



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



The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

Item 12 of the Provisional Agenda

SEVENTH SESSION OF THE GOVERNING BODY

Kigali, Rwanda, 30 October – 3 November 2017

Report of the Independent Evaluation of the Second Project Cycle of the Benefit-sharing Fund

Note by the Secretary

The *Operational Procedures for the use of resources under the direct control of the Governing Body* include, as the last step of the project cycle, an independent evaluation to be carried out at the portfolio level.

During the last biennium, the Secretariat has engaged, together with FAO Office of Evaluation, in the planning of the independent evaluation of the 19 projects approved for funding as part of the second cycle of the Benefit-sharing Fund.

This independent evaluation has been undertaken following the procedures for reporting, monitoring and evaluation adopted during the Fourth Session of the Governing Body through Resolution 3/2011.

The outcome of the independent evaluation is a final report providing a systematic account of the performance of the BSF second cycle projects. The report has been published on the FAO-OED web site.

This document contains the Report on the Evaluation of the Benefit-sharing Fund second project cycle.

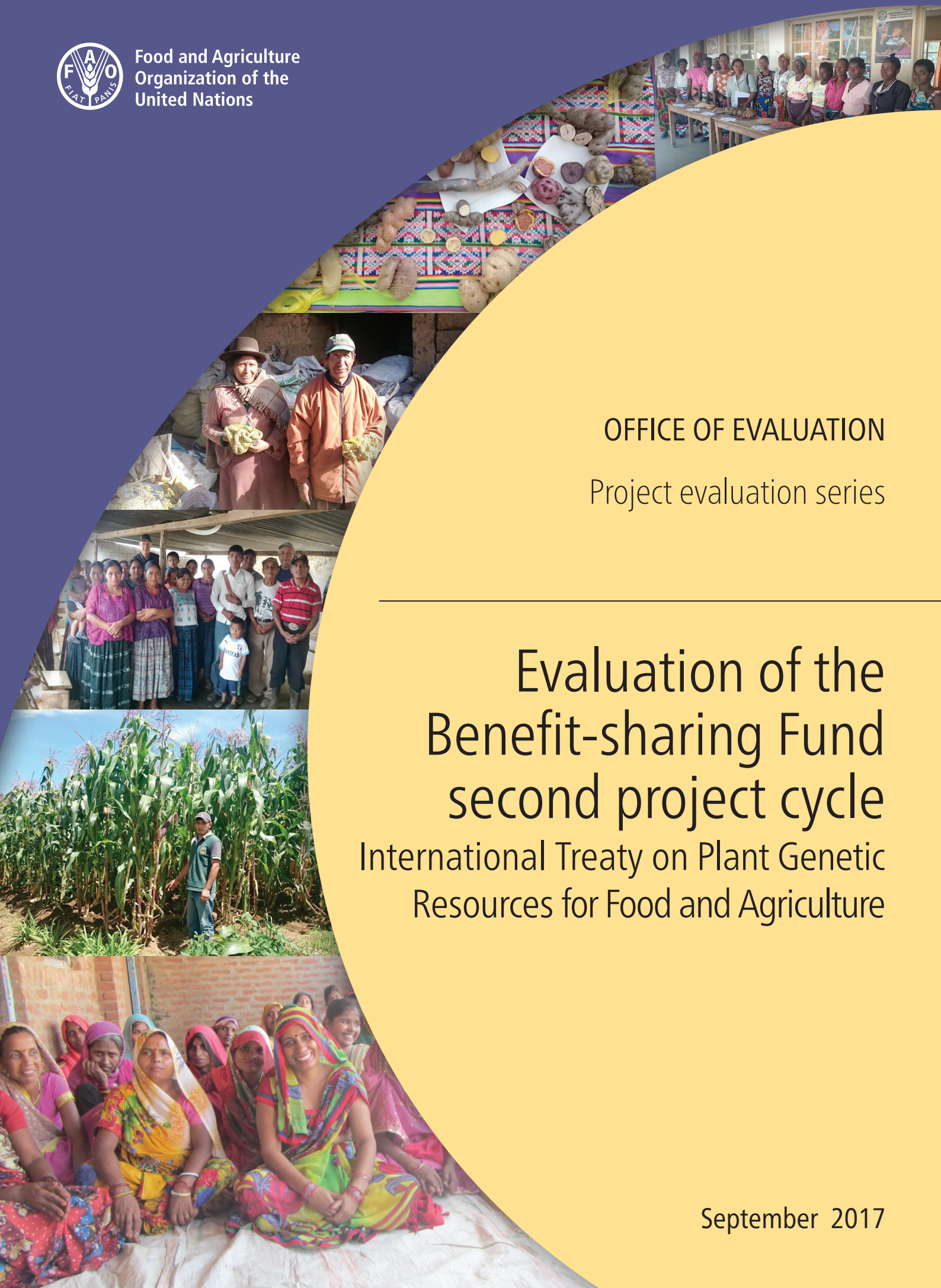
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Project evaluation series

Evaluation of the Benefit-sharing Fund second project cycle

International Treaty on Plant Genetic
Resources for Food and Agriculture

September 2017

PROJECT EVALUATION SERIES

**Evaluation of the Benefit-sharing Fund
second project cycle
International Treaty on Plant Genetic
Resources for Food and Agriculture**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
OFFICE OF EVALUATION**

September 2017

Food and Agriculture Organization of the United Nations

Office of Evaluation (OED)

This report is available in electronic format at: <http://www.fao.org/evaluation>

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For further information on this report, please contact:

Director, Office of Evaluation (OED)
Food and Agriculture Organization
Viale delle Terme di Caracalla 1, 00153 Rome
Italy
Email: evaluation@fao.org

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Acronyms and abbreviations

BSF	Benefit-sharing Fund
FAO	Food and Agriculture Organization of the United Nations
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
NGO	Non-governmental Organization
PGRFA	Plant Genetic Resources for Food and Agriculture

Executive Summary

- 1 This report outlines the main findings, conclusions and recommendations of the independent evaluation of 19 concluded projects approved for funding in the second call for proposals of the Benefit-sharing Fund (BSF II) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) (the Treaty).
- 2 The Operational Procedures for the use of resources under the direct control of the Treaty's Governing Body stipulate that *"at the conclusion of each project cycle of the BSF, a final evaluation should be conducted"*. The purpose of the evaluation was to assess *"the extent to which the concluded projects funded through the second cycle of the BSF have helped increase food security and community resilience among vulnerable farmers and the rural population in developing countries through the management and conservation of Plant Genetic Resources for Food and Agriculture (PGRFA)"*. The evaluation findings are presented in Chapter 3 of the Evaluation Report.
- 3 The scope of the evaluation covers the relevance, effectiveness, efficiency and sustainability of the first batch of the BSF II projects completed up to 2015.¹
- 4 The objectives of the evaluation were to: i) identify the main outputs and outcomes of the 19 concluded projects under Windows 1 and 2 toward the achievements of BSF II objectives; and ii) identify the lessons learned and best practices that can be used to support the effectiveness of projects funded under future project cycles and the overall enhancement of the BSF mechanism.
- 5 The evaluation was conducted in accordance with the following evaluation questions:
 - **Relevance:** To what extent was the BSF project portfolio filling a gap in the management and conservation of plant genetic resources for food and agriculture?
 - **Effectiveness:** What were the intended and unintended results achieved by the concluded projects?
 - **Efficiency:** To what extent was the institutional and implementation set-up conducive to achieving the intended results?
 - **Sustainability:** Are the projects' main activities and outcomes sustainable beyond project closure?
 - **Cross-cutting objectives:** Were gender, human rights and intellectual property rights for farmers/indigenous populations, as well as environmental and other cross-cutting objectives, fully integrated into the design and implementation of the projects?

Background to the BSF II portfolio

- 6 The purpose of the BSF II portfolio was to contribute to food security and climate change adaptation by funding high impact activities on sustainable use and conservation of PGRFA to the benefit of the vulnerable communities in 33 targeted countries across Africa, Asia, Near East, and Central and South America.
- 7 The BSF II featured two types of project windows: Window 1 focused on the development of strategic action plans to support the adaptation of PGRFA to climate change on a regional, sub-regional, eco-regional or other basis. The strategic action plans had the objective of establishing priorities, targets and milestones for future action to identify information exchange, technology transfer and capacity building. Window 2, referred to as immediate action projects, focused on strengthening on-farm conservation and management of PGRFA through actions primarily at the farm and community levels.

1 The first batch of 19 projects was approved at the Fourth Session of the Governing Body in 2010 with a total value of almost USD 5.5 million. A second batch of three projects with a total value of USD 1 million was approved in 2013 to directly support UNDP programmes. A third and final batch of six projects with a total budget of over USD 2.5 million was approved in 2014.

- 8 Based on a synthesis report of the Secretariat of the Treaty² on the execution of the BSF II, the beneficiaries of the 19 completed projects under the BSF included a total of 336 177 farmers who have participated in the formulation of the strategic action plans under Window 1 and 340 000 farmers who have benefited under Window 2.
- 9 More than 222 partnering institutions among universities, institutes for biodiversity conservation, international organizations, governmental and non-governmental organizations (NGOs), gene banks and national and international research institutes have been involved in project execution by bringing in complementary expertise on the management and development of PGRFA.
- 10 Implemented activities included, but were not limited to:
 - participatory varieties selection, collection and documentation of local crops;
 - characterization and evaluation of varieties of crops, as to identify adaptability potential and incorporate preferable traits for further development, training and capacity building;
 - establishment of community seed banks to conserve accessions in order to improve farmers' access to and availability of greater agrobiodiversity;
 - training sessions and workshops on characterization, evaluation and breeding of crop varieties;
 - training sessions (310) and workshops for farmers, extension agents, researchers and governmental officials in on-farm conservation and management of PGRFA

Methodology

- 11 The evaluation methodology comprised three phases: inception, field and synthesis of findings to produce the Evaluation Report. The inception phase commenced with a review of projects' documents to assess the overall performance of projects in relation to the planned objectives and expected results.
- 12 The field phase consisted of field visits to six projects representing different regions, sub-regions and ecological zones in Africa, Asia and Latin America. The field phase involved semi-structured interviews, workshops, site visits and focal group meetings with beneficiary farmers, implementing partners, government organization and key project stakeholders. In total, there were 97 interviews with internal and external key informants and stakeholders (full list in Appendix 4).
- 13 The last phase of the evaluation consisted of the synthesis of findings to produce the Evaluation Report.

Conclusions

Overall conclusions

- 14 The concluded 19 projects reviewed have successfully contributed to raising awareness and building consensus among vulnerable farming communities and implementing partners, particularly on the role that PGRFA plays in maintaining the food and nutrition security of farmers that are vulnerable to the growing effects of climate change. As such, these projects have made an important contribution to the implementation of the objectives of the Treaty.
- 15 This achievement has been supported by the formulation of strategic action plans which have resulted in the production of a large amount of scientific, geographical and technical material, facilitated delivery of new accessions to gene banks and on-farm conservation and enhancement of around 1 000 crop varieties.

2 The source of data presented from paragraph 8 to 10 are based on figures in the Draft Report on the execution of the second project cycle of the Benefit-Sharing Fund submitted to the Sixth Session of the Governing Body of the ITPGRFA. The sources of the statistical data presented is based on progress reports submitted by the implementing agencies throughout the implementation period. See <http://www.fao.org/3/a-bb353e.pdf>, paragraph 6 and 7. The evaluation team could not check the validity of this data.

Conclusion 1. Relevance

- 16 All 19 projects addressed important gaps both at the regional/national and local/agro-ecological zone levels, in particular the need to enhance the linkages between *in situ* and *ex situ* conservation of PGRFA and its sustainable use to safeguard the food security of vulnerable communities. This included preliminary analyses, vulnerability assessments and field trials to identify appropriate actions and target groups in both, strategic action plans and immediate action projects. As a result, all projects were found to be aligned with both the provisions of the Treaty and other international agreements and conventions including Millennium Development Goals, Convention of Biological Diversity and United Nations Framework Convention on Climate Change. However, the call for proposals focused primarily on food security with insufficient emphasis on nutrition; also gender differentiated approach in project execution has not been sufficiently prioritized. The main shortcoming affecting the relevance of the projects evaluated was the decision to fund a large number of projects through two different funding windows at the same time. This contributed to atomized funding, increased the risk of overlaps and affected the possibility of building mutually reinforcing synergies.

Conclusion 2. Effectiveness

- 17 The strategic action plans represented an effective means through which a large number of different stakeholders linked to PGRFA could exchange information, carry out research and analysis, and develop consensus on the actions needed to advance *in situ* and *ex situ* conservation and sustainable use of PGRFA. Lead farmers trained by the immediate action projects made significant contributions to: i) *in situ* conservation of PGRFA through seed transfer of local/improved varieties of PGRFA from the national gene banks; and ii) recognition and valorization of farmers' knowledge and capacity to conserve local varieties that are highly adapted to local conditions.

Conclusion 3. Efficiency

- 18 The decision to fund a large number of strategic action plans and immediate action projects with a duration of one and two years and budget ceilings of USD 400 000 (strategic action plans) and USD 300 000 (immediate action projects) was an efficient mechanism to attract high numbers of pre-proposals and full project proposals. Taking into account the above-mentioned results, the evaluation considers that the immediate action projects represent good value for money, especially when average expenditure per project was USD 221 000. However, the formulation of a large number of strategic action plans without clear funding sources identified before project closure is not considered good value for money. Furthermore, some overlaps were identified among projects (in terms of the countries covered) and the strategic action plans were formulated without information and data flows from the immediate action projects. Furthermore, the vast majority of immediate action projects did not monitor the adaptability and productivity performance of PGRFA. This represents a major shortcoming of the immediate action projects considering the high productivity rates of local varieties of beans, maize, millet, potato and sorghum, which could have been of great interest to other immediate action projects (especially in the same regions), and decision makers in building awareness at national level on the importance of PGRFA for sustainable livelihoods and climate change adaptation.
- 19 Such awareness is considered crucial to mainstream PGRFA into major national development plans as to ensure sustainability of projects funded. The monitoring of PGRFA performance is also important to upscale and replicate the interventions funded in different regions.

Conclusion 4. Sustainability

- 20 Supporting vulnerable farming communities in marginal rural areas is an effective and sustainable way of conserving PGRFA, as well as increasing the availability to facilitate its sustainable use.
- 21 The evaluation identified only two cases where the strategic action plans had secured adequate funding to implement their main actions in the post-project period (2014-

2016). In the case of most of the other strategic action plans, partial funding had been secured, mainly in the form of funds for projects executed by farmers' associations and NGOs. As a result, the strategic action plans in most cases could not be fully implemented. However, the evaluation did identify cases where funded projects are helping to forge new alliances between farmers, NGOs and breeders in the interests of reducing dependency on traditional actors in PGRFA (namely public institutions that have diminishing resources). Immediate action projects have experienced difficulties in securing adequate funds since project closure. This has resulted in a large number of farmers discontinuing the use of PGRFA distributed. Nevertheless, the evaluation found a large number of lead farmers were continuing to conserve the PGRFA promoted by the projects. Furthermore, there were cases in some of the farming communities visited in Guatemala, Malawi and Peru where crop diversity had increased and production of local varieties was actually registering higher productivity rates than at the end of the immediate action projects.

Conclusion 5. Cross-cutting issues

- 22 The call for proposals did not provide explicit guidance on the gender focus to be integrated into the projects, or on the integration of other cross-cutting objectives relating to the management of natural resources, the rights of farmers and of indigenous peoples and ethnic minorities. In the case of gender equality, project proposals and implementation reports mainly focused on reporting the number of female participants, which in 11 of the 12 immediate action projects averaged only 12 percent.³

Recommendations

Recommendation 1 on improving project design

- 23 All project proposals solicited through call for proposals for future funding cycles of the BSF should take into account the sustainability (not just effectiveness) of main actions from the design phase.

Recommendation 2 on increasing project effectiveness

- 24 Target funding in fewer projects in order to ensure that adequate finance and quality supervision and monitoring can be conducted at the project and Secretariat levels to support the delivery of intended outputs and outcomes.

Recommendation 3 on improving project efficiency

- 25 Future funding cycles should consider either combining or staggering the timing of immediate action projects in order to support strategic projects directed at national PGRFA stakeholders and complement each other and, where possible, enhance the added-value of new or ongoing national-lead projects. The focus on strategic projects directed at the regional level should be focused on supporting specific cases where the conservation of PGRFA can be advanced through regional associations/partnerships that are likely to be more effective than government-led initiatives. In addition, strategic projects should also consider supporting research-oriented projects that demonstrate the socio-economic, environmental and cultural benefits of conserving and promoting agro-biodiversity. To facilitate this process, the call for proposals should promote project proposals that do not have to comply with a specific budget ceiling but rather assess projects in terms of their design, effectiveness, efficiency and sustainability on a case-by-case basis.

Recommendation 4 on improving the sustainability of projects

- 26 In line with Recommendation 1 public, non-governmental and/or private enterprises should be encouraged to participate in project design, implementation and monitoring. The final reports should provide evidence that letters of agreement (or equivalent) have

3 When PR-113-India is included the average participation of women rises to 48 percent.

been concluded with the public, private and/or non-governmental sectors to fund the continuation of these activities. The BSF should include a contingency fund to support cost extensions in specific cases where there are delays or difficulties in finalizing the letters of agreement before closure. To support the sustainability process, the communication strategy of the Secretariat and its partners should report on developments in the post-project period of at least a selection of projects.

Recommendation 5 in relation to cross-cutting objectives

- 27 In line with the above recommendations, all projects should explicitly integrate a gender focus in their design, implementation, monitoring and reporting, to ensure women are recognized as major knowledge holders of PGRFA. Projects should include indicators that explicitly address equal access for men and women to resources provided through the projects and their engagement in project design, implementation, monitoring and reporting.
- 28 In relation to other cross-cutting objectives, the call for proposals should provide clear guidance that beneficiaries' needs should be met in accordance with the provisions in the Treaty, as well as relevant international agreements and declarations. In addition, particular attention should be given to ensuring that projects address the needs and rights of indigenous peoples and ethnic minorities and developing new markets for local varieties and "diversity-rich" products, such as denomination of origin agreements in order to add value to the PGRFA they conserve and manage.

Recommendation 6 to support the BSF funding cycles

- 29 In line with Recommendation 1, steps should be taken to improve knowledge and data management on the BSF-funded projects. This would enhance the implementation of the entire project cycle, from project appraisal to monitoring (in accordance with Articles 13 and 17 of the Treaty).

1. Introduction

1.1 Background

- 1 This report outlines the main findings, conclusions and recommendations of the final evaluation of 19 concluded projects funded under the first batch of the second project cycle of the Benefit-sharing Fund (BSF) of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) between 2011 and 2015.⁴ The evaluation covers the two funding windows of the second project cycle.

