

A preliminary analysis of the global survey: On-farm management of plant genetic resources for food and agriculture

Input to the technical workshop '*Towards the establishment of a global network for in situ conservation and on-farm management of plant genetic resources for food and agriculture (PGRFA)*'

Rome, November 2012

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Executive summary

At its Thirteenth Regular Session in 2011, the Commission on Genetic Resources for Food and Agriculture (hereafter, the Commission) reiterated the need to pay greater attention to crops essential for food security, and for on-farm management of plant genetic resources for food and agriculture (PGRFA). It emphasized the need for enhanced collaboration and coordination at various levels. The Commission requested the Food and Agriculture Organization of the United Nations (FAO) to “*elaborate on the means and opportunities for establishing a global network for in situ conservation and on-farm management of PGRFA, avoiding duplication of efforts*”. The current report provides a response to this request. As a first step, FAO jointly with the Centre for Development Innovation (CDI), of Wageningen University and Research centre, the Netherlands, designed an on-line survey targeting professionals engaged in national PGRFA programmes, and in particular the practitioners contributing to the implementation of the conservation strategy referred to as on-farm management of PGRFA. In preparation of the survey, the FAO/CDI team worked closely with key counterparts, including the Secretariat of the Commission and the International Treaty on Plant Genetic Resources for Food and Agriculture, Bioversity International and the Centre for learning on sustainable agriculture (ILEIA).

A total of 1168 respondents participated in the survey. Owing to its regional coverage and stakeholder background, the outcomes of the survey has provided FAO with substantial inputs for responding to the request of the Commission. In order to tailor the questions to the profile of the respondents, the survey was structured to match two profiles: ‘PGRFA managers and policy-makers’ and ‘on-farm management practitioners’. The preliminary analysis of the survey show that more than 90% of respondents from both profiles supported the establishment of a global network for *in situ* conservation and on-farm management of PGRFA. This outcome can be considered an endorsement of the initiative to continue the process towards the establishment of a network with appropriate modalities. In addition, the survey provides ample insights into the type of interventions that stakeholders use to support on-farm management. Practitioners use a diverse range of practices to promote and contribute to on-farm management. The survey highlights priority areas that a global network supporting on-farm management should address. These include the provision of financial support and funding opportunities, knowledge-sharing and capacity development, the creation of partnerships and the provision of policy, legal and institutional support. The analysis draws attention to the need for the global network to support and enhance the capacity of the national PGRFA programmes to take a more inclusive approach in supporting on-farm management, by reaching out to less conventional and obvious partners in PGRFA management. At the same time, the global network should focus on enhancing practitioners’ awareness on national PGRFA programmes, and on the contribution they make to the conservation and use of PGRFA. The survey provided ample insights into the functioning of networks relevant to on-farm management, and the organizations that participate in and contribute to networks at various levels. Given that on-farm management is based on activities on the ground, any such global network should take an inclusive and decentralized approach, building upon the competence on the ground, and capacities of relevant stakeholders within the public sector, civil society and private sector. Only this way, the global network can reach and have impact at household-, community and local level, where this conservation strategy is realized on a day-to-day basis.

Acknowledgements

This preliminary analysis is the result of a joint effort by the Food and Agriculture Organization of the United Nations (FAO) and the Centre for Development Innovation (CDI) of Wageningen University and Research centre, the Netherlands.

First and foremost, we would like to express our appreciation to all the respondents of the survey. This assessment was only possible due to the feedback of more than a thousand individuals who took the time to respond to and complete the questionnaire.

We would also like to thank the many organizations and individuals who contributed by providing valuable and constructive suggestions throughout the planning, preparation and testing of the survey. We would especially like to acknowledge the support of Bioversity International, the Centre for learning on sustainable agriculture (ILEIA), the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture, and the Secretariat of the Commission on Genetic Resources for Food and Agriculture (CGRFA).

We are very grateful for all the contributions made by our colleagues at FAO and CDI.

A special thanks to Genowefa Blundo Canto of the Università degli Studi Roma Tre, who assisted in the descriptive analysis of the information gathered by the survey.

Thanks also to Elizabeth O'Keeffe, who assisted with copy-editing the questionnaire and the preliminary analysis and to Kurshid Dulloo, Rafael Vidal and Georgina Catacora-Vargas, who were responsible for translating the questionnaire into French and Spanish, thereby widening the target audience. We would also like to acknowledge the contributions made by Petra Straberg, Manon van Lent and Jorge Chavez-Tafur, for distributing and posting the survey online.

