meetings?		
Via electronic consultations?		
Via one-to-one meetings?		
Have stakeholder concerns been incorporated into a revised Strategy?		
Have costs been budgeted and financial resources mobilized?		
Are monitoring capacities identified and in place?		
Has the draft National Strategy for PGRFA been validated?		
Implement the National Strategy for PGRFA		
Are enabling capacities in place?		
Has the National Strategy for PGRFA been widely disseminated?		
Have efforts to raise awareness of the strategy been planned and carried out?		
Have the steps for implementing the strategy been initiated?		
Have the steps for monitoring and evaluating the plan been agreed?		
Have the national information systems been established or updated with information generated from implementation and monitoring of the strategy?		

ANNEX 3.

SOME RESOURCES FOR THE DEVELOPMENT OF A NATIONAL STRATEGY FOR PGRFA

- Global Plan of Action for the Conservation and Sustainable Use of PGRFA
<http://www.fao.org/docrep/015/i2624e/i2624e00.pdf>

- Regional Strategies for PGRFA:
 - Strategic Action Plan to strengthen the conservation and use of Mesoamerican PGRFA in adapting agriculture to climate change (SAPM), 2014-2024.
http://www.biodiversityinternational.org/uploads/tx_news/SAPM_2014_2024_1725.pdf

 - A PGRFA strategy for the Near East and North Africa Region
<http://www.egfar.org/sites/default/files/files/PGR%20Draft%20Strategy.pdf>

 - Regional strategy for the conservation, replenishment and use of plant genetic resources for food and agriculture in Central Asia and the Caucasus for the period until 2015
<http://www.croptrust.org/documents/regionalstrategies/centralasiaandcaucasus.pdf>

- Draft guide for national seed policy formulation
<http://www.fao.org/docrep/meeting/027/mg191e.pdf>

- FAO. 2010. *Promoting the Growth and Development of Smallholder Seed Enterprises for Food Security Crops*. Food and Agriculture Organization of the United Nations. Rome, Italy.

- Plant Breeding and Seed Systems Planning and Assessment Tool (in preparation)

- E-learning Course on Pre-Breeding
<http://www.imarkgroup.org/projects/login.asp?courseModule=PB&courseCode=PB&courseLanguage=en>

- Genebank Standards
<http://www.fao.org/docrep/meeting/022/MB179E.pdf>
- National Information Sharing Mechanisms; portal at
<http://www.pgrfa.org/gpa/selectcountry.jsp>

The provisions of the International Plant Protection Convention (<https://www.ippc.int/>); the Convention on Biodiversity (<http://www.cbd.int/>); the International Treaty on Plant Genetic Resources for Food and Agriculture (<http://www.planttreaty.org/>); and similar provide invaluable resources for developing National Strategies for PGRFA also.



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