1.2 Purpose of the evaluation

- 2 The Operational Procedures for the use of resources under the direct control of the Governing Body stipulate that ***“at the conclusion of each project cycle of the BSF, a final evaluation should be conducted”***. At the Fifth Session of the Governing Body it was agreed the independent evaluation of BSF II should focus on issues of design, effectiveness and efficiency in the execution of the project portfolio. The present evaluation was carried out in accordance with the Terms of Reference (ToR) provided in Annex 1. The ToR specify the main purpose of the evaluation is to conduct an independent assessment of ***“the extent to which the concluded projects funded through the second cycle of the BSF have helped increase food security and community resilience among vulnerable farmers and the rural population in developing countries through the management and conservation of Plant Genetic Resources for Food and Agriculture (PGRFA)”***.

1.3 Intended users

- 3 The primary audience of the evaluation are the Contracting Parties of the Treaty, in particular its Governing Body which is responsible for receiving and controlling the funds allocated to the Benefit-sharing Fund. The recommendations and lessons learned from this evaluation are intended to contribute to strengthening the programmatic approach of the Benefit-sharing Fund and improve the execution of its project cycles. Other important audiences include the wide range stakeholders who participated in BSF II and who will support the implementation of the International Treaty through future BSF cycles and other relevant mechanisms. In addition, the evaluation is intended to inform staff from the Food and Agriculture Organization of the United Nations (FAO) at both headquarters and in its decentralized offices about the BSF mechanism and achievements of BSF II, and how synergies may be developed in future funding cycles.

1.4 Scope and objectives of the evaluation

- 4 The scope of the evaluation covers the relevance, effectiveness, efficiency and sustainability of all completed projects under BSF II up to 2015. At the start of the evaluation in June 2016 there was a total of 19 concluded projects comprising seven strategic action plans and 12 immediate action projects covering sub-regions, regions, or eco-regions in Africa, Asia, the Near and Middle East and Central and South America. The evaluation does not include a separate assessment of the BSF mechanism as such.
- 5 The objectives of the evaluation are to: i) identify the main outputs and outcomes of the 19 concluded projects under Windows 1 and 2 towards the achievements of BSF II objectives; and ii) identify the lessons learned and best practices that can be used to support the effectiveness of projects funded under future project cycles and the overall enhancement of the BSF mechanism.

4 The first batch of 19 projects was approved at the Fourth Session of the Governing Body in 2010 with a total value of almost USD 5.5 million. A second batch of three projects with a total value of USD 1 million was approved in 2013 to directly support UNDP programmes. A third and final batch of six projects with a total budget of over USD 2.5 million was approved in 2014.

- 6 The evaluation questions are shown in Box 1 below (see the Evaluation Matrix in Annex 3 for the evaluation sub-questions). The evaluation sub-questions have been modified during the field visits to add value to the analysis and address key issues missing in the Terms of Reference.⁵

Box 1: Evaluation questions

Relevance

- **Evaluation question 1:** To what extent was the BSF project portfolio filling a gap in the management and conservation of plant genetic resources for food and agriculture?

• **Effectiveness**

- **Evaluation question 2:** What were the intended and unintended results achieved by the concluded projects?

Efficiency

- **Evaluation question 3:** To what extent was the institutional and implementation set-up conducive to achieving the intended results?

Sustainability

- **Evaluation question 4:** Are the projects' main activities and outcomes sustainable beyond project closure?

Cross-cutting objectives

- **Evaluation question 5:** Were gender, human rights and intellectual property rights for farmers/ indigenous populations, as well as environmental and other cross-cutting objectives, fully integrated into the design and implementation of the projects?

1.5 Methodology

- 7 The evaluation methodology comprised of three phases: inception, field and synthesis of findings to produce the draft evaluation report. The present report incorporates the comments and observations of the Secretariat of the Treaty.
- 8 The inception phase commenced with the identification of key documents from the 19 projects selected for the evaluation under Window 1 (seven projects) and Window 2 (12 projects) of the second cycle of the BSF. Following the creation of the document database an initial document review was conducted to summarize the projects' overall performance in relation to the objectives and expected results.
- 9 Following a round of strategic meetings with the Secretariat of the Treaty and FAO, the evaluation proceeded to identify a sample of projects as case studies in accordance with the following criteria:
- a. Geographical balance. Selection of projects representing three of the four regions that received funding in the second project cycle (Africa, Asia, the Group of Latin America and Caribbean Countries and the Near and Middle East).
 - b. Implementation through different executing institutions. Selection of projects implemented by the different types of institutions, such as non-governmental organizations (NGOs), the Consultative Group on International Agricultural Research, national research institutions, universities and government institutions.
 - c. Projects working with strategic genetic material for food and agriculture (e.g. maize, potato, rice and wheat).
- 10 Window 1 focused on the elaboration of strategic action plans involving a large number of stakeholders spread across several countries. The evaluation team decided it would be more efficient to assess the results through a document review, an online questionnaire and the selection of one case study. This method ensured that adequate resources could

⁵ Note the sub-questions may have been modified, but they do not deviate from the objectives of the evaluation or the interests to add value (such as assessment of productivity of local/improved varieties).

be dedicated to assessing the achievements of Window 2 projects at the farm level, and to gathering valuable data regarding the extent to which introducing local and improved varieties supported farmers' adaptation to climate change and contributed to safeguarding their food security.

- 11 The inception phase concluded with the following main outputs:
 - a. identification of the Theory of Change (see Appendix 1), produced in close consultation with the Secretariat of the Treaty in accordance with the objectives of the second project cycle;
 - b. selection of the projects for country case studies using a selection matrix⁶, in close consultation with the Secretariat of the Treaty;
 - c. a detailed evaluation matrix (see Annex 3), with further disaggregation of the evaluation questions and sub-questions, showing the data collection tools and sources of information;
 - d. evaluation matrix was further elaborated to a country report template to standardize the evaluation process in the field and support the identification of common or specific findings in the country reports for Window 2 projects;
 - e. finalization of the evaluation's terms of reference following consultation with the Secretariat of the Treaty;
 - f. preparation of the indicative work plans for the case studies to be conducted by the evaluation team, and recruitment of national experts to support the realization of the case studies in India and Malawi;
 - g. participation of the FAO Office of Evaluation manager and senior evaluation consultant at the Secretariat's Expert Meeting on the Toolbox for Sustainable Use of PGRFA. The meeting took place in Volterra, Italy from 19 to 21 July 2017 with the aim of gathering a number of stakeholders from the Window 1 and 2 projects in one place;
 - h. elaboration of the online questionnaires (see Annex 4) to promote an inclusive approach to the evaluation, in particular for stakeholders of projects that had not been included in the case studies. The evaluation questions were used to guide the elaboration of the online questionnaire.
 - i. finalization of the evaluation report structure based on the evaluation questions.
- 12 The Field Phase consisted of field visits to the following six projects that were selected as case studies following the desk review and in the interests of obtaining a sample of projects from different regions, sub-regions or ecological zones of Africa, Asia and Latin America:

Table 1: List of selected projects for field visits

Window	Project Id and Country	Project Id and Title
Window 1	PR-50-Costa Rica	Strategic Action Plan to strengthen conservation and use of Mesoamerican plant genetic resources in adapting agriculture to climate change.
Window 2	PR-98-Guatemala	Establishing a preliminary network of community seed banks in vulnerable regions in order to maintain seed availability in times of disaster.
	PR-113-India	Using rice genetic diversity to support farmers' adaptation to climate change for sustainable food production and improved livelihoods in India.
	PR-117-India	Seeds for life – Action with farmers in the Uttar Pradesh - IGP region to enhance food security in the context of climate change.
	PR-219-Malawi	Improving livelihoods of local communities in semi-arid zones of Malawi through on-farm conservation and exploiting the genetic potential and seed production of yams, sorghum, pearl millet, finger millet and cowpea germplasm in mitigating climate change.
	PR-227-Peru	Conservación y manejo sostenible del germoplasma de papas nativas en las comunidades campesinas de la Provincia de Andahuaylas.

⁶ Based on the criteria listed in paragraph 9.

- 13 The field phase was implemented through a highly participatory approach including semi-structured interviews with a wide sample of key stakeholders and implementing partners, the facilitation of workshops or focal group meetings with beneficiary farmers and site visits. During the preparation of each workshop the evaluation team encouraged the participation of women to ensure they were at least 30 percent of total participants. In total, there were 97 interviews with internal and external key informants and stakeholders (full list in Appendix 4).
- 14 The two separate online questionnaires were undertaken for Windows 1 and 2 via SurveyMonkey platform.⁷ The questionnaire link was sent to all the Window 1 and 2 executing partners and other individuals/partners who directly contributed to the formulation, consultation and implementation of the projects (see Annex 5 and 6 for further details on the respondents). The objective of the online questionnaire was to collect the view of the diverse partners on the perceived results and lessons learned and best practices identified for future project cycles.
- 15 Overall the evaluation obtained responses from 19 stakeholders involved in Window 1 projects and 29 stakeholders involved in Window 2 projects. The 48 respondents to the online questionnaires represented a total of 18 out of the 19 projects evaluated.⁸
- 16 To support and validate the evaluation's findings, conclusions and recommendations, the evaluation team triangulated as far as possible its findings to determine the legitimacy of the information and data gathered in the desk review (summarized in a matrix) and online questionnaires against that obtained from site inspections and interviews in the field. The synthesis phase of the evaluation started by conducting debriefing discussions with implementing partners and stakeholders at country and FAO headquarters levels, followed by the elaboration of the country reports. A synthesis of the online questionnaire findings for Windows 1 and 2 projects was prepared. Following the identification of key findings and conclusions from the country reports, the evaluation team produced a preliminary draft of the main report for internal assessment before producing the final evaluation report for circulation.
- 17 The evaluation report focuses on the immediate outcomes of the 19 concluded projects funded under the second project cycle of the BSF up to 2015.

1.6 Limitations

- 18 The main limitations of the evaluation include the following:
 - at the start of the evaluation, six projects were still ongoing and therefore could not be considered applicable to a final evaluation;
 - resource and time constraints on the evaluation restricted the case studies to five out of the 33 countries involved. As a result, the evaluation team was only able to cover a total of one strategic action plan and four immediate action projects, which equates to a project sample equivalent to 26 percent.⁹
- 19 To mitigate these limitations the evaluation applied the following measures:
 - Agreed with the Secretariat of the Treaty to exclude the six ongoing projects from the sample of the external assessment of 19 concluded projects that have received funding under BSF II to date. The total number of funded projects was 28 and evaluating 19 projects was already a large enough sample for evaluation purposes.
 - Launched the above-mentioned online questionnaires for stakeholders participating in Window 1 and 2 projects to ensure coverage of all concluded projects that could not be visited and to ensure an inclusive approach to the evaluation was applied.

7 The surveys were anonymous and delivered through a web link and email. The questionnaires were made available in English, French and Spanish.

8 It was not possible to obtain responses from stakeholders associated with PR-59-DPR Korea due to internal controls in the country.

9 The project in Tunisia (Window 2) was originally identified to be part of the sample, but could not be covered due to time and funding constraints.

- Conducted an in-depth review of the 14 final reports of all projects not assessed in the case studies in order to help identify any potential correlations or divergences in the evaluation's findings.

1.7 Structure of the report

- 20 This report is organized in five chapters. Chapter 1 provides the scope and purpose of the evaluation and also describes the methodology. Chapter 2 provides the background and context of the second project cycle of the BSF. Chapter 3 presents the key findings based on the evaluation questions grouped in relation to the following evaluation criteria: relevance, effectiveness, efficiency and sustainability. Chapter 4 provides the main conclusions, including recommendations based on the analysis of the evaluation questions. Chapter 5 looks at lessons from the design and implementation of the second project cycle.

2. Background and context of the Benefit-sharing Fund

2.1 Background of the Benefit-sharing Fund

- 21 The International Treaty on Plant Genetic Resources for Food and Agriculture was adopted by the FAO Conference in 2001 and came into force in 2004 under Article XIV of the Organization's Constitution.¹⁰ The Treaty's objectives are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security. The Treaty currently has 143 Contracting Parties.
- 22 The BSF represents the Treaty's main funding mechanism, which is controlled by the Governing Body of the Treaty. The BSF was conceived to enhance the availability, transparency, efficiency and effectiveness of the provision of financial resources for the implementation of the Treaty at field level.
- 23 The main objective of the Governing Body is to use the funds in the BSF strategically to play a catalytic role in international cooperation in the area of plant genetic resources for food and agriculture. At its Second Meeting in 2007 the Governing Body adopted the following three priority areas of the BSF based on the Global Plan of Action for the Conservation and Sustainable Use of PGRFA:
- Information exchange, technology transfer and capacity building to: (a) build strong national programmes in developing countries designed to conserve and sustainably use PGRFA; and (b) expand and improve education and training in the sustainable management of the diversity of PGRFA in developing countries.
 - Managing and conserving plant genetic resources on-farm to support on-farm management and conservation of PGRFA as the most direct way to reach farmers, indigenous and local communities to whom benefits should flow and complement *ex situ* conservation.
 - The sustainable use of PGRFA to: (a) expand the characterization and evaluation of collections to increase the relevance of germplasm held both *in situ* and *ex situ* for breeding and to promote and facilitate its use; and (b) diversify crop production, genetic enhancement and broaden the genetic base to help increase the productivity and sustainability of agricultural production, reduce dependency on external inputs and respond to climate change.
- 24 The first project cycle was launched in 2008 (BSF I). Since the launch of the first call for proposals in 2008, a total of USD 20 374 723 has been allocated covering three project cycles, involving 55 developing countries and the implementation of 61 projects dedicated to the conservation and sustainable use of PGRFA (this includes the development and transfer of technologies relevant to PGRFA).

2.2 Context of the second project cycle of the Benefit-sharing Fund

- 25 The Call for Proposals 2010 for the Second Round of the BSF II (see Annex 2) launched for the period between 2011 and 2014, was designed to fund projects in line with the BSF priority areas and executed through two funding windows. The purpose of the BSF II portfolio was to contribute to food security and climate change adaptation by funding high impact activities on sustainable use and conservation of PGRFA to the benefit of the vulnerable communities in 33 targeted countries across Africa, Asia, Near East and Central and South America.

¹⁰ According to the general provisions governing Article IV Bodies, the Governing Body of the Treaty has the responsibility, inter alia, of issuing and managing the BSF Call for Proposals according to the Operational Procedures for the use of resources under its control. For more information on the special status of Art. IV Bodies, please refer to the Basic Texts of FAO available at www.fao.org/3/a-mp046.pdf

- 26 Window 1 focused on funding proposals dedicated to the development of strategic action plans to support the adaptation of PGRFA to climate change on a regional, sub-regional, eco-regional or other basis. All strategic action plans were required to identify information exchange, technology transfer and capacity building to support the conservation and sustainable use of PGRFA through existing national, regional and international networks, or through the creation of new multi-stakeholder consortia, over a six to ten year period. The call for proposals made it clear the strategic action plans should be designed within a 12-month period, have a maximum budget of USD 400 000 and aim to play an important catalytic role in guiding future funding priorities of the BSF and other relevant multi-lateral initiatives.
- 27 Window 2 focused on funding immediate action projects designed to sustain food security and help farmers adapt to the effects of climate change through the conservation and sustainable use of PGRFA on-farm. Immediate action projects were expected to focus on PGRFA listed in Annex 1 of the Treaty (see Annex 8) and to include information exchange, technology transfer and capacity building. The call for proposals specified the immediate action projects would have a maximum duration of two years and not exceed USD 300 000.
- 28 The projects funded under BSF II were substantially larger in size and scope than the first cycle projects.¹¹ A total of 28 projects have received funding under BSF II to date. They are grouped into three batches:¹²
- **First batch:** Nineteen project proposals for immediate funding, which became operational in 2012 for a total of USD 5 497 723¹³.
 - **Second batch:** Three projects incorporated under the United Nations Development Programme, which became operational in 2013 for a total of USD 1 000 000.
 - **Third batch:** Eight projects funded when additional funding became available in the BSF. Six projects under this third batch became operational in 2014 for a total of USD 1 862 210.
- 29 Table 2 below shows the budget and total expenditure of the 19 concluded projects pertaining to Windows 1 or 2 assessed by the evaluation.

Table 2: Overview of the budget and expenditure for the first batch of BSF II projects¹⁴

Window No.	Budget (USD)	Actual expenditure (USD)
Window 1 (7 projects)	2 478 227	2 195 763
Window 2 (12 projects)	3 019 496	2 364 477
Total	5 497 723	4 560 240

Source: Secretariat of the Treaty, December 2016

- 30 The majority of funds used under BSF II was provided through voluntary contributions from the following Contracting Parties: Australia, Germany, Ireland, Italy, Norway and Spain. A grant agreement was also signed between the Secretariat of the Treaty and the International Fund for Agricultural Development (IFAD), to support funding of five Window 2 projects in Ethiopia, Indonesia, Malawi, Tunisia and Zambia.
- 31 Based on a synthesis report from the Treaty¹⁵ on the execution of the BSF II projects, the beneficiaries of the 19 completed projects include a total of 336 177 farmers who have

11 The first project cycle constituted 11 pilot projects, with a total budget of about USD 0.5 million.

12 Refer to Appendix 2 and 3 for the summary information on the 19 concluded projects under the second project cycle.

13 All budget allocations for the second project cycle are based on reports obtained from the Secretariat of the Treaty in May, 2016.

14 The total budget for the Window 1 and 2 projects presented is based on the financial reports submitted for all the 19 concluded projects as per Second BSF project cycle monitoring procedures.

15 The source of data presented in paragraph 30 to 32 is extracted from the Draft Report on the execution of the second project cycle of the Benefit-Sharing Fund submitted to the Sixth Session of the Governing Body of the ITPGRFA. The sources of the statistical data presented is based on the projects progress reports submitted by the implementing agencies throughout the implementation period. See <http://www.fao.org/3/a-bb353e.pdf>, paragraph 6 and 7. The evaluation team could not check the validity of this data. The evaluation team was unable to obtain the data disaggregated by male and female.

participated in the formulation of the strategic action plans under Window 1 and 340 000 farmers who have benefited from the Window 2 projects. More than 222 institutions, including national, regional and international research institutions, gene banks, NGOs, ministries and grassroots organizations have been partners in the execution of these completed projects.¹⁶

32 Implemented activities included, but were not limited to:

- participatory varieties selection, collection and documentation of local crops;
- characterization and evaluation of varieties of crops, to identify adaptability potential and incorporate preferable traits for further development, training and capacity building;
- establishment of community seed banks to conserve accessions in order to improve farmers' access to and availability of greater agrobiodiversity;
- training sessions and workshops on characterization, evaluation and breeding of crop varieties;
- training sessions (310) and workshops for farmers, extension agents, researchers and governmental officials in on-farm conservation and management of PGRFA.

¹⁶ Refer to Appendix 2 and 3 for information on the main implementing agencies involved in the execution of the portfolio.

3. Evaluation findings

- 33 The findings of the evaluation are presented below, grouped by evaluation questions selected by the evaluation team in accordance with the Terms of Reference. Main findings are summarized at the beginning of each main question.

3.1 Evaluation question 1. To what extent is the BSF II project portfolio filling a gap in the management and conservation of PGRFA?

Finding 1. Both the strategic action plans and immediate action projects selected for funding under BSF II in 2010 and 2011 addressed important gaps both at the regional/national and local/agro-ecological zone levels relating to the need to enhance the linkages between in situ and ex situ conservation of PGRFA and its sustainable use to safeguard the food security of farmers who are highly vulnerable to the effects of climate change.

3.1.1 Alignment to international Agreements, Treaties and Goals of the United Nations

- 34 The call for proposals under BSF II was based on the ITPGRFA's commitment to support small farmers in developing countries to conserve and sustainably use PGRFA in order to maintain their food security. In the light of the Declaration of the 2009 World Summit on Food Security,¹⁷ the Governing Body of the Treaty agreed the call for proposals should focus on supporting smallholders safeguard their food security against the growing effects of climate change.
- 35 The evaluation found the call for proposals and all 19 project proposals assessed by the present evaluation under BSF II were fully aligned to, among others:
- a. The Millennium Development Goals (MDGs), in particular MDGs 1 and 7; and, since 2015, directly to the Sustainable Development Goals (SDGs), in particular SDG 2: Zero Hunger, addressing sustainable food production systems and resilient agricultural practices as well as genetic diversity. Indirectly, the 19 projects also contributed to SDG 12, given the projects were also designed to apply local/improved PGRFA that require minimizing the use of fertilizers and pesticides, and to SDG 13 which focuses on the development of national action plans to combat climate change and its impacts.
 - b. The Convention of Biological Diversity, in particular Decision IX/1 of the Conference of the Parties (COP) which agreed in May 2008 for the need to address the loss of biological diversity and its negative impacts on the sustainability of agriculture and the world's food and energy security.
 - c. The United Nations Framework Convention on Climate Change, in particular following the adoption of the Cancun Agreements in December 2010 at the COP 16, which include commitments to support adaptation to climate change in developing countries and to build their own sustainable future.
 - d. FAO's endorsement of the Second Report on Genetic Resources for Food and Agriculture at the Twelfth Regular Session of the Commission on Genetic Resources for Food and Agriculture in 2009, which endorsed the conservation and sustainable use of PGRFA to support the need to double food production between 2000 and 2050 from the same amount of land and using less water and other inputs in the face of the growing effects of climate change.

3.1.2 Alignment to regional, national and sectoral policies

- 36 The Call for Proposals stated the strategic action plans project proposals should be developed and implemented through "existing national, regional and international institutions, including effective networks, or through the creation of new consortia or other multi-stakeholder groupings".¹⁸ The Call for Proposals added that, "Ideally the strategic

¹⁷ Section 2.1 of the Call for Proposal 2010 (p.2).

¹⁸ Page 7, paragraph 3.

action plans would be integrated or coordinated with broader global, regional or national strategies and action plans for food security and climate change, and be implemented as part of a broader policy framework to leverage synergies in both action and financial resources”.

- 37 The evaluation found that the majority of strategic action plan project proposals addressed the main challenges and gaps in the PGRFA sector, which were identified during the seminars and research conducted and reported in the final reports (sections 2.4 and 2.5). This was facilitated by involving the participation of government representatives directly responsible for conserving PGRFA and representatives from research institutions, education establishments and farmer associations. This finding was also confirmed in the online questionnaire where 100 percent of respondents stated the strategic action plans had been aligned to regional and/or national policies and priorities concerned with the conservation and sustainable use of PGRFA. For example, a major objective of project PR-246-Nepal¹⁹ was the integration of community-based biodiversity management in relevant national policies and strategies to improve the on-farm management of PGRFA to safeguard food security and nutrition. More specifically, the strategic action plan proposal in Sudan (PE-325-2010)²⁰ provided clear evidence the strategic action plan was designed to support implementation of the country's National Biodiversity Strategy and Action Plan, in which the protection of agro-biodiversity in the rangeland ecosystem would also support the development of the country's action plan to Reducing Emissions from Deforestation and Forest Degradation (REDD+).
- 38 Concerning the immediate action projects, the evaluation found they had been designed in line with the requirements of the Call for Proposals; namely “respond to a clear priority need, preferably as expressed through already existing strategies or plans”. This was clearly demonstrated in the online questionnaire and case studies where respondents and interviewees stated the immediate action projects had been designed to support one or more of the following objectives:
- identify and register new accessions of potential new local varieties in the interests of conserving the country's PGRFA before they are lost;
 - test improved local varieties for their level of tolerance to abiotic and biotic stresses; and
 - introduce more PGRFA into the multilateral system for training, research and development.

3.1.3 Alignment with FAO's regional and country programming frameworks

- 39 The design and scope of the CFP II aim at increasing food security and build resilience in the face of climate change to the benefit of the vulnerable smallholders, thus contributing to the implementation of the FAO mandate in general and to FAO Strategic Objectives 2 and 4 in particular. Nevertheless, the evaluation found that CFP II did not explicitly require partners to link project activities to specific FAO Strategic Objectives. However, the Secretariat of the Treaty confirmed the FAO national offices were informed about the launch of the Call for Proposals and the selection of immediate action projects and the evaluation found no evidence to indicate the design of the strategic action plans and immediate action projects conflicted with FAO's regional/country programming frameworks. For example, the strategic action plan for Mesoamerica was found to be coherent with FAO's regional initiatives to support food security and access to food for all in Latin America (RI1) and sustainable use of natural resources, adaptation to climate change and disaster risk management (RI3).²¹ Likewise at the country level, the immediate action projects were found to be generally coherent with FAO's country operations in terms of supporting efforts to maintain food security and support adaptation to climate change among the poorest farming communities.

19 Community based Biodiversity Management for Climate Change Resilience in Bangladesh, Benin, Brazil, Ecuador, India, Guatemala, Malawi, Nepal, Nicaragua, Zambia, Zimbabwe.

20 Development of a Strategy for Building the Resilience of Pastoral Communities to Climate Change in Two Ecosystems of Sudan.

21 See <http://www.fao.org/3/a-i5414e.pdf> in particular RI3 (page 4) where it states, “At the regional level, the initiative will work on the design and promotion of agro-environmental and agro-ecological policies, on the establishment of a regional food supplies programme to answer to disasters, as well as strengthening control systems for pests and diseases”.

- 40 Nonetheless, the evaluation did not find the strategic action plan or immediate action project proposals were designed to establish synergies with the focal points for the FAO Commission on Genetic Resources for Food and Agriculture, or FAO country offices through which synergies with specific projects would have supported the scaling up and out of key actions, especially at the farm level where FAO protocols and standards relating to the use of quality planting material and seeds could have been adopted to aid farmers officially produce seed for sale at the local level.
- 41 Examples where such synergies could have been developed include, among others: Malawi, where PR-219-Malawi²² and FAO were both supporting farmers in Chikwawa District adapt to climate change; or Peru, where PR-227-Peru and FAO's Andean Seeds Project (2010-2014) were both supporting potato farmers in the country. In addition, greater synergies between FAO and the Treaty could and should have been developed between PR-246-Nepal and PR-50-Costa Rica both of which were responsible for formulating strategic action plans in Guatemala where FAO has a major country programme dedicated to food security and nutrition.
- 42 An important conclusion is that feedback and interest from the national offices to find synergies was not established to support the scaling up and out of the projects within the FAO country frameworks.

3.1.4 Responding to the needs of the end beneficiaries

- 43 The evaluation found conclusive evidence from the desk review, online questionnaires and case studies that there was insufficient time and resources available to ensure the strategic action plans and immediate action projects were designed with the full participation of representatives from farmer organizations or groups. However, to help address this situation all project proposals selected by the panel of experts were required to conduct consultative workshops and surveys to participate in the formulation of the strategic action plans and vulnerability assessments of the farming communities targeted in the immediate action projects. This was aided by the production of a large amount of scientific, geographical and technical material to support and justify the actions proposed in the strategic action plans²³ and field trials to help train farmers on the identification of PGRFA and its characteristics.²⁴
- 44 For example, the strategic action plans prepared under PR-246-Nepal implemented by the NGO Local Initiatives for Biodiversity, Research and Development, reported the adoption of bottom-up approaches to aid their formulation. Likewise, the case study of PR-50-Costa Rica²⁵ confirmed the specific needs and interests of farmer organizations were obtained through an online survey conducted by the Association of Organizations of the Cuchumatanes from Guatemala throughout the Mesoamerican region,²⁶ which confirmed three main areas of support: diversification of crops, establishment of community seed banks and propagation of varieties that are tolerant to the effects of climate change, in particular droughts.
- 45 Farmers interviewed in the case studies confirmed the vulnerability assessments and household surveys carried out at the start of the projects helped to identify coping strategies among the most vulnerable groups supported by the reintroduction of local/improved varieties (in the agro-ecological zones covered). This in turn contributed to meeting other needs such as:

- a. Increasing the sense of ownership of the PGRFA distributed by gene banks, or identified in the field through field trials. For example, farmers in PR-98-Guatemala and PR-277-Peru

22 Building Sustainable Livelihoods through On-Farm Conservation.

23 According to the Secretariat of the Treaty this has included: 3 000 maps, two regional databases and an atlas on local crop diversity, the documentation of genetic variety, erosion and climatic changes, 28 baseline studies, scientific evaluations and surveys, diagnosis of regional climate change risks, modelling of environmental futures, assessing food security, genetic erosion, household vulnerability and local needs assessments, etc.

24 Field trials included participatory variety selection, participatory plant breeding, crowdsourcing, community-based biodiversity management, farmer schools, etc.

25 Participatory and Science-based formulation of a strategic action plan to strengthen the conservation of plant genetic resources and their enhanced use in adapting to climate change in Mesoamerica.

26 In Honduras this was with the NGO Rural Reconstruction, in El Salvador with the Centre for Agriculture Research, in Nicaragua with the Federation of Cooperatives and in Costa Rica with the University of Costa Rica.

confirmed they liked the idea of conserving and improving PGRFA through the creation of community-based seed banks which they owned and controlled.

- b. Strengthening of their cultural identity. Farmers in all five case studies of immediate action projects confirmed they liked the idea of increasing capacity in the identification, conservation and breeding of PGRFA associated with their ancestors and could be prioritized according to their family preferences. For example, in PR-219-Malawi farmers confirmed their pride in reintroducing yams formerly grown by their grandparents to support their food security. The Final Report for PR-26-Brazil also confirmed a similar finding among the indigenous peoples targeted.
- c. Improving opportunities to generate income from commercial varieties of PGRFA. For example, beneficiary farmers interviewed in all the immediate action projects visited confirmed their interest to generate increased surpluses of commercial varieties of PGRFA in order to increase their economic stability.
- d. Increasing crop diversity to enhance family nutrition. For example, in India and Peru the majority of farmers interviewed confirmed their interest and need to increase the number of potato and millet varieties respectively to enhance their family nutrition and, in the case of Peru, to increase access to potato varieties with known medicinal properties.
- e. Increasing resilience to abiotic and biotic stresses, in particular relating to prolonged droughts. In all case studies farmers interviewed stated their need to make informed decisions on adapting to the effects of climate change through careful selection of local/improved varieties based on the above-mentioned needs and climatic trends.

In terms of ranking the training needs of farmers by order of importance, the farmers interviewed in all five case studies confirmed almost unanimously that training in seed selection, safe storage of seeds and seed reproduction were of utmost importance in order to maintain food security and nutrition, as well as generate surpluses adapted to the growing effects of climate change.

Box 2: At a glance - main strengths and areas for improvement on the relevance of the BSF projects

Main strengths of the BSF project portfolio evaluated:

- All strategic action plans and immediate action projects were aligned with relevant international agreements, treaties and goals including Millennium Development Goals 1 and 7 (Sustainable Development Goal 12 since 2015), Convention on Biological Diversity, United Nations Framework Convention on Climate Change and FAO's commitments to PGRFA.
- The strategic action plan proposals provided clear evidence they would be formulated in line with the institutional and legal frameworks operating at the national and/or regional levels as well as in accordance with other international commitments such as National Biodiversity Strategies and Action Plans and Reducing Emissions from Deforestation and Forest Degradation (REDD+).
- The strategic action plans and immediate action projects were required to develop effective participation of farmer organizations and other stakeholders to guide their planning and implementation. In the case of immediate action projects vulnerability assessments facilitated the identification of the farming communities to be targeted.
- The immediate action projects facilitated closer ties between farmers and gene banks through field trials designed to identify and register accessions of potential new local varieties, as well as test their tolerance to abiotic and biotic stresses, in the interests of increasing PGRFA in the multilateral system.

Areas for improvement of the BSF project portfolio evaluated:

- The selection of strategic action plans and immediate action projects was done on a case by case basis under two separate funding windows of BSF II. This removed the scope for developing synergies between Window 1 and Window 2 projects, or synergies between the immediate action projects and FAO's ongoing/newly identified projects to help scale up and out each other's main activities.
- The call for proposals focused primarily on the submission of projects dedicated to protecting food security with insufficient attention given to other aspects of PGRFA such as improving household nutrition or facilitating income generation through the use of commercial varieties of PGRFA, during the project design. Although in some cases interventions managed to increase income and improve family nutrition as unintended outcomes.

3.2 Evaluation question 2. What were the intended and unintended results achieved by the concluded projects funded by BSF II?

Finding 2. The vast majority of the 23 strategic action plans achieved consensus among stakeholders on the main actions needed to support the in situ and ex situ conservation and sustainable use of PGRFA based on four main components: conservation, sustainable use, institutional and policy reform, and education and training. The majority of immediate action projects increased the capacity of vulnerable small farmers to take informed decisions on the PGRFA to increase their resilience to the effects of climate change.

3.2.1 Have the projects produced tangible results in terms of increasing crop diversity to reduce vulnerability at the farmer level?

3.2.1.1 Window 1 – Strategic action plans

- 46 The review of the final reports of the seven projects dedicated to the formulation of a total of 23 strategic action plans at the country and regional levels provided concrete evidence that they had successfully addressed the benefits of increasing agro-biodiversity at the farm level, particularly by establishing linkages between PGRFA holders and users, to improve food security and resilience among highly vulnerable farming communities. A good example of this was PR-246-Nepal which supported the formulation of strategic action plans in 12 countries in which two community biodiversity management sites were to be developed with local farming communities (four sites in Brazil and India) to support vulnerable farmers in meeting their food and nutritional security needs and where “diversity itself, and the capacity to use diversity, is a fundamental attribute of resilience”. Furthermore, the main goal of the strategic action plans was to empower farmers and their organizations bring about policy reforms that mainstream the conservation of PGRFA and enhance farmer rights in areas such as equitable benefit sharing.
- 47 However, funding under BSF II was focused exclusively on bringing key stakeholders together to formulate the strategic action plan over a one-year period. Consequently, the implementation dialogue and other actions proposed in the strategic action plans to bring about policy changes supportive of the conservation and sustainable use of PGRFA at the farm level depended on other sources of finance.
- 48 The evaluation only found two cases where the strategic action plans were officially approved by national authorities and which received public funding following their formulation.²⁷ This was identified through the online questionnaire concerning the strategic action plans funded under PR-325-Sudan and PR-355-Tunisia. In addition, a limited number of projects proposed in the strategic action plans did receive funding under the third cycle of the BSF from 2014 to 2016 (BSF III). This included a project proposed in the case study (PR-50-Costa Rica). In addition, interviews in Costa Rica indicate the strategic action plan also contributed to the government’s decision to review its Seed Law in the interests of allowing the recognition and registration of local varieties of PGRFA.
- 49 These findings indicate a large number of strategic action plans were formulated without obtaining adequate guarantees from regional institutions, national governments, the private sector and/or NGOs that funds would be allocated to facilitate their implementation. As a result the evaluation found very few cases where the strategic action plans have acted as catalysts for the policy and legal reforms needed to ensure the conservation and sustainable use of PGRFA. This forms an integral part of national food and nutrition security policies for vulnerable farmers. Interviews with representatives of the FAO Commission on Genetic Resources for Food and Agriculture and stakeholders involved in the formulation of the strategic action plan for Mesoamerica confirmed the absence of funding guarantees has been a major weakness of the strategic action plans implementation. Indeed, interviews with the Inter-American Institute for Cooperation in Agriculture confirmed the agreement to support and promote the strategic action plan

²⁷ There are indications the strategic action plan produced under PR-59-DRP Korea may also have secured some government funding, but this could not be confirmed by the evaluation.

at the Ordinary Meeting of Ministers of the Central American Agricultural Council in 2013 was not backed up by a funding agreement.²⁸

- 50 Also significant in the case study on the strategic action plan for Mesoamerica were the specific project proposals identified for funding under BSF III for the period between 2014 and 2016. The evaluation found that coherence between different funding cycles has not been taken in due consideration while launching the BSF III. In fact, the project proposal to establish the Secretariat to oversee the implementation of the strategic action plan's main components didn't pass through the appraisal process undertaken by the Panel of Experts and has therefore not been approved for funding by the Bureau of the Fifth Session of the Governing Body.

3.2.1.2 Window 2 – Immediate action projects

- 51 The majority of case studies provided concrete evidence to confirm the immediate action projects achieved positive results in terms of increasing crop diversity at the farm level and that this contributed to reducing farmers' vulnerability to both abiotic and biotic stresses. A major factor behind this achievement was the emphasis given by the implementing partners to increasing the capacity of farmers to identify local varieties (landraces), apply improved methods of seed production, selection and storage, and improve farming practices to conserve natural resources. This was demonstrated in the following case studies:

- **PR-98-Guatemala.** 93 farmers actively participated in the operation of 5 community-based seed banks to conserve and produce 14 local varieties of maize and 9 local varieties of kidney beans.
- **PR-113-India.** 220 farmers belonging to women's groups, farmers' clubs, self-help groups or Panchayats from villages in four states²⁹ had participated in the production of an improved rice variety provided by the Consultative Group on International Agricultural Research gene bank. Likewise, the training of 65 farmers enabled them to produce local varieties of finger millet for consumption, seed selection, conservation and seed exchange to group members and other farmers.
- **PR-117-India.** More than 1 700 farmers had incorporated 30 new varieties of rice and over 1 130 farmers had incorporated 26 new varieties of wheat in their agricultural plots covering two districts in Uttar Pradesh.³⁰ This was supported by the establishment of seven seed banks to support the conservation of these varieties.
- **PR-219-Malawi.** 320 farmers from 12 Extension Planning Areas were conserving *in situ* improved local varieties of drought tolerant crops provided by the National Gene Bank as follows: sorghum (two varieties), pearl millet (one variety), cowpea (two varieties), finger millet (one variety) and yams (six varieties).
- **PR-227-Peru.** 440 farmers belonging to 23 farmer associations in five districts in Andahuaylas province were successfully conserving the germplasm of 211 local varieties of potato *in situ* against the planned target of 60 local varieties.

- 52 Similar findings were identified in the vast majority of immediate action projects assessed in the desk review. For example:

- **PR-35-Bhutan.** 356 farmers were engaged in the conservation of 19 local varieties of rice (of which 80 lead farmers had been trained in seed quality control).
- **PR-153-Indonesia.** 170 farmers had successfully established 446.8 ha of farmland dedicated to the conservation and production of local varieties of red and black rice, mung bean, maize and tubers (cassava and sweet potato).
- **PR-176-Jordan and Iran.** 135 farmers and national research stations in Jordan had evaluated 150 accessions of durum wheat and barley, and increased the production of

28 There are already a large number of policies, strategies and plans that have been approved under the Central American System for Integration (SICA), which face funding challenges including, among others: the Policy for Integrated Risk Management in Central America (PCGIR), the Policy for Food Security and Nutrition in Central America and the Dominican Republic, the Regional Strategy for Climate Change (ERCC), and the Regional Agro-environmental and Health Strategy 2009-2024.

29 Bihar (three districts), Himachal Pradesh (two districts), Uttarakhand (four districts) and Uttar Pradesh (three districts).

30 The project only distributed rice and wheat varieties officially released by the Government of India. No local varieties (landraces) of wheat or rice were used.

evolutionary populations from 3 to 25 locations and from 4 to 36 locations, respectively, by 2014. In Iran 270 accessions of durum wheat, barley and triticale were evaluated and production of evolutionary populations of durum wheat had increased from 3 to 25 locations and barley from 1 to 17 locations by 2014.

- **PR-234-Morocco.** 158 Farmers had established 16 local varieties of faba beans in four areas of the country and seed was being reproduced for follow-on farmers.
- **PR-351-Tunisia.** Farmers had introduced 21 local varieties of durum wheat and seven local varieties of barley in 14 governorates of Tunisia by 2014.
- **PR-391-Zambia.** Up to 866 farmers had introduced local varieties of sorghum, cowpea, pearl millet, cassava, sweet potato and bambara nut into the agriculture.

- 53 A second important factor was the focus given to selecting lead farmers within the participating farmer associations/groups/clubs for the training dedicated to establishing greater crop diversity (based on the training of trainers approach). This approach placed great importance on building farmers' capacity to identify local varieties,³¹ analyse their characteristics and develop seed quality control in the interests of retaining the best seed for the second growing season. The reproduction of increased quantities of quality seed was also designed to facilitate the wider use of PGRFA among other farmers within the same or neighbouring farmer associations. According to interviews with lead farmers in Guatemala, Malawi and Peru the increased productivity gained as a result of improved seed quality control provided an important incentive for farmers to increase crop diversity and to replicate good practices with follow-on farmers.
- 54 The evaluation also found this incentive continued even where lead farmers were unable to reproduce enough seed to support the multiplication of PGRFA. For example, prolonged drought in Chiquimula and Zacapa in Guatemala prevented seed germination despite two or three seeding attempts by participating farmers. Nevertheless, farmers continued to conserve as much seed as possible for the next growing season in the hope of multiplying their seeds. Only in a few cases did farmers actually abandon seed multiplication. This was the case in PR-113-India, where farmers complained the improved rice seed provided was too little to support effective replication in just one growing season (100 to 250 grams).
- 55 A third important factor was the emphasis given to recognizing and valuing local knowledge and technologies of farmers in the conservation of commercial varieties. For example, in Peru farmers were stimulated to conserve a much higher number of local varieties than planned (211 as opposed to 60 planned). This was particularly the case among upland farmers who have a high dependency on potatoes for food security and income generation from the sale of surpluses. Indeed, two farmers informed the evaluation that they were each conserving 480 native varieties of potato in Kishuara District. A sample from one farmer is shown in figure 1.



Figure 1: Sample of native potatoes produced in Andahuaylas province

31 In most immediate action projects this was aided by participatory variety selection (PVS).

- 56 In spite of the above-mentioned achievements of the immediate action projects, a major drawback affecting most of the farmers interviewed was the “immediate” nature of the projects. In particular farmers complained the two-year duration of the projects limited the opportunities to consolidate the development of quality seed. For example, agricultural research institutes and farmers alike stated they needed a minimum of three growing seasons to consolidate seed quality control of seed bearing crops. In the case of tubers such as potatoes, farmers stated a minimum of five years was needed.

3.2.2 Have the projects enhanced farmers’ capacity to adapt to the effects of climate change?

3.2.2.1 Window 1 – Strategic action plans

- 57 The strategic action plans provided clear evidence that the effects of climate change have grown significantly in the last 50 years and that this situation is increasing the vulnerability of small farmers. For example:
- **PR-325-Sudan.** Rainfall patterns for several periods between 1941 and 2000 showed two important trends: i) average annual rainfall had declined from 425 mm/year to 360 mm/year (an average decrease of rainfall by 0.5 percent/year); and ii) the coefficient of rainfall variability showed an overall increasing trend, suggesting greater rainfall variability, particularly in arid areas in the north.
 - **PR-355-Tunisia.** Average temperatures increased by between 1.1° C to 1.6 ° C in the main oases of Gabes, Gafsa and Tozeur over the last fifty years; this has contributed to reduced water resources and productive capacity.
 - **PR-292-Philippines.** Among the four countries concerned losses from droughts and floods in Cambodia were estimated at 5.5 percent of total production over the last decade alone (equivalent to a loss of production of approximately 400 000 tonnes of rice per year valued at USD 80 million).
- 58 Based on this information the vast majority of strategic action plans were found to have successfully communicated the benefits of on-farm conservation and sustainable use of PGRFA as a means to increasing the resilience of farmers to the growing effects of climate change and, therefore, to maintaining food security in the medium- to long-term. This finding was substantiated in the online questionnaire, where 86 percent of respondents confirmed the strategic action plans had fully integrated the thematic focus of the second project cycle of the BSF (i.e. increasing the resilience of small holders).
- 59 However, as stated in the previous subsection, the lack of implementation of the vast majority of strategic action plans to date has reduced the scope for governments and stakeholders to discuss incorporating the conservation and sustainable use of PGRFA in relevant policies and/or strategies linked to climate change, which is crucial to sustaining food security in coming decades. As a result, the majority of strategic action plans have so far not delivered any concrete changes at the farmer level.
- 60 The evaluation identified a number factors that have not facilitated the implementation of the strategic action plans. In the previous subsection (3.2.1) a major factor highlighted was the absence of clear funding commitments to support the mainstreaming of PGRFA into relevant regional and/or national policies and strategies. Others include, among others:
- Once the strategic action plans were formulated they were not accompanied by a suitable communication strategy to ensure the decision-making authorities understood the benefits of incorporating PGRFA in relevant policies and strategies designed to support national and international goals relating to poverty reduction and resilience among vulnerable farming communities. For example, the evaluation identified the absence of a communication strategy to encourage regional and national institutions to fund the implementation of the main components of the strategic action plans produced in the case study for Mesoamerica (PR-50-Costa Rica), or in the final reports of PR-26-Brazil, PR-325-Sudan and PR-355-Tunisia. As a result agricultural policies in these countries continue to concentrate on large-scale commercial agriculture which excludes the vast majority of small and vulnerable farmers to participate because they cannot afford the artificial inputs needed to sustain such agriculture over the medium- and long-term identified.

- The formulation of the strategic action plans was in most cases done without adequate participation of the private sector. As a result, plant breeders and seed distributors were largely unaware of the strategic action plans process and therefore unable to explore areas of mutual interest to support the adaptation of small farmers, especially in areas that are not suitable to high input agricultural practices, but where local or specialized markets could be exploited.³²
- The strategic action plans did not adequately address the implications of existing competition laws and policies that generally encourage governments to apply agricultural subsidies to support large-scale agricultural production of basic foodstuffs as opposed to supporting smallholder farmers' associations/groups become breeders of PGRFA that supports localized agriculture resilient to abiotic and biotic stresses.
- The majority of strategic action plans were formulated without adequate attention given to the role of PGRFA in improving family nutrition. This reduced the scope for building alliances with important sectors such as Public Health, through which the characterization of the nutritional qualities of PGRFA could have been more easily justified and promoted in vulnerable farming areas. This would have contributed to meeting Millennium Development Goals 1 and 4 (or more specifically Sustainable Development Goal 2 since 2015).³³
- The majority of the strategic action plans were formulated without adequate coordination with the focal points for the FAO Commission on Genetic Resources for Food and Agriculture. As a result most of the strategic action plans did not appear to have incorporated FAO best practices relating to adapted agricultural practices and technologies.

3.2.2.1 Window 2 – Immediate action projects

- 61 The evaluation found the vast majority of immediate action projects had made important contributions to supporting small farmers adapt to climate change through the reintroduction and/or development of local varieties of PGRFA tolerant to abiotic and biotic stresses.
- 62 Interviews with farmers revealed an important reason behind this achievement was the inclusion of implementing partners who had previous work experience in the intervention areas and the technical capacity to support agricultural extension services in activities such as the establishment of farmer field schools, participatory variety selection and crowdsourcing³⁴ and other participatory techniques. In a number of cases this was facilitated by either researcher-managed or farmer-managed trials designed to identify the best performing stress-tolerant varieties.³⁵ As a result farmers had access to on-the-spot learning and knowledge sharing, which enhanced their sense of ownership of PGRFA and increased their understanding of its role in adapting their livelihoods to climate change in order to safeguard their food security.
- 63 Furthermore, this approach to adaptation to climate change was found to **empower small farmers and their associations make informed decisions on their food security, nutrition and economic development**. Areas where farmers interviewed felt more empowered related to their increased capacity to:
- choose varieties that reproduced seed for the next growing season, which reduced dependency on purchasing seed from external sources;
 - produce varieties that needed little or no external inputs, thus reducing their dependency on external inputs and technology transfer;
 - select local varieties based on the preferences of both male and female farmers such as superior taste, cooking qualities, perceived nutritional content, use for rituals etc.;
 - include a selection of varieties that have a commercial value to generate income.

32 The World Food and Agriculture Review by FAO (2011) confirmed the number of undernourished people in the world has oscillated between 786 and 1 023 billion between 1995 and 2010. Given the vast majority of these people are small farmers living in marginal rural areas there are clear indications that this section of the world's population is too poor to integrate into high input farming practices.

33 SDG2: End Hunger, achieve Food Security and Improved Nutrition and promote Sustainable Agriculture.

34 Crowdsourcing engages a larger number of farmers to test the varieties in their own fields using their own farming practices in order to cover more diverse growing conditions and capture their specific needs and preferences.

35 This was done by identifying traits in each variety. For example, in India this was done by determining which varieties: 1) had best germination and emergence; 2) had maximum tillering capacity; 3) best in terms of maturity; 4) best seed quality (colour, aroma, taste); 5) was most resistant to pests and diseases; 6) had the maximum grain yield; 7) overall best plant quality; 8) were preferred by farmers for the next growing season.

- 64 Another important finding from the case studies was the **high correlation between the cultivation of abiotic and biotic stress-tolerant varieties and increased yields in relation to traditional crops**. This unintended result was identified through triangulation of data in the case studies. For example:
- **PR-98-Guatemala.** The farmers' association in Zacapa increased yields of the White Arruquin variety of maize by around 20 *percent* to between 50 and 55 quintals/manzana, aided by improved seed quality control and improved storage.³⁶ Likewise in Solola, farmers increased yields of the Breve variety of maize to over 70 quintals/manzana (2014-2015 season), supported by careful seed selection designed to produce shorter wind resistant crops.
 - **PR-219-Malawi.** Approximately 90 percent of farmers interviewed confirmed increased yields of the Pilira 1 variety of sorghum, the Nyankhombo variety of pearl millet and the Sudan 1 variety of cowpea in 2014. For example, the farmer groups at Magoti (Nsanje EPA) and Chinguluwe (Salima EPA) increased yields of Pilira 1 sorghum by over 17 percent and 12 percent respectively, between the 2013-2014 and 2014-2015 growing seasons.
 - **PR-278-Peru.** High altitude farmers in Kishuara District confirmed increased yields of Huayro potato variety resulted in an increase in production from 6 000 kg in 2012-2013 seasons to over 24 000 kg in 2013-2014 season.
- 65 In India, the final reports of the two immediate action projects implemented also confirmed similar results although they were not triangulated during the case study due to logistical constraints. For example:
- **PR-113-India.** Lead farmers were reported to have increased the yields of local varieties of finger millet by as much as 100 *percent* (especially in Uttarakhand) by applying a system of millet intensification.
 - **PR-117-India.** Farmers produced high and stable yields of over 40 quintals/ha of the Suganhdhi 5 rice variety at sites in both Badaun and Unnao Districts (69.4 quintals/ha and 45 quintals/ha respectively). Meanwhile, the wheat variety K 9107 produced yields of over 30 quintals/ha at sites in Badaun and Unnao Districts (39.6 quintals/ha and 33.45 quintals/ha respectively).
- 66 In spite of these results the evaluation found the vast majority of immediate action projects did not monitor and report the productivity and production rates of the local/improved varieties introduced. Apart from the above-mentioned examples from India the only other immediate action project that monitored these rates was PR-153-Indonesia, which reported the INPARA 1, INPARA 2 and INPARA 3 improved varieties of rice produced dried grain of 2.2 tonnes/ha, 2.5 tonnes/ha and 4.2 tonnes/ha respectively, as compared to 1.75 tonnes/ha using traditional varieties. In addition, five varieties of rice (IR42, Margasari, Mendawak, Punggur, Raya and Siak varieties) also increased yields between 2.5 and 4.0 tonnes/ha in drought conditions.
- 67 The general absence of this data indicates the BSF II funding cycle missed an important opportunity to obtain crucial data and information to support the justification and role of PGRFA in adapting vulnerable farmers to the effects of climate change in order to safeguard their food and nutrition security or identify unexpected results such as the increase in productivity or household income due to the sale of PGRFA.
- 68 Indeed, data on income generation from the production of the above-mentioned adapted varieties of PGRFA were not monitored or reported in the vast majority of immediate action projects as this was not the objective of the project proposals. However, the evaluation argues that the unexpected results identified in the case studies following the collection of anecdotal information from farmers together with an assessment of their internal accounts and inventories would have enhanced the opportunities to showcase the immediate action projects as a viable means through which **farmers can also increase their income by introducing adapted varieties of PGRFA** even when they are uncertified and sold through informal markets. The following findings substantiate this opinion:
- **PR-219-Malawi.** A workshop in Chinguluwe (Salima EPA) with 30 farmers confirmed the estimated costs of producing the Pilira 1 variety of sorghum was MWK 88 950/acre

36 1 quintal is equivalent to 45.9 kg and 1 manzana is equivalent to 0.70 ha.

(approximately USD 124/acre), but generated sales of MWK 300 000/acre (approximately USD 419/acre) in 2015-2016, resulting in estimated net profits of KMW 211 050/acre (approximately USD 295/acre); whereas staple crops such as maize produced on average of MWK 67 000/acre (approximately USD 95/acre over the same period). Likewise, the production of the Sudan 1 variety of cowpea generated estimated net profits of MWK 150 900/acre in 2015 and 2016 through informal sales at the local level.

- **PR-227-Peru.** The APAK farmers' association in Kishuara District registered PEN 618/0.25 ha (approximately USD 206/0.25 ha) for the production of Huayro potato varieties in 2012 and 2013. This increased substantially to PEN 1 050/0.25 ha (approximately USD 328/0.25 ha) in the 2013-2014 growing season. After deducting consumption and seed (500 kg), the income generated was PEN 700 (USD 218) per 0.25 ha. Although net profits were found to be relatively low, this was due to low prices in local markets. However, prices in Lima were much higher (over PEN 2.0/kg), indicating improved access to such markets could be very lucrative to smallholder farmers.

- 69 These findings confirm that **immediate action projects are an effective means to demonstrate that PGRFA can play a significant role in supporting smallholder farming communities increase their income as a result of adapting to climate change.**

3.2.3 Have the projects increased the capacity of stakeholders to exchange information and promote technology transfer to improve food security and nutrition?

3.2.3.1 Window 1 – Strategic action plans

- 70 The case study and desk review found that the workshops designed to support the elaboration of the strategic action plans³⁷ facilitated information exchange between stakeholders and this contributed significantly to increasing awareness about the importance of conserving PGRFA to support farmers adapt to climate change in order to safeguard food security. The online questionnaire confirmed this finding. In particular, respondents agreed unanimously that the strategic action plans had contributed to:

- developing linkages between PGRFA stakeholders (e.g. gene banks or farms) and users (farmers and researchers);
- improving collaboration and coordination at the regional and national levels;
- supporting the creation or consolidation of partnerships and linkages between and among sectors, networks and decision-makers engaged in the conservation, consumption and sale of PGRFA;
- promoting the exchange of technical expertise and technology;
- advocating the establishment of gene banks *in situ* and *ex situ*.

- 71 However, the evaluation did not find evidence from the case studies or the questionnaire to confirm **information exchange on PGRFA and technology transfer continued to expand after project closure.** The desk review found a number of impediments remain to establishing effective and sustained information exchange on PGRFA and technology transfer in the majority of countries involved in the strategic action plans. These impediments include, among others:

- the lack of a critical mass of human resources trained in PGRFA to ensure the networks consolidate and expand;
- absence of a suitable infrastructure and administrative framework to support networking and monitoring of implementation of the strategic action plans;
- absence of agreements between different government sectors on the adoption of common rules to implement the Treaty;
- farmers play little or no role in supporting *ex situ* and *in situ* conservation of germplasm, which in some countries continues to be conducted in a centralized manner;

37 This included an initial phase of research and baseline studies to identify the background situation on PGRFA, climate trends, challenges, etc.; a second phase of stakeholder consultations to identify goals, objectives and plan of actions with targets; a third phase of refinement of the strategic action plan; and a fourth phase designed to secure the adoption of the strategic action plan in order to start proceeding on the implementation of the first actions proposed.

- insufficient dedicated communication channels to promote and facilitate information and seed exchange between farmers and national or international seed banks;
- few public programmes and/or funds specifically dedicated to conservation and sustainable use of local varieties;
- inadequate coordination and information exchange between national and regional gene banks, which have different purposes and infrastructure levels;
- the lack of a formal request system to carry out research on PGRFA under the framework of the multi-lateral system.

3.2.3.2 Window 2 – Immediate action projects

- 72 The immediate action projects were found to be highly effective in bringing together different stakeholders to exchange information on PGRFA and promote technology transfer. In particular, they facilitated communication between the participating gene banks and farmers' associations on the benefits of working together in the field trials. These activities helped to facilitate linkages between *in situ* and *ex situ* conservation of PGRFA in order to increase the number of accessions registered in the gene banks, while at the same time aiding vulnerable farmers to adapt to climate change to safeguard their food security.
- 73 This is a significant development considering the majority of the strategic action plans identified the communication gap between the national gene banks and farmers as a major impediment to conserving PGRFA (see also the previous section on Window 1 projects). The following cases studies provide evidence that this gap was addressed at the farmer and institutional levels during the implementation of the projects:
- **PR-98-Guatemala.** Communication at the local level between lead farmers and association/group members facilitated the successful transfer of seeds and establishment of the community seed banks. The project also produced valuable publications to promote information exchange at the national and local levels on the local varieties of maize identified and selected for the seed banks to support food security and build resilience against disasters. Through the registration of eight accessions of potential new varieties of maize and six accessions (samples) of potential new varieties of kidney beans, the national gene bank at ICTA - the national agricultural research institute - was able to link *in situ* and *ex situ* conservation of PGRFA with 11 smallholder farmers.
 - **PR-113-India.** The project enabled farmers and research institutions to learn and exchange information about PGRFA, especially through participatory variety selection, to facilitate the collection and registration of 1 050 accessions from beneficiary farmers. A total of 112 accessions had been evaluated by project closure in 2014.
 - **PR-117-India.** Through participatory variety selection, the project developed new communication channels between farmers and enabled a total of 22 farmers to register seeds of local varieties of rice and wheat with the Protection of Plant Varieties and Farmers' Rights Authority in New Delhi.
 - **PR-219-Malawi.** The project enabled the national gene bank and implementing partners to test improved local varieties with farmers' groups covering the main agro-ecological zones of the countries. In addition, the national gene bank received 210 samples of PGRFA, of which 160 were related to the five target crops. A total of 112 samples were duplicated in collaboration with the gene bank of the Southern African Development Community and a preliminary evaluation and characterization has so far been conducted on 30 pearl millet, 30 sorghum and 19 cowpeas accessions.
 - **PR-227-Peru.** The project facilitated communication between the 23 participating farmers' associations and the National Institute of Agricultural Innovation on the introduction of commercial varieties of native potatoes as well as within the farmer associations themselves. In addition, 13 farmers registered a total of 163 accessions of local varieties of potato (under Standard Material Transfer Agreements) with the International Potato Center, of which a total of 96 were being evaluated by the Center as potential new varieties (in 2016).
- 74 The final reports of several other Window 2 projects assessed during the desk review also confirmed information exchange and technology transfer had improved between farmers' groups and the national gene banks. For example:

- **PR-35-Bhutan.** Success stories and results of the project were published and disseminated in the national language to widen the use of PGRFA to support adaptation to climate change and enhance food security.
- **PR-81-Ethiopia.** The Ethiopian Biodiversity Institute agreed to conduct an ex-post assessment in 2016 to determine which varieties of durum wheat and barley continue to be cultivated and are preferred by farmers.
- **PR-153-Indonesia.** The project disseminated information on PGRFA that showed positive results in terms of tolerance to abiotic and biotic stresses through the National Information Sharing Mechanism and recorded information in the Agricultural Genetic Resources Information System.
- **PR-176-Jordan and Iran.** Both countries plan to scale-up the application of evolutionary populations of durum wheat and barley with farmers' groups through the application of national programmes; the aim is to conserve local varieties to safeguard the production of bread in rural areas and develop low gluten varieties.
- **PR-234-Morocco and PR-351-Tunisia.** Both projects cooperated in holding an international symposium on results to promote the conservation and sustainable use of PGRFA, in particular the benefits of informal seed exchange of local varieties through farmers' associations and NGOs.
- **PR-391-Zambia.** The national gene bank established formal communication with farmers through its main partner, Biodiversity Community Network, which led to the trial of targeted varieties with farmers. This facilitated recognition of local knowledge, which was incorporated into farmer booklets, videos and other media to promote information exchange in the Zambezi-Gwembe Valley.

Box 3: At a glance - main achievements and shortcomings on the effectiveness of the BSF II projects

Main achievements of the strategic action plans:

- Two strategic action plans to date have received official approval and funding following their formulation.
- The strategic action plans aided stakeholders to identify their own specific projects to support the conservation and sustainable use of PGRFA and in a few cases helped precipitate policy dialogue on legal and policy reviews, such as the review of the Seed Law in Costa Rica.

Main shortcomings of the strategic action plans:

- The vast majority of the strategic action plans did not identify guaranteed sources of funding to facilitate their approval and implementation during the formulation phase.
- The participation of the private sector in the formulation of the strategic action plans was inadequate and this reduced the opportunities to identify private sector cooperation to support breeding programmes for PGRFA and technology transfer.

Main positive results of the immediate action projects:

- The participatory field trials in the immediate action projects resulted in the provision of new accessions of PGRFA to gene banks and research institutions and encouraged farmers to exchange information which increased their sense of ownership of PGRFA.
- Training of lead farmers on seed selection, storage and reproduction of abiotic and biotic stress-tolerant PGRFA in four of the five case studies facilitated an increase in productivity and production over traditional practices and in some cases increased on-farm crop diversity by more than planned.
- The increased production of PGRFA not only enhanced food security, but in a few cases enabled farmers to generate an income from the sale of surpluses.

Main shortcomings of the immediate action projects:

- Internal monitoring and reporting of the immediate action projects did not include the gathering of reliable statistics on PGRFA performance to facilitate participatory analysis of results as well as identify lessons learned and best practices to guide planning in the next planting season.
- The duration of the immediate action projects was limited to two years, but the vast majority of farmers of seed bearing and tuber crops stated they needed at least three or five growing seasons respectively to fully develop capacity in areas such as seed quality control and safe storage.

3.3 Evaluation question 3. To what extent has the institutional and implementation set-up been conducive to achieving the intended results?

Finding 3. The funding of a large number of projects with one or two-year durations and budgets ceilings of USD 400 000 (strategic action plans) and USD 300 000 (immediate action projects) reduced opportunities to optimize the added value of BSF and scale up and out the achieved outputs in the long-term.

3.3.1 Was the application of two separate Windows an efficient mechanism to meet BSF II objectives?

- 75 The evaluation found the division of BSF II funding into two Windows was an efficient mechanism to attract a large number of project proposals covering as many contracting parties as possible.³⁸ However, the establishment of budget ceilings for projects under Windows 1 and 2 (USD 400 000 and USD 300 000 respectively) contributed to “atomizing” BSF II funding into two sets of isolated projects with limited time horizons of one and two years respectively. As reported in the previous section, this approach did achieve planned outputs in terms of the formulation of over 20 strategic action plans and demonstrated that PGRFA can play an important role in safeguarding the food security of vulnerable farmers through immediate action projects. Nonetheless, the emphasis on the short-term projects restricted the opportunities to secure positive outcomes in the long run; namely the full implementation of the strategic action plans or the consolidation and replication/ scaling up of the main outputs in the immediate action projects.
- 76 Under these circumstances, the evaluation questions whether the two-window approach was conducive to optimizing the added value of BSF II. The evaluation’s findings suggest the added value of BSF II funding was not optimized for the following reasons:
- a. The call for proposals for Window 1 projects provided a clear and compelling rationale³⁹ for the priority areas to be supported in the strategic action plans,⁴⁰ but their scope was loosely targeted and not directed at specific institutions or existing policies and strategies at the national or regional levels. In particular, the call for proposals left it open to interested parties to decide whether the strategic action plans “should be developed and implemented through existing national, regional and international institutions, including effective networks, or through the creation of new consortia or other multi-stakeholder groupings” and that “ideally the strategic actions plans would be integrated or coordinated with broader global, regional or national strategies and actions plans for food security and climate change”.
 - b. The strategic action plans ran parallel to the immediate action projects as opposed to being purposely staggered, or encouraged to build synergies in the interests of incorporating lessons learned and good practices from the Window 2 projects, or relevant FAO projects and programmes. For example, PR-285-Peru, which formulated the strategic action plan dedicated to conserving PGRFA in the High Andes between 2014 and 2015 and which included the Apurimac Department did not incorporate the lessons learned from PR-277-Peru which also operated in the same Department, or the Andean Seed project implemented by FAO. Likewise, PR-50-Costa Rica which produced the strategic action plan for Mesoamerica was not found to have adequately coordinated with the strategic action plan formulated for Guatemala, Honduras and Nicaragua under PR-246-Nepal, nor identified lessons learned or best practices from the immediate action project implemented by PR-98-Guatemala. This situation appears to have reduced the opportunities to take informed decisions to support key issues, such as increasing the linkages between *in situ* and *ex situ* conservation of PGRFA.

38 A total of 444 pre-project proposals were screened and over 120 project proposals appraised by an Independent Panel of Experts (two per FAO region) in order to select the most innovative within a total budget of USD 9 162 210 (USD 5.5 million for the first batch of 19 projects evaluated in this report). Source: Draft Report on the Execution of BSF II, 2015, p.17 available at <http://www.fao.org/3/a-bb364e.pdf>

39 Based on the statement in the Call for Proposals for BSF II, “Plant genetic diversity is the single most important resource in adapting crops to rapidly changing agro-ecological conditions, and changing pest and disease patterns” (Section 3.1).

40 In response to the Declaration of the 2009 World Summit on Food Security in which climate change was seen to pose additional severe risks to food security and the agriculture sector, and in line with its Global Plan of Action, the Governing Body of the ITPGRFA established the following priorities for Cycle 2 grants: 1) Information exchange, technology transfer and capacity-building; 2) on-farm conservation and management of PGRFA; 3) participatory plant breeding; and 4) distribution of appropriate seed and planting materials.

- c. All projects produced progress and final reports in standardised formats for each funding window. The evaluation found that in the majority of cases they provided valuable information on methods applied, progress and achievements, lessons learned, etc. However, it appears there was no mechanism in place to disseminate these reports between the main stakeholders of each project to increase the opportunities for networking and cooperation and reduce the risks of duplication.
- d. The time allocated for formulating the immediate action project proposals was, according to the majority of stakeholders interviewed in the case studies, too short to allow adequate consultation with farmer associations prior to proposal formulation. As a result, farmers were not identified until the vulnerability assessments and field trials had been completed, which in several cases overlapped with the first growing season. Farmers interviewed complained this contributed to the late delivery of planting material.
- e. The submission of a large number of project proposals involving over 100 institutions⁴¹ and a wide range of stakeholders and farming communities contributed to overloading the project appraisal process managed by the Panel of Experts. This contributed to delays in starting the implementation of the first batch of projects which in most cases started in 2012.
- f. The final phase of the strategic action plan formulation process focused on communication to secure the adoption of the strategic action plan. However, as mentioned above, the strategic action plans were not required to identify an effective communication to win over decision-makers on the important role PGRFA can play in safeguarding the food security of vulnerable farmers.

3.3.2 Did the projects represent value for money?

- 77 The total budget allocation for Window 1 projects approved and completed in the 2012-2014 period was USD 2 478 227, with total expenditures of USD 2 195 763 (88.6 percent). This compares with USD 3 019 496 and total expenditures of USD 2 660 877⁴² (88.1 percent) for Window 2 projects over the same period. Although 45 percent of total funding went to seven projects under Window 1. Taking into account the majority of the strategic action plans have not secured adequate funding to support their implementation to date, the evaluation questions their value for money in relation to meeting BSF II objectives and the wider goals of the Treaty.
- 78 Meanwhile, the 12 immediate action projects evaluated had a total budget allocation of almost USD 3.02 million and total expenditures of USD 2.66 million (average of USD 221 000 per project). Taking into account the vast majority of the immediate action projects delivered results in 11 different countries at relatively low cost and within the time allocated,⁴³ the evaluation believes the immediate action projects achieved value for money. This is further justified by the fact the immediate action projects directly benefitted 35 273 farmers⁴⁴ according to figures provided by the Secretariat of the Treaty.⁴⁵ This represents an average investment of around USD 75 per farmer, although the evaluation found that total investment per capita ranged from USD 335 per farmer in PR-98-Guatemala (115 direct farmers) to USD 11 per farmer in India.⁴⁶
- 79 Nevertheless, the evaluation believes the immediate action projects would have increased their value for money had they established an internal monitoring system designed to provide decision-makers with the evidence needed to justify the consolidation and replication of PGRFA that performed well against abiotic and biotic stresses.

41 Draft Report on the execution of BSF II, p. 44 available at <http://www.fao.org/3/a-bb364e.pdf>

42 Expenditure for PR-113-India is estimated at 100 percent of budget allocation (USD 296 400) due to no data.

43 This includes projects that secured no-cost extensions of up to six months.

44 Excludes over 1 000 new farmers involved exclusively in the crowdsourcing exercises of PR-117-India.

45 Excludes extension officers, researchers, students, etc.

46 The Gene Campaign project (PR-113-India) supported a reported 26 010 farmers with total expenditure of USD 296 400.

3.3.3 Did the projects have a realistic duration in relation to their objectives and expected results?

- 80 The evaluation found ample evidence that time allocations assigned to Window 1 projects were too short. This was identified in the case studies where the majority of interviewees stated there was inadequate time to implement the final communication phase of the strategic action plan. A majority of respondents to the online questionnaire also stated the project duration applied was too short to carry out the advocacy needed to gain support for the strategic action plans. Indeed, the Secretariat's own data confirmed that stakeholders in the majority of the Window 1 projects were unable to finalize the strategic action plans within the 12-month period allocated.
- 81 In the case of the immediate action projects there was general consensus among farmers and implementing partners interviewed that the immediate action projects were also too short to develop, monitor and consolidate effective seed control, storage and development, because this requires a minimum of three or five years depending on the crop type. This finding was also substantiated in the online questionnaire where respondents recommended longer implementation time or a formal commitment to the funding of a second phase.
- 82 The desk review of final reports of PR-35-Bhutan, PR-81-Ethiopia, PR-152-Indonesia, PR-234-Morocco and PR-351-Tunisia also mentioned the duration of the projects was too short to supervise adequate seed multiplication and assess yield performance. In addition, the Report on BSF II published in 2015⁴⁷ also confirmed this finding stating the short duration of the projects risked creating the idea among farmers that their prime role was to provide information on PGRFA to the implementing partners.

3.3.4 Were the funds and other inputs provided to meet the specific objective adequate?

- 83 The evaluation found the financial resources allocated to Window 1 and 2 projects were sufficient to elaborate the strategic action plans and to implement the planned outputs in the immediate action projects. Concerning Window 2 projects, the case studies indicate this was mainly due to:
- Ensuring operational costs were kept under 30 **percent** of total expenditure, which was a significant achievement taking into account immediate action projects in India and Malawi covered a large number of agro-ecological zones involving significant logistical challenges.
 - Using implementing partners who already had work experience and, in some cases, a physical presence in the intervention areas. For example, in Malawi World Vision was able to mobilize activities relatively quickly due to its own activities in more than half of the EPA intervention areas chosen. This was also the case in Peru, where the NGO Solaris has been active in Andahuaylas for over ten years.
 - Placing emphasis on training exercises with lead farmers who were willing to pass on their skills and knowledge gained through the project with other members of their farmers' associations or groups.

47 p.43 in the Draft Report on the Execution of the Second Project Cycle of the Benefit-sharing Fund.

Box 4: At a glance - main strengths and shortcomings on the efficiency of the BSF II projects

Areas where BSF II was an efficient mechanism to deliver positive results (outputs):

- The decision to fund small, short-term projects through the two funding windows proved to be an efficient way to attract a very high number of pre-project proposals (444) and project proposals (120) from a large number institutions (110) from the contracting parties.
- The majority of the immediate action projects represented good value for money because they were able to convert limited resources (an average of USD 221 000) into positive outputs that demonstrated PGRFA plays an important role in safeguarding food security in vulnerable farming communities.
- The implementing partners of the immediate action projects were found to be efficient in maintaining operating costs to below 30 percent of total costs in spite of the fact most projects had large intervention areas covering different agro-ecological zones.

Areas where the BSF II experienced shortcomings in terms of efficiency:

- The submission of high numbers of pre-proposals and full project proposals increased the workload of the Panel of Experts assigned to appraise the proposals which contributed to delaying the approval and implementation of the first batch of 19 projects until 2012.
- The vast majority of implementing partners found the duration of their projects was too short to finalize the strategic action plans and immediate action projects. In the case of the former the final communication phase was not fully implemented in most cases. For the latter no-cost extensions were required in order to fully cover two growing seasons.
- There was inadequate information gather and transfer between projects to facilitate exposure to achievements, lessons learned, best practices etc. to aid the formulation of the strategic action plans and implementation of the immediate action projects.

3.4 Evaluation question 4. Are the projects' main activities and outcomes sustainable beyond project closure?

Finding 4. The majority of strategic action plans secured only partial funding to support their implementation, which in most cases related to new or ongoing programmes/projects of the stakeholders. Although the majority of immediate action plans have received little or no public support since 2014, lead farmers have continued to conserve and use the PGRFA distributed.

3.4.1 Are Window 1 projects likely to secure funding to ensure they are fully implemented?

- 84 The evaluation found that the majority of the strategic action plans had not secured the funding needed to implement their main components between the closure of the projects in 2014 and September 2016. For example, interviewees in the case study PR-50- Costa Rica confirmed the Central American Agriculture and Livestock Council had been unable to obtain funding commitments from potential funding sources for the strategic action plan since project closure.⁴⁸ This was substantiated in the online questionnaire where only one respondent out of a total of 13 stated the strategic action plan had received adequate funding so far.⁴⁹
- 85 However, the strategic action plans were found to have aided stakeholders obtain funding through the identification or expansion of their own projects dedicated to the conservation and sustainable use of PGRFA. This was confirmed in the case study

⁴⁸ These concerned four main components: 1) a conservation component designed to support both on-farm and in situ conservation of PGRFA as well as implement a new architecture for ex situ conservation; 2) a sustainable use component designed to make available PGRFA and support farm diversification in order to increase resilience, improve health, nutrition, income, etc.; 3) an institutional and policies component designed to support components 1 and 2 through institutional and policy reforms and, thus, implement the ITPGRFA and enhance farmers' rights; 4) an education and capacity building component.

⁴⁹ In addition six respondents did not reply to this question.

of PR-50-Costa Rica where the Association of Organizations of the Cuchamatanes from Guatemala informed the evaluation it had secured funding for three projects from BSF III, USC-Canada and the United States Agency for International Development (USAID).⁵⁰ The online questionnaire revealed a similar finding where nine out of a total of 13 respondents (stated funding had been secured since 2014 to support partial implementation of the strategic action plans, in particular relating to PR-26-Brazil, PR-325-Sudan and PR-355-Tunisia).

- 86 This finding suggests the strategic action plans have been unsuccessful in securing the political support and funding needed to facilitate their implementation as a regional/national priority, but have contributed to developing synergies between stakeholders (in particular farmer associations and NGOs) and other projects and programmes dedicated to PGRFA, including BSF III. One respondent in the online questionnaire stated these synergies are facilitating the development of new alliances beyond the traditional PGRFA community, which may be more sustainable given they rely on cooperation between breeders, farmers, NGOs, etc. as opposed to public institutions that have no funds and/or are committed to high input agriculture.

3.4.2 Do farmers continue to produce local varieties as part of their food security following the closure of Window 2 projects?

- 87 All five case studies provided no evidence to indicate that public finance at the national level had been secured to support the consolidation of the immediate action projects. This evaluation believes this was not aided by the general lack of data on the performance of PGRFA reported in the previous section, which could have been used to help promote new investment, especially from participating gene banks and the Ministries of Agriculture in the countries concerned.
- 88 However, in three of the five case studies the evaluation found cases where lead farmers who had been trained in the immediate action projects were continuing to conserve the germplasm of local/improved varieties in a number of interviewed farming communities. In all cases this was due to one of more of the following factors:
- a. Farmers had succeeded in continuing the application of adequate seed quality control, safe storage of selected seeds and the application of soil conservation techniques all of which had aided crop resistance to abiotic and biotic stresses.
 - b. Farmers wanted to reduce their dependency on external inputs and chemicals that they believed resulted in negative impacts on their health, nutrition, water resources and purchasing power.
 - c. Farmers and their associations had a market identified to buy one or more of the local/improved varieties introduced through the immediate action plan such as in Malawi and Peru.
- 89 Examples where farmers were found to be continuing the conservation of PGRFA largely using their own resources and based on their preferences are summarized as follows:
- **PR-98-Guatemala.** Three of the four farmers' associations visited (Torrero-Zacapa, Rio San Jose-Alta Verapaz and Las Canoas-Solola) were actively maintaining and using the seed silos introduced to conserve up to three local varieties of maize and two local varieties of kidney beans identified in the field trials.⁵¹ In these cases more than **50 percent** of farmers reported they had not only continued to reduce their vulnerability to the effects of climate change (the main objective of the project), but had continued to

50 BSF III agreed to fund the immediate action project entitled: Strengthening the network of community seed banks for native varieties in Guatemala (Huehuetenango) and Costa Rica (Upala), from September 2016; USC-Canada agreed to expand its Seeds for Survival Programme for Africa and Central America to include the Association of Organizations of the Cuchamatanes farmers in Guatemala; and The International Maize and Wheat Improvement Centre (CIMMYT) agreed to support the Association of Organizations of the Cuchamatanes carry out analysis and conservation plans for local varieties of maize in Huehuetenango, Guatemala under its Programme "Buena Milpa" funded by USAID and which is dedicated to conserving traditional maize cultivation systems over a five-year programme.

51 For example, lead farmers confirmed they were continuing to fumigate the seed silos every six months at all four sites visited using aluminium sulphide tablets. In addition, protection of the seedbanks from children and animals has continued at all sites visited.

produce higher yields of maize and kidney beans in spite of difficult growing conditions in 2014 and 2015.⁵² Most significant were farmers in Zacapa who reported that they produced between 50 to 55 quintals/manzana of the White Arruquin maize variety in 2015 and in Solola where farmers had successfully bred a shorter variety of Breve maize through careful seed selection enabling them to produce between 70 and 78 quintals/manzana. Moreover, similar levels of production were projected in 2016 (see figure 2).



Figure 2: Production of the shorter Breve variety of maize in Solola, Guatemala

- **PR-113-India.** The evaluation found farmers were producing local varieties of finger millet through the continued application of a system of millet intensification to help safeguard food security.
- **PR-117-India.** A high number of farmers were still cultivating the rice varieties introduced by the project to safeguard their food security. This was facilitated by either access to irrigation or continuation of systems of rice intensification adapted to local conditions and preferences. Some villages visited showed particularly high uptake of the varieties that had performed best during the project. For example, in Vairi village in Unnao District (Uttar Pradesh), approximately 50 **percent** of irrigated land belonging to around 300 households was producing three varieties distributed by the project (Kaveri, Mahsuri and Pusa 1121). In Shidapur village, Unnao District, approximately 70 **percent** of the 250 participating households in the village reported they were growing four rice varieties originally distributed by the project to lead farmers.
- **PR-219-Malawi.** Farmers interviewed in nine of the 12 EPAs informed the evaluation they were still producing one or more local varieties distributed by the project (see figure 3). In particular, farmers at the field workshop carried out in Chinguluwe EPA informed the evaluation that approximately half of the beneficiary farmers had increased the production of sorghum in the 2015-2016 growing season in order to supply 51.6 MT to the International Crops Research Institute for the Semi-arid Tropics in July 2016 on a direct forward purchasing agreement paying MWK 400/kg. As a result, participating farmers generated almost MWK 20.64 m. from the sale of sorghum alone.⁵³

⁵² In the case where farmers had not managed to replicate enough seed in 2015 due to drought (Olopa, Chiquimula department), the evaluation observed they were trying again to increase seed production in the 2015-2016 growing season.

⁵³ The implementing partner World Vision also reported younger farmers in two EPAs had started to add value to the local varieties of yams introduced by producing yam chips in Karonga and Mikalango EPAs.



Figure 3: Local varieties of sorghum, millet cowpea and yams tolerant to drought (Salima District)

- **PR-277-Peru.** Almost 100 *percent* of farmers interviewed in three of the four main intervention areas of the project reported they were successfully conserving the germplasm of at least the 211 varieties of potato, although farmers in Kishuara District claimed they were conserving as many as 480 local varieties.

90 Nonetheless, the evaluation found productivity and reproduction rates were falling among a large number of participating farmers immediately after the immediate action plans (2014-2015 and 2015-2016 growing seasons). The evaluation stresses this data was not easy to collect and relied at least in part on anecdotal evidence to identify gaps in the records of the farmer associations interviewed. However, in these cases the decline in productivity was mainly due to new abiotic or biotic stresses emerging from the effects of climate change.⁵⁴ Examples where productivity and production rates witnessed a decline include, among others:

- **PR-98-Guatemala.** Farmers in Chiquimula Department had experienced major shortfalls in the production of local varieties of maize due to prolonged drought in the 2014-2015 growing season.
- **PR-113-India.** Farmers had largely abandoned the improved rice variety provided by the Consultative Group on International Agricultural Research except where they had access to irrigation.
- **PR-277-Peru.** Lead farmers growing potatoes below 3 800 m. such as in Pacucha and San Geronimo Districts had largely stopped commercial production of the Qequrani and Huayro varieties from the 2015-2016 season due to low tolerance to pests and/or disease and instead switched to Yellow Tumbay on the grounds that it was more tolerant to biotic stresses.

91 These findings suggest the sustainability of projects' main activities is in doubt in coming years due to the lack of public and private resources to support and farmers' capitalize on their own initiatives and resources. The short duration of the projects has contributed to this situation. Other contributing factors which are likely to affect the sustainability of the immediate action plans include, among others:

- The BSF II funding cycle was designed to use limited resources to fund "quick win" projects that aim to showcase results to the Contracting Parties as opposed to supporting farmers achieve long-term sustainability.

⁵⁴ In these cases majority of farmers either abandoned the PGRFA or maintained small quantities in seed beds on-farm (i.e. less than 100 g. of seed crops).

- The national gene banks face major challenges to establishing long-term programmes designed to work with farmers on the development of *in situ* and *ex situ* conservation of PGRFA. In addition, gene banks in countries such as Guatemala and Malawi stated they had major budget restrictions to support the registration of new accessions of PGRFA and to carry out the characterization of PGRFA, especially in terms of their molecular and nutritional qualities.
- National governments continue to concentrate resources on hybrid seeds and monocultural systems through subsidies and infrastructure development, which reduces the ability of projects to enhance farmers' rights and support the development of the multilateral system. This situation was identified in Guatemala and Malawi where there is a political commitment to import high yielding maize varieties in spite of the growing cases of prolonged drought. The Draft Report on the Second Cycle of BSF II also reported similar challenges in countries such as Cambodia, Lao PDR, the Philippines and Vietnam.
- High levels of staff rotation in public institutions, including agricultural extension services, restrict the opportunities to build up support to mainstream the role of PGRFA in relevant policies and programme.
- The development of new abiotic and biotic stresses since the closure of the projects has shown farmers do not have the networks in place to facilitate information exchange between farmers' associations to support the development of sustainable production at the agro-ecological zone level as well as stimulate income generation through the sale of PGRFA based on best practices.
- Developing greater awareness on the performance of PGRFA through the development of on-farm monitoring skills and application of best practices to conserve natural resources.

3.4.3 Have farmers in Window 2 projects continued to share knowledge and build networks and strategic partnerships to facilitate information exchange and the sharing of knowledge on local varieties?

- 92 Farmers in three of the case studies confirmed that information exchange and technology transfer (quality controlled seed) has continued within their farmers' associations/groups to support activities such as seed quality control, soil and water conservation and participation in seed fairs and markets. For example, in PR-219-Malawi, farmers in Magoti and Mpatsa EPAs (Nsanje District) continue to exchange information within their respective cooperatives on the sourcing of seeds initiated by the project. These include cowpea (Sudan 1 variety), pearl millet and sorghum (Pilira 1 variety), which were used to compensate for insufficient seed stocks following floods and then drought in the 2015-2016 growing season. Likewise, in Peru, farmers' associations in Kishuara District continued to exchange information on developing and widening the number of local varieties to protect their food security, nutrition and sale of commercial varieties in informal local markets.
- 93 However, the evaluation found most of the information exchange was based on production-related issues at the farmers' association level. For example, in PR-98-Guatemala the aim was to produce a preliminary network of community-based seed banks throughout the country, but in practice participating farmers' groups did not establish a mechanism to develop the network. A similar situation was found in Malawi and Peru. According to farmers interviewed, this situation has been hampered by the general absence of legislation supporting the formal production and sale of the uncertified PGRFA. As a result, there is currently little scope to promote networks that focus on the promotion of local uncertified varieties given the legal implications involved. The National Agricultural Research Institute in Peru recognizes this represents a major issue in Peru that restricts the rights of farmers.
- 94 In addition, this situation was not aided by the lack of adequate entities to facilitate the exchange of information on agricultural products, technology transfer, productivity rates of different varieties, the costs benefit of different varieties in relation to staple crops, etc. This was reiterated by farmers during workshops and focal group meetings conducted in Guatemala, Malawi and Peru. For example, in Malawi workshops with farmers from two EPAs in Salima District identified the sorghum Pilira 1 variety and cowpea Sudan 1 variety produced net income between two and three times greater than current maize varieties used (see also section 3.2.2 above). However, this type of information had not collected and disseminated to expand the production of these crops.

95 The desk review also found a number of cases where there were inadequate mechanisms in place to sustain information exchange between farmers and their associations. For example:

- **PR-81-Ethiopia.** The stakeholders had not strengthened its on-farm conservation programme by connecting the community seed banks and facilitating the exchange of germplasm and access to a centralized information system for PGRFA.
- **PR-153-Indonesia.** Although the project provided training to stakeholders and farmers on the National Information Sharing System and Agricultural Information System, a network to facilitate information exchange relating to the management of PGRFA was not established.
- **PR-234-Morocco.** The project helped to establish a network of partnerships on faba bean varieties and it was agreed the INRA-Settat-Morocco gene bank database would be made available to users (under the conditions of the Standard Material Transfer Agreement) from 2016. However, it was not clear how these partnerships will share information to ensure farmers receive support in areas such as production of disease-free seed, or ensure access in the future to improved seeds from the INRA-Settat-Morocco gene bank.

Box 5: At a glance - main strengths and drawbacks on the sustainability of the BSF II projects

Main areas where the strategic action plans have directly or indirectly contributed to developing sustainable approaches dedicated to the conservation and use of PGRFA:

- The knowledge gained from the strategic action plan formulation process has aided stakeholders such as farmer associations and NGOs to secure support from BSF III and other donors to fund their own projects dedicated to the conservation and sustainable use of PGRFA.
- The funding of these projects has facilitated dialogue on the development of new alliances between farmer associations, NGOs, breeders and donors that could ultimately reduce dependency on public institutions that have increasingly limited resources.

Main drawbacks on the sustainability of the strategic action plans:

- The financial section in the majority of strategic action plans centred on activities designed to identify potential financing mechanisms for the proposed components in the strategic action plans. However, the lack of funding guarantees meant it was unclear how these funding mechanisms would be identified in the post project phase.

Main areas where the immediate action projects have contributed to developing sustainable approaches at the farm level:

- Farmers have remained highly committed to conserving PGRFA in their farms since 2014, especially where they have witnessed increased levels of productivity and production in the 2014-2015 and 2015-2016 growing seasons.
- Even where abiotic or biotic stresses have reduced productivity and production levels of PGRFA, the majority of farmers were found to retain as much seed as possible for the next growing season to reduce their dependency on external inputs.
- Information exchange on PGRFA has continued within the majority of beneficiary farming communities visited. In some cases this has increased the availability of PGRFA to sustain crop diversity in farmers' plots.

Main areas where the activities promoted in the immediate action projects are unlikely to be sustained:

- PGRFA is unlikely to be conserved in the medium to long-term where farmers have not been able to adopt adequate seed quality and storage controls supported by adequate agricultural extension services to supervise such developments;
- The general lack of capacity among farmers to compare and contrast production costs of PGRFA in relation to traditional staple crops grown has reduced the opportunities to expand the production of PGRFA and showcase it to decision-makers.

3.5 Cross-cutting objectives. Were gender, the rights of indigenous peoples/ethnic minorities and environmental cross-cutting objectives, fully integrated into the projects?

Finding 5. All strategic action plans and immediate action projects successfully integrated gender, the rights of indigenous peoples/ethnic minorities and environmental sustainability in their design and implementation. However, there were cases in both projects where gender equality and the rights of indigenous peoples/ethnic minorities was only partially addressed due to political and/or religious constraints.

3.5.1 Cross-cutting objective 1. Have Window 1 and 2 projects supported women and indigenous peoples/ethnic minorities to participate actively in the decision-making process at the local/farmers' association level?

- 96 The evaluation was unable to identify specific provisions in the call for proposals to ensure Window 1 projects fully integrated a gender and indigenous rights focus in the formulation and implementation of the strategic action plans. An assessment of the strategic action plans shows gender and indigenous rights had been integrated thanks to preliminary assessments and surveys which helped identify their specific needs and/or interests. This was confirmed by 8 of the fourteen respondents (57 percent) in the online questionnaire. However, six respondents (43 percent) claimed the gender focus had only been partially integrated. A similar finding was identified concerning the integration of indigenous peoples needs and rights, where eight respondents (62 percent) stated they had been fully integrated into the strategic action plan, whereas five (31 percent) stated this had not been the case.
- 97 Respondents who stated the strategic action plans had only partially addressed gender equality and indigenous rights objectives provided the following main reasons:
- The application of gender equality depended heavily on the willingness of the public authorities involved. For example, in Sudan the participation of women in workshops was not welcome and required separate women-only meetings to identify their needs and interests.
 - There were few women in senior positions to guide the formulation process of the strategic action plans. For example, the case study PR-50-Costa Rica experienced difficulties in identifying women to work on the formulation of the strategic action plan.
 - Clear strategies to address gaps relating to gender equality and indigenous rights had not been explicitly incorporated into the strategic action plans, which in some cases was due to inadequate participation of women's groups and representatives from indigenous people organizations.
- 98 Concerning the immediate action projects, the case studies and online questionnaire for Window 2 projects revealed women had been far more active in the projects. Furthermore, a total of 17 out of 21 respondents (81 percent) stated the projects had fully integrated women's participation to ensure they enjoyed greater access to information, resources and training. This had been aided by the introduction of activities specifically designed to support the participation of women's groups in the immediate action projects. For example, in the case study PR-98-Guatemala, women's groups had been targeted to participate in the development of the community seed banks at three intervention sites. A similar situation was identified in the case study PR-113-India where over 12 000 women participated in project activities.
- 99 However, the evaluation found limited evidence to suggest women had maintained or advanced their level of participation in the post project period. This was largely due to a number of contributing factors including, among others:
- The projects did not establish the provisions necessary to ensure gender equality would be respected and maintained in an exit strategy. Indeed due to the lack of time, most projects did not prepare and apply exit strategies.

- Rural women who were targeted in the projects had limited opportunities to take a proactive stance in sustaining project activities due to the absence of rights to hold land titles and own assets where they have husbands.
- The projects did not establish adequate communication through which women's knowledge in areas such as seed selection, storage, sales and food preparation could be promoted and diffused to help shape household preferences and local decision-making.
- A large part of the training concentrated on production-related activities in the field where men were mainly targeted due their highly labour intensive nature. As a result, insufficient attention was given to developing PGRFA in kitchen/homestead gardens which are usually the responsibility of women.
- There was a lack of resources in the participating gene banks and NGOs to ensure specific technical support was developed to supervise the continuation of activities and support women's groups beyond 2014.

100 In addition, the percentage of women who were direct beneficiaries of Window 2 projects was actually lower than expected (excluding Agriculture Extension Officers, researchers and students). This is because although the headline participation rate of women as direct beneficiaries was 48 percent of total participation (16 831 women) in the 12 projects evaluated, if women participants in PR-113-India are removed, the overall percentage of participation drops to just 12 percent (4 180 women) in the 11 remaining immediate action projects. As a result, the evaluation found that **the immediate action projects did not ensure the continuation of measures needed to meet the specific medium- to long-term needs and aspirations of participating women farmers.**

101 Concerning the integration of the needs and rights of indigenous peoples and ethnic minorities in Window 2 projects, the evaluation found that the vulnerability assessments conducted at the beginning of the implementation of the immediate action projects helped to identify vulnerable farmers that included women who were important knowledge holders of PGRFA. This was confirmed in the case studies such as PR-98-Guatemala and PR-277-Peru where both indigenous women and men had received training on the conservation of PGRFA. For example, this included the operation of the community seed banks in Alta Verapaz and Solola (Guatemala), by indigenous women's groups, and the distribution of potatoes seeds from INIA to the 23 participating farming associations that included indigenous women in Andahuaylas province (Peru). However, training of indigenous women as lead farmers was far less evident, although the evaluation found one indigenous woman had been trained as a lead farmer in Solola, Guatemala.

3.5.2 Cross-cutting objective 2. Has environmental sustainability been respected in Window 1 and 2 projects?

102 The integration of environmental conservation was clearly identified in the strategic action plans. Indeed, 100 percent of respondents in the online questionnaire stated the strategic action plans had fully integrated the conservation and sustainable use of natural resources to support the conservation of agro-biodiversity. Nevertheless, a review of the final reports for Window 1 projects suggest achieving environmental sustainability for PGRFA will remain a major challenge due to a number of growing threats, including:

- **PR-26-Brazil.** In northern Minas Gerais and in the Jequitinhonha Valley the diversity of cultivated and wild species is based on agricultural systems that have a territorial dimension (integrating different areas of landscape and different components of biodiversity) to support cultural identity; however, the promotion and release of transgenic crops combined with their specific chemical inputs threatens the conservation of local varieties of crops such as corn, kidney beans and cotton.
- **PR-325-Sudan.** The lack of specific land tenure agreements for pastoralists in the form of land grazing areas acts as a disincentive for pastoralists to sustainably manage natural resources.
- **PR-355-Tunisia.** Encroachment of unplanned housing on agricultural land together with the increased competition for water is making it increasingly difficult to safeguard the sustainable management of natural resources.

103 A total of 17 out of 22 respondents (77 percent) in the online questionnaire for Window 2 projects also confirmed the immediate action projects had fully integrated the conservation and sustainable use of natural resources into the training activities dedicated to conserving PGRFA. The case studies identified a high number of farmers had adopted soil and water conservation techniques and that these were still undergoing follow-up site visits to farmers' fields. For example:

- **PR-98-Guatemala.** Farmers were found to be ploughing organic and leguminous material (including weeds) into soils to retain fertility and fix nitrogen, as well as applying straw and tree twig mulching to protect soils and humidity, and maintaining contour furrowing on slopes to reduce erosion.
- **PR-277-Peru.** Small groups of farmers had protected water sources and strategic upland areas of watersheds with native trees and continued mulching and vermicomposting to support improved crop rotation practices of seed potatoes.
- **PR-219-Malawi.** Farmers were using box ridges and swalleys to capture rainwater, mulching to protect soils, and also using cowpea to fix nitrogen as an alternative means to protect soils (as a source of forage cover). In some districts, such as Karonga in the north and Nsanje in the south, both traditional and cooperative leaders were found to be actively enforcing sound environmental practices among the beneficiary farmers and the wider community.

Box 6: At a glance-main achievements and shortcomings in integrating cross-cutting objectives into the BSF II projects

Main achievements:

- The preliminary analysis and vulnerability assessments conducted at the beginning of all projects helped to identify the needs and interests of women, indigenous peoples/ethnic minorities (both men and women) and measures to help restore and/or conserve natural resources.
- Women's participation in the immediate action projects amounted to 16 831 (48 percent) of total participants, although this was mainly due to PR-113-India which had a major focus on women's participation.
- The majority of immediate action projects included specific actions for women (including indigenous women where relevant) to ensure they participated and benefited from the projects.
- The case studies revealed the majority of farmers who had been trained in the natural resource conservation practices continued to apply such practices in the post project period.

Main shortcomings:

- There was inadequate emphasis given to the training and development of women (including indigenous women) as lead farmers in all projects.
- The general lack of explicit emphasis given to improving nutrition through PGRFA reduced the scope for women to impart their specific knowledge and preferences relating to local/improved varieties.

4 Conclusions and recommendations

4.1 Conclusions

Overall conclusion

- 104 The evaluation concludes the first batch of 19 projects funded under BSF II has successfully contributed to raising awareness and building consensus among vulnerable farming communities and implementing partners on the role PGRFA plays in maintaining food and nutritional security of farmers vulnerable to the growing effects of climate change. A large number of farmer associations, grassroots organizations, NGOs, public institutions, research bodies, etc. have directly participated in and benefited from the projects' main activities covering a large number of agro-ecological regions. As such these projects have made an important contribution to implementing the Global Plan of Action adopted by the Governing Body of the Treaty, in particular in relation to its thematic areas of intervention.
- 105 On the one hand this achievement has been aided by the formulation of strategic action plans, which have resulted in the production of a large amount of scientific, geographical and technical material to support the identification of the main components and the expected results to be achieved. On the other, by the implementation of immediate action projects, supported by the application of participatory field trials, have resulted in the delivery of new accessions to gene banks and on-farm conservation and enhancement of around 1 000 crop varieties, which have contributed to maintaining the food security and increasing the resilience of an estimated 300 000 farmers living in vulnerable rural communities. In terms of the relevance and design of the projects, their effectiveness and efficiency and the perspectives for either implementing the main activities identified in the strategic action plans or sustaining the main activities realized in the immediate action projects, the evaluation identified both positive findings and shortcomings which are addressed in the following main conclusions:

Conclusion 1. Relevance

- 106 All 19 projects selected addressed important gaps both at the regional/national and local/agro-ecological zone levels, in particular the need to enhance the linkages between *in situ* and *ex situ* conservation of PGRFA and its sustainable use to safeguard the food security of highly vulnerable farming communities. This was aided by preliminary analysis, vulnerability assessments, field trials, etc. to identify and justify the actions and target groups in the strategic action plans and immediate action projects. As a result, all projects were found to be aligned to both the Treaty and other international agreements and conventions including Millennium Development Goal 1 (Sustainable Development Goal 12), Convention on Biological Diversity and United Nations Framework Convention on Climate Change. However, the call for proposals focused primarily on food security with insufficient emphasis placed on nutrition; also, inadequate attention was given to fully incorporating a gender focus in the projects.
- 107 The main shortcoming affecting the relevance of the first batch of 19 projects assessed under BSF II was the decision to fund a large number of projects through two completely independent funding windows at the same time. This helped to atomize funding, increased the risks of overlaps and removed the scope for developing synergies through which the flow of information on lessons learned and best practices could be mutually reinforcing.

Conclusion 2. Effectiveness

- 108 The strategic action plans represented an effective means through which a large number of different stakeholders linked to PGRFA could come together to exchange information, carry out research and analysis and develop consensus on the actions needed to advance *in situ* and *ex situ* conservation and sustainable use of PGRFA involving a large number of countries and regions. Meanwhile, the vast majority of the immediate action projects succeeded in developing the capacity of vulnerable farmers (men and women) to take informed decisions on safeguarding their food and nutrition security, natural resources and personal preferences relating to PGRFA. As a result, lead farmers trained in the immediate

action projects made significant contributions to *in situ* conservation of PGRFA through seed transfer of local/improved varieties of PGRFA from the national gene banks and/or recognizing and valuing smallholder farmers' knowledge and capacity to conserve local varieties that are highly adapted to local conditions, but whose morphological, molecular and nutritional characteristics are largely unknown to science and research. In addition, a number of farmers made direct contributions to *ex situ* conservation of PGRFA through the delivery of new accessions to the gene banks, many of which are in the process of being declared new varieties. Moreover, the evaluation found in three of its case studies evidence confirming some varieties of PGRFA registered high productivity and production rates which enabled farmers to generate income from the sale of surpluses in informal markets. However, the majority of the strategic action plans did not identify guaranteed sources of funding to support the implementation of the actions proposed and this resulted in a lack of clarity at project closure as to how they would deliver their planned outputs and outcomes. Likewise, the majority of immediate action projects failed to secure new sources of funding in the closure period to ensure farmers were in a position to consolidate and duplicate the main activities promoted.

Conclusion 3. Efficiency

- 109 The decision to fund a large number of strategic action plans and immediate action projects with short durations of one and two years and budgets of USD 400 000 and 300 000 was an efficient mechanism to attract high numbers of pre-proposals and full project proposals. Taking into account the above-mentioned results delivered by the immediate action projects, the evaluation considers the immediate action projects did represent good value for money, especially when average expenditure per immediate action project was USD 221 000. However, the formulation of a large number of strategic action plans without clear funding sources identified before project closure is not considered good value for money. This is further justified by the fact that there were some overlaps identified between projects (in terms of the countries covered) and the strategic action plans were formulated without information and data flows from the immediate action projects. Furthermore, the vast majority of immediate action projects did not monitor the adaptability and productivity performance of the PGRFA. This represents a major shortcoming in the immediate action projects taking into account that the evaluation identified high productivity rates of a number of local varieties of beans, maize, millet, potato, sorghum, etc. which could have been of great interest also to other immediate action projects (especially in the same regions), and decision makers in building awareness at national level on the importance of PGRFA for sustainable livelihoods and climate change adaptation. Such awareness is considered crucial to mainstream PGRFA into major national development plans as to ensure sustainability of projects funded. The monitoring of PGRFA performance is also important to upscale and replicate the interventions funded in different regions.

Conclusion 4. Sustainability

- 110 The evaluation concludes supporting vulnerable farming communities in marginal rural areas is an effective and sustainable way of conserving PGRFA as well as increasing its availability to facilitate its sustainable use.
- 111 The evaluation identified only two cases where the strategic action plans had secured adequate funding to implement their main actions in the post project period (2014-2016). In most of the other strategic action plans partial funding had been secured, but this appears to have been mainly in the form of funds for projects identified and implemented by stakeholders such as farmer associations and NGOs. As a result, the strategic action plans in most cases could not be fully implemented so far and thus been unable to deliver results in strategic areas such as policy and legal reforms. However, the evaluation did identify cases where the above-mentioned projects implemented by stakeholders are helping to forge new alliances between farmers, NGOs, breeders, etc. in the interests of reducing dependency on traditional actors in PGRFA; namely public institutions that have diminishing resources. The immediate action projects have also experienced difficulties in securing adequate funds since project closure in 2014 or early 2015 and this has resulted in a large number of farmers discontinuing the PGRFA distributed, especially where new abiotic and biotic stresses have affected harvests. Nevertheless, the evaluation found a large number of lead farmers were continuing to conserve the PGRFA distributed. Furthermore, there were cases in some of the farming communities visited in Guatemala, Malawi and Peru where crop diversity had increased and production of commercial varieties were actually registering higher productivity rates than at the end of the immediate action projects.

Conclusion 5 - Cross-cutting issues

- 112 The call for proposals did not provide explicit guidance on the gender focus to be integrated into the projects, or on the integration of other cross-cutting objectives relating to the management of natural resources, farmers' rights and the rights of indigenous peoples and ethnic minorities. In the case of gender equality, project proposals and implementation reports mainly focused on reporting the number of female participants, which in 11 of the 12 immediate action projects averaged only 12 percent.⁵⁵

4.2 Recommendations

Recommendation 1 on improving project design

- 113 All project proposals solicited through call for proposals for future funding cycles of the BSF should take into account sustainability (not just effectiveness) of main actions from the design phase. Suggested actions include, among others:
- a. Include an inception and closure period (of up to six months each). The inception period should be used to conduct participatory needs and vulnerability assessments, studies, research, etc. to facilitate planning and identification of end beneficiaries/target groups. The closure period should ensure adequate funding sources have been identified to continue key activities.
 - b. Have an implementation period that is in line with the capacity and needs of farmers and other stakeholders. In all cases where projects are dedicated to *in situ* conservation and sustainable use of PGRFA the duration should be expressed in growing seasons (not calendar years) and ensure enough growing seasons are allocated to develop effective seed quality control, storage and replication. For tubers this should be for a minimum of five growing seasons.
 - c. Strengthen ties with the private sector by ensuring PGRFA is not only promoted to safeguard food and nutrition security, but also support income generation from the sale of commercial varieties identified.
 - d. Establish internal monitoring of performance and lessons learned. In the case of projects dedicated to on-farm conservation of PGRFA performance indicators, in particular on productivity and production rates, quantities of seed retained for the next planting season, consumed or sold, etc. This should be supported by the identification of a suitable and realistic communication strategy that clarifies how PGRFA/projects will be showcased and the main purpose of showcasing.
 - e. Identify synergies with other projects funded and implemented under the BSF, FAO and the International Fund for Agricultural Development (IFAD) in particular and other organizations and donors in general.
 - f. To facilitate the implementation of the above recommendations, the Secretariat could identify and gain the approval of its own communication strategy from the Governing Body of the Contracting Parties. This strategy could include measures to facilitate internal communication and information flows between projects and a specific strategy to inform the public of its objectives, work and achievements in the interests of developing public support to move its agenda forward at the national and regional levels.

Recommendation 2 on increasing project effectiveness

- 114 Target funding in fewer projects in order to ensure that adequate finance and quality supervision and monitoring can be conducted at the project and Secretariat levels to support the delivery of intended outputs and outcomes. Suggested activities to support the delivery of planned outcomes include, among others:
- a. An update on the needs and vulnerability assessments during implementation to ensure the project optimizes its added value.
 - b. Identification and implementation of a suitable marketing strategy to ensure there is adequate supply of PGRFA to maintain its sustainable use as demand grows. Where possible this should aim at forging alliances with private breeders and/or government extension services and seed banks.

55 When PR-113-India is included the average participation of women rises to 48 percent.

- c. Ensure capacity building of farmers includes women lead farmers (aiming at a minimum of 30 percent of lead farmers) to fully integrate their needs, personal preferences and possible interest areas such as nutrition etc.
- d. Establishment of a specific fund under the BSF or which runs parallel to it which is specifically dedicated to supporting the process of characterization and certification of priority PGRFA on an on-demand basis from the projects in the interests of advancing farmers' rights relating to the commercialization and marketing of seeds in general and within the multilateral system in particular. The fund should explore attracting contributions from Contracting Parties, IFAD, FAO, etc. to ensure it is large enough to include the mobilization of technical assistance and scientific research to develop "flagship" projects that enhance the Treaty's communication strategy to the public.

Recommendation 3 on improving project efficiency

- 115 Future funding cycles should consider either combining or staggering the timing of immediate action projects in order they support strategic projects directed at national PGRFA stakeholders and complement each other and, where possible, enhance the added value of new or ongoing national-lead projects. The focus on strategic projects directed at the regional level should be focused on supporting specific cases where the conservation of PGRFA can be advanced through regional associations/partnerships that are likely to be more effective than government-lead initiatives. In addition, strategic projects should also consider supporting research-oriented projects that demonstrate the socio-economic, environmental and cultural benefits of conserving and promoting agro-biodiversity to build resilience and maintain food and nutrition security. To facilitate this process, the calls for proposals should promote project proposals that do not have to comply with a specific budget ceiling, but rather assess projects in terms of their design, effectiveness, efficiency and sustainability on a case-by-case approach based on project appraisal that ranks each project in terms of its capacity to deliver positive outcomes at reasonable cost and that these outcomes can be sustained.

Recommendation 4 on improving the sustainability of the projects

- 116 In line with Recommendation 1, public, non-governmental and/or private enterprise should be encouraged to participate in project design, implementation and monitoring to ensure there are adequate funding guarantees in place in the closure period proposed to ensure main/selected activities will continue. The final reports should provide evidence that letters of agreement (or equivalent) have been concluded with the public, private and/or non-governmental sectors to fund the continuation of these activities. The BSF should include a contingency fund to support cost extensions in specific cases where there are delays or difficulties in finalizing the letters of agreement before closure due to force majeure. To support the sustainability process the communication strategy of the Secretariat and its partners should report on developments in the post project period of at least a selection of projects. Finally, to ensure sustainability remains robust, the BSF should:
- a. Prioritize the funding of second and even third phases of projects when they support the achievement of specific goals in the Treaty's Action Plan (including the development of flagship projects).
 - b. Ensure coordination and collaboration is increased with FAO country programmes, which in some cases should allow projects to merge into these programmes.
 - c. Promote greater linkages between farmer associations and second or third levels of association (at the regional or national levels in particular) and other actors working on adaptation to climate change, biodiversity conservation or rural development.

Recommendation 5 in relation to cross-cutting objectives

- 117 In line with the above recommendations, all projects should explicitly integrate a gender focus in their design, implementation, monitoring and reporting, to ensure women are recognized as major knowledge holders of PGRFA and play a crucial role in areas such as seed selection. Therefore, the number of women who participate in project activities is not an adequate indicator to confirm they fully benefit from the BSF. Instead projects should include indicators that explicitly address equal access for men and women to resources provided by and through the projects, and their engagement in project design, implementation, monitoring and reporting. Other suggested actions include a focus on: i)

the quality of training provided to determine whether women's specific needs and interests were addressed; and ii) how many female participants gained access to information, training and resources during and after the project.

- 118 In relation to other cross-cutting objectives, such as the rights of farmers and indigenous peoples or ethnic minorities, the call for proposals should provide clear guidance that beneficiaries' needs should be met in accordance with the provisions in the Treaty, as well as relevant international agreements and declarations, such as the International Labour Organization Convention 169. In addition, particular attention should be given to ensuring that projects address the needs and rights of indigenous peoples and ethnic minorities and developing new markets for local varieties and "diversity-rich" products, such as securing denomination of origin agreements in order to add value to the PGRFA they conserve and manage.

Recommendation 6 to support the BSF funding cycles in general

- 119 In line with Recommendation 1, steps should be taken to improve knowledge and data management on the BSF-funded projects in the interests of enhancing the whole project cycle from project appraisal to monitoring (in accordance with Articles 13 and 17 of the Treaty). It is highly recommended consideration is given to:
- improving the collection, aggregation and monitoring of crucial data on PGRFA ensuring there is a gender focus to all relevant data where applicable;
 - improving the diffusion of aggregated data, findings, lessons learned and best practices using suitable networks at all levels, using social media, developing phone apps, etc.;
 - facilitating information flows between farmers and their associations at all levels;
 - facilitating data exchange between gene banks, farmers and the Secretariat;
 - developing focal points with appropriate FAO representatives to support the development of the communication strategy proposed above as well as aligned with FAO's regional and country programming frameworks.

5. Lessons Learned

Lesson 1

- 120 The decision to fund a large number of short projects with small budget ceilings is likely to be counterproductive in that it risks overburdening the appraisal process which can lead to delays in commencing implementation of selected projects and makes it very challenging to conduct efficient and effective monitoring and evaluation.

Lesson 2

- 121 PGRFA was found in a number of cases to register higher productivity rates than expected, but far cheaper to produce than hybrids that produce similar yields. This has major implications for national poverty reduction programmes and NGOs/donors committed to Sustainable Development Goal 2.

Lesson learned 3

- 122 Male farmers in particular want to produce PGRFA not only for their food and nutrition security, but to increase income. Male farmers were quick to take up high yielding commercial varieties of PGRFA in the interests of selling surpluses. Thus the conservation of PGRFA is inextricably linked to income generation.

Lesson learned 4

- 123 The training of trainers' approach worked well because implementing partners identified farmers who were willing, motivated and trusted in their associations or groups to become lead farmers. However, the immediate action projects were too short for lead farmers to apply the approach.

Lesson learned 5

- 124 Farmers liked on-farm training activities because they were in control of activities promoted and thus observe changes directly, or through participation with other farmers. This also facilitated women and children to observe developments and discuss performance.

Lesson learned 6

- 125 Project durations set in calendar years are likely to need extensions as they do not relate to agricultural calendar years that often strut two calendar years.

Lesson learned 7

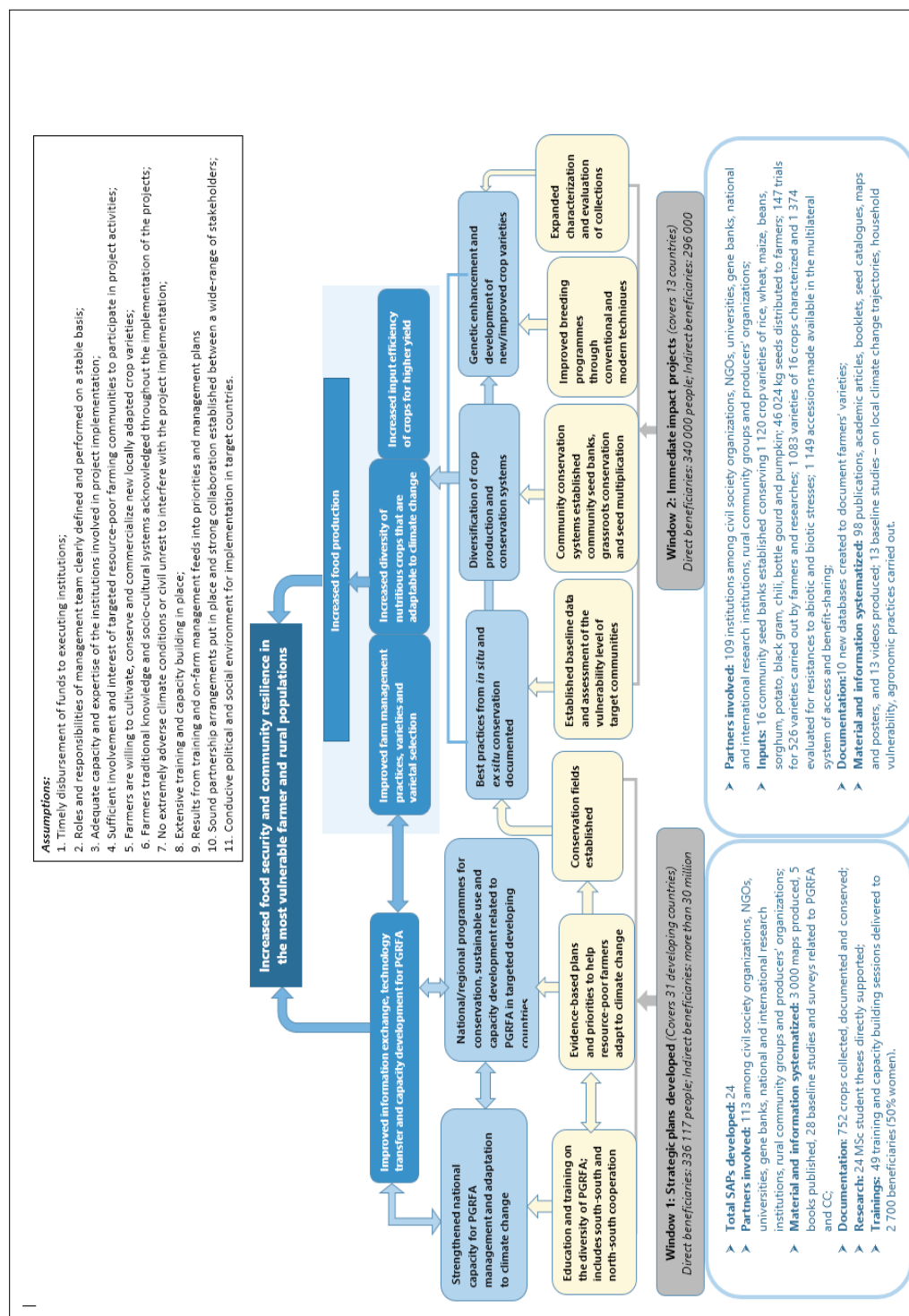
- 126 Community-based seed banks were highly popular with both male and female farmers because they own and control them. However they must be monitored and technical assistance should be guaranteed at least once each year to ensure seed quality is maintained and availability to support its sustainable use.

Lesson learned 8

- 127 Farmers face major legal and marketing hurdles in selling local varieties of crops in formal markets. However capacity development in the application of the FAO manual on farmer-based seed selection to facilitate the sale of unclassified seeds was not applied in any of the immediate action projects.

6. Appendices

Appendix 1. Theory of Change



Appendix 2. Summary of Window 1 project information: Strategic action plans

Country Submission	Target countries	Executing institution	Project title	Funding	Completion date
PR-26-Brazil	Brazil with applicants in: Costa Rica, Cuba, Guatemala, Haiti, Nicaragua and Mozambique	Alternative Agriculture Centre of North Minas Gerais State (CAA/NM)	Shared management and use of (agro) biodiversity by indigenous people and the traditional communities from the semi-arid region of Minas Gerais State as a strategy for food security and to reduce climate risks	398 227	2/20/2014
PR-325-Sudan	Sudan	Range and Pasture Administration (RPA) of Ministry of Animal Resources and Fisheries	Development of A Strategy for Building the Resilience of Pastoral Communities to Climate Change in Two Ecosystems of Sudan	320 000	2/19/2014
PR-50-Costa Rica	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama	Bioversity International	Participatory and science-based formulation of a Strategic Action Plan to strengthen the conservation of plant genetic resources and their enhanced use in adapting to climate change in Mesoamerica	400 000	4/7/2014
PR-246-Nepal	Bangladesh, Benin, Brazil, Ecuador, Guatemala, India, Malawi, Nepal, Nicaragua, Zambia, Zimbabwe	Local Initiatives for Biodiversity, Research and Development (LI-BIRD)	Community-based Biodiversity Management for Climate Change Resilience (in short, community-based management for Resilience Project)	400 000	4/29/2014
PR-59-DPR Korea	DPR Korea	Academy of Agricultural Sciences (AAS)	Development of a National Strategic Action Plan for the Food Crop Genetic Resources Management to Adapt to Climate Change in the Democratic People's Republic of Korea	360 000	8/18/2014
PR-355-Tunisia	Tunisia	Association pour la Sauvegarde de la Médina de Gafsa	Promotion de la reconnaissance des systèmes ingénieux du patrimoine agricole mondial (SIPAM)	200 000	5/13/2014
PR-292-Philippines	Bhutan, Cambodia, Lao PDR, the Philippines, Vietnam	Southeast Asia Regional Initiatives for Community Empowerment (SEARICE)	Strategic Partnership with Farmer Innovators for Adaptation and Management of Plant Genetic Resources to Climate Change	400 000	6/4/2015

Appendix 3. Summary of Window 2 project information: Immediate action projects

Country Submission	Executing institution	Project title	Funding	Completion date
PR-35-Bhutan	National Biodiversity Centre (NBC), Ministry of Agriculture and Forests	Participatory conservation & utilization of rice genetic resources for livelihood and food security	300 000	4/25/2015
PR-81-Ethiopia	The Ethiopian Institution for Biodiversity Conservation (IBC)	Using local durum wheat and barley diversity to support the adaptation of small-scale farmer systems to a changing climate in Ethiopia	300 000	8/7/2015
PR-98-Guatemala	Universidad del Valle de Guatemala	Establecimiento de una red preliminar de bancos comunitarios de semillas, en regiones vulnerables del país, para disponer de semillas en caso de desastres naturales	49 150	10/25/2014
PR-113-India	Gene Campaign	Using rice genetic diversity to support farmers' adaptation to climate change for sustainable food production and improved livelihoods in India	296 400	2/23/2015
PR-117-India	Humana People to People	Seeds for life-action with farmers in Uttar Pradesh-IGP region to enhance food security in the context of climate change	299 369	3/3/2015
PR-153-Indonesia	Indonesian Center for Biotechnology and Genetic Resources Research and Development (ICABIOGRAD)	Management, development and utilization of various crop plants for sustainable food availability	300 000	2/5/2015
PR-176-Jordan	National Center For Agricultural Research and Extension (NCARE)	Use of genetic resources to establish a multi country program of evolutionary-participatory plant breeding	297 000	3/1/2015
PR-219-Malawi	Malawi Plant Genetic Resources Centre	Improving livelihoods of local communities in semi-arid zones of Malawi through on farm conservation and exploiting the genetic potential and seed production of yams, sorghum, pearl millet, finger millet and cowpeas germplasm in mitigating climate change	295 000	3/15/2015
PR-234-Morocco	INRA-Morocco	On farm conservation and selection of local faba bean landraces of Morocco for abiotic and biotic stresses	118 000	6/29/2015
PR-277-Peru	Solaris Peru	Conservación y manejo sostenible del germoplasma de papas nativas en las comunidades campesinas de la Provincia de Andahuaylas	298 757	3/16/2015
PR-351-Tunisia	National Gene Bank of Tunisia	On-farm conservation and mining of local durum wheat and barley landraces of Tunisia for abiotic and biotic stresses, enhanced food security and adaptation to climate change	175 820	6/29/2015
PR-391-Zambia	Biodiversity Community Network (BCN)	Strengthening community-based on-farm conservation and sustainable use of crop diversity in semi-arid Zambezi-Gwembe Valley of Zambia	290 000	3/2/2015

Appendix 4. List of people interviewed

No.	Name	Role/Title	Institution
FAO headquarters, Rome Italy			
1	Bernd Bultemeier	Evaluation manager, Evaluation of FAO's contribution to Genetic Resources for Food and Agriculture	FAO
2	Shakeel Bhatti	Secretary	ITPGRFA
3	Alvaro Toledo	Technical Officer	ITPGRFA
4	Rodica Leahu	Consultant	BSF, ITPGRFA
5	Carlo Fadda	Theme Leader, Productive Agricultural Ecosystems	Bioversity International
6	Irene Hoffman	Secretary, Commission on Genetic Resources for Food and Agriculture	FAO
7	Dan Leskien	Senior Liaison Officer, Commission on Genetic Resources for Food and Agriculture	FAO
8	Stefano Diulgheroff	Information Management Officer	FAO
9	Chikelu Mba	Senior Officer, Seeds and Plant Genetic Resources Team	FAO
Malawi			
10	James Okotch	FAO Resilience Coordinator	FAO Malawi
11	Lawrent Pungulani	Curator	Malawi Plant Genetic Resources Centre (MPGRC), Chitedze Research Station
12	Modesta Milinyu	Genebank Officer	Malawi Genebank
13	Nolipher Mponya	Genebank Officer	Malawi Genebank
14	Dorothy Tembo		Centre for Environmental Policy and Advocacy (CEPA)
15	Esau Mwendo Phiri	Director	World Vision International Malawi
16	Alice Kafunda	Agricultural Extension Development Coordinator	Chinguluwe Extension Planning Area
17	E. Ngowe AEDC	Agricultural Extension Development Coordinator	Chipoka Extension Planning Area
18	D. Kamangira	Senior Deputy Director	Departments of Agricultural Research Services (DARS)
19	Gloria Ghambi	Seed Officer, Department of Agricultural Research Services	Ministry of Agriculture and Food Security (MoAFS)
20	Oswin Madzonga	Research Associate, Seed industry improvement project	International Crop Research Institute for the Semi-Arid Tropics (ICRISAT)
21	Duncan Magwira	District Agricultural Development Officer	CHIKWAWA DISTRICT
22	Getrude Kuchelekana	Agricultural Extension Development Officer	Mitole I Extension Planning Area , Chikwawa District
23	Doglous Khembo	Agricultural Extension Development Officer	Mitole I Extension Planning Area , Chikwawa District
24	Rodger Kanyimbiri	Agricultural Extension Development Officer	Mitole II Extension Planning Area ,Chikwawa District
25	Getrude Kuchelekana	Agricultural Extension Development Officer	Mitole II Extension Planning Area ,Chikwawa District
26	Richard A.W. Phiri	Agricultural Extension Development Coordinator	Mikalango Extension Planning Area ,Chikwawa District
27	Triphonia T. Mangulama	Agricultural Extension Development Officer	Mikalango Extension Planning Area ,Chikwawa District

No.	Name	Role/Title	Institution
28	George D. Chilumpha	Agricultural Extension Development Officer	Mikalango Extension Planning Area ,Chikwawa District
29	Bizwick Chabwera	Agricultural Extension Development Officer	Mikalango Extension Planning Area ,Chikwawa District
30	Moses Chindebvu	Agricultural Extension Development Coordinator	Magoti Extension Planning Area , Nsanje District
31	Joshua Bishop	Agricultural Extension Development Officer	Magoti Extension Planning Area , Nsanje District
32	Gray Mangoni	Agricultural Extension Development Officer	Mpatso Extension Planning Area , Nsanje District
33	Eda Suluma	Agricultural Extension Development Coordinator	Mpatso Extension Planning Area , Nsanje District
34	Bras Namithambo	Agricultural Extension Development Officer	Matope Extension Planning Area , Neno District
35	James Chikoya	District Agriculture Development Officer	Karonga District Agricultural Development Office
36	Penina Phewa	District Agriculture Development Officer	Karonga District Agricultural Development Office
37	Wedson Chikweyeye	Divisional Crops Officer	Karonga District Agricultural Development Office
38	Maxwell Lowole	Crops Officer	Lupembe Extension Planning Area, Karonga District
39	Kennedy Longwe	Agricultural Extension Development Officer	Lupembe Extension Planning Area, Karonga District
40	L.P Silungwe	Agricultural Extension Development Coordinator	Nyungwe Extension Planning Area , Karonga District
41	T.J Mgala	Agricultural Extension Development Officer	Nyungwe Extension Planning Area , Karonga District
42	P.S Munthali	Agricultural Extension Development Officer	Nyungwe Extension Planning Area , Karonga District
India			
43	Shyam Khadka	FAO Country Representative	FAO India
44	G. Koppa	Assistant FAO Country Representative (Programme)	FAO India
45	Anne Marie Moeller	Special Consultant, HPPI Project Development, New Delhi	Humana People to People India
46	Suman Sahai	Chairperson	Gene Campaign
47	D. S. Mishra	Deputy Commissioner	Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers' Welfare, Government of India, New Delhi
48	R K Singh		Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers' Welfare, India
49	R. R. Hanchinal	Chairperson	Protection of Plant Varieties and Farmers' Rights Authority, Ministry of Agriculture and Farmers' Welfare, Government of India, New Delhi
50	Prem Mathur		Bioversity International, New Delhi
51	Arnab Gupta	Scientist	Agroecology and Seed Systems, Country Office-India, Bioversity International, New Delhi
52	R. K. Tyagi	Principal Scientist and Head	Division of Germplasm Conservation, ICAR-NBPGR, New Delhi
53	J. C. Rana	Principal Scientist and Head	Division of Germplasm Evaluation, ICAR-NBPGR, New Delhi

No.	Name	Role/Title	Institution
54	Suman Sahai	Chairperson	Gene Campaign, New Delhi
55	Dharampal Gurjar	Project Coordinator, HPPI, New Delhi	Humana People to People India
56	Jaswant Kasana	HPPI Unit Leader, Farmer Club Project-Badaun, UP	Humana People to People India
57	Vaseem Akram	Project Leader, HPPI, Badaun	Humana People to People India
58	RP Singh	Head & Senior Scientist (Extension)	KVK, Badaun
59	Arjun Singh	Scientist (Agronomy)	KVK, Badaun
60	Yashpal Singh	Scientist (Horticulture)	KVK, Badaun
61	Sanjay Kumar	Scientist (Plant Protection)	KVK, Badaun
62	S. P. Singh	Scientist (Animal Science)	KVK, Badaun
63	Phool Singh	Scientist (Soil Science)	KVK, Badaun
64	Vimal Kumar	Farm Manager	KVK, Badaun
65	Snorre Westgaard	Executive Director	Humana People to People India
66	S S Singh	Consultant, HPPI	Humana People to People India
67	Umashankar Verma	Agriculture Officer	Bangarmau, Unnao
68	Pawan Kumar Dhaila	Project Officer	Gene Campaign
69	Komal	Staff	Gene Campaign
70	Durgadevi	Staff	Gene Campaign
71	Jayprakash	Staff	Gene Campaign
Peru			
72	John Preissing	FAO Country Representative	FAO Peru
73	Gonzalo Tejada	National project Coordinator	FAO Peru
74	Marleni Ramirez	Regional Director for the Americas Office	Bioversity International, Peru
75	Evert Thomas	Scientist, Conservation and Use of Forest Genetic Resources in Latin America	Bioversity International, Peru
76	Juan Loaiza	Senior Monitoring Advisor	Asociación Solaris Perú
77	Walter Silvera	Consultant	Asociación Solaris Perú
78	INIA Reps		
79	CIP Reps.		
80	Representatives of the Municipality in the of San Jerónimo District Municipality		
81	Representatives of 3 producer organizations benefiting from the Project in the Pacucha District Municipality		
82	Representatives of 3 producer organizations benefiting from the Project in the Kishuara District Municipality		
Costa Rica			
83	Octavio Ramírez Mixter	FAO Officer in Charge	FAO Costa Rica
84	Manuel Jimenez	Secretariat of the Central American Council for Agriculture (CAC)	System for Integration of Central America (SICA)
85	Carlos Astorga	Researcher on Plant Genetic Resources	Ex Centro Agronómico de Investigación y Enseñanza (CATIE)
86	Walter Quirós	Executive Director	Oficina Nacional de Semillas de Costa Rica-
87	Floribeth Elizondo	Ex Directora de Metodologías Agropecuarias (retired in 2016).	Ministerio de Agricultura, Costa Rica
88	Rodolfo Araya	Professor	University of Costa Rica on Plant Genetics
89	Marteen van Zonneveld	Scientist in Diversity Analysis for Conservation and Use	Bioversity, Turrialba Office, Costa Rica

No.	Name	Role/Title	Institution
Guatemala			
90	Diego Recalde	FAO Country Representative	FAO Guatemala
91	Baltazar Moscoso	National Technical Coordinator	FAO Guatemala
91	Silvana Maselli	Lead Researcher, Plant Genetic Resources Unit	Center for Agricultural and Food Studies, University of the Valley of Guatemala
92	Roberto Cobaquil	Director	Phytogenetics and Native Resources
93	Elías Raymundo Raymundo	General Manager	Institute of Agricultural Science and Technology
94	Aura Elena Suchini	Former Coordinator	National Seed Bank
95	Rolando Cifuentes	Director	Center for Agricultural and Food Studies
96	AMO Association technicians		
97	Tashi Yangzome	Program Director	National Biodiversity Centre, Serbithang (NBC) Bhutan



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