Saint Basile, Wageningen and Rome, November 2012

Walter de Boef, Ehsan Dulloo, Abishkar Subedi and Linn Borgen Nilsen

Acronyms

CBD	Convention on Biological Diversity
CBM	community biodiversity management
CBO	community-based organization
CDI	Centre for Development Innovation
CGRFA	Commission on Genetic Resources for Food and Agriculture
CSO	civil society organization
CWR	crop wild relatives
FAO	Food and Agriculture Organization of the United Nations
GIAHS	Globally Important Agricultural Heritage Systems
ILEIA	Centre for learning on sustainable Agriculture
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for Conservation of Nature
NARI	national agricultural research institute
NGO	non-governmental organization
OFM	on-farm management
PGRFA	plant genetic resources for food and agriculture
UNESCO	United Nations Educational, Scientific and Cultural Organization

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1. Introduction

Complementary conservation strategies

Plants account for more than 80% of the human diet, and as such the erosion of plant genetic resources for food and agriculture (PGRFA) poses a severe threat to global food security. As underlined in the Second Report on the State of the World's PGRFA (FAO, 2010b), the conservation and appropriate use of PGRFA is even more important today than in the past, as it allows us to diversify crops, foods and farming methods, and provides materials for targeted plant breeding. Several conservation strategies and methods, both *ex situ* and *in situ*, are currently used to maintain biodiversity. Both the Convention on Biological Diversity (CBD, 1992) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA; FAO, 2001) identify *in situ* conservation through on-farm management as one of the key strategies for conserving agrobiodiversity. This survey has focused exclusively on one of these approaches, i.e. on-farm management of PGRFA.

On-farm management of PGRFA is concerned with the continued use and maintenance of local crops and varieties grown in agricultural systems and home gardens. Together with *in situ* conservation of wild plants and crop wild relatives (CWR), which refers to the protection of this component of PGRFA in their natural habitat, on-farm management contributes to the conservation and sustainable management of local crops and varieties. These two strategies complement each other and are essential in ensuring the maintenance of a genetically diverse portfolio. There is, however, a large consensus in that *in situ* conservation of CWR and on-farm management of PGRFA are largely implemented by specific and distinct groups of stakeholders, which requires specific attention in terms of technical and institutional, as well as legal and policy aspects.

On-farm management as a conservation strategy

Both the CBD and the ITPGRFA define *in situ* conservation as the conservation of domesticated and cultivated species in the surroundings in which they developed their distinctive properties. The First Report on the State of the World's Plant Genetic Resources for Food and Agriculture (FAO, 1996) replaced the commonly used term '*in situ* conservation on-farm' with 'on-farm management', while maintaining '*in situ* conservation' as the overarching term. 'On-farm management' was seen to better accommodate the dynamism of farmers' management of PGRFA, and to facilitate the creation of links between the conservation of PGRFA and other crop development activities, such as plant breeding and seed production (Hardon and De Boef, 1993; Almekinders and De Boef, 2000). This strategy is also commonly referred to as 'on-farm management of local crops and varieties' as it is more comprehensible to those who are directly involved in its implementation at the level of farming households and communities, and to those who do not necessarily operate within the direct field of expertise referred to as 'PGRFA conservation and use'.

One major challenge over the past two decades has been the translation of this strategy into actual conservation practices that match the context of the livelihoods of small-scale, and often poor, farmers (Jarvis et al, 2011). It has gradually become clear that the flexible and dynamic nature of farmers' management and utilization of crops and local varieties does not match the perspective and methodologies used by conservation professionals in their design of interventions for contributing to on-farm management (Hardon & De Boef, 1993). In order to implement this conservation strategy, those professionals need to support dynamic processes and team up with farming communities that

have their own ideas and priorities in relation to agricultural development and the use of their genetic resources (De Boef, 2000).

Status of on-farm management

Most countries in the world have developed national PGRFA programmes. Even though their intention is to take a complementary approach to conservation, they often focus on *ex situ* conservation. As can be interpreted from the Second Report on the State of the World's PGRFA (FAO, 2010b), many national programmes lag behind in implementing on-farm management strategies. Despite the fact that several programmes have been put in place to promote on-farm management, and that there is an increased scientific interest and public awareness in PGRFA, major gaps concerning the conservation, management, research and sustainable use of PGRFA still need to be addressed. The Second Report on the State of the World's PGRFA provides ample insights into the advances being made regarding on-farm management, for example:

- 'The last decade has seen an increase in the use of participatory approaches and multi-stakeholder teams implementing on-farm conservation projects' (pp45).
- 'Scientific understanding of the on-farm management of genetic diversity has increased. While this approach to the conservation and use of PGRFA is becoming increasingly mainstreamed within national programmes, further efforts are needed in this regard' (pp22).
- 'In many countries NGOs play a very important role at the farm and community level in promoting and supporting the conservation and management of plant genetic resources' (pp126).

An increasing volume of literature has compiled a vast range of experiences concerning on-farm management (Jarvis et al, 2011; De Boef et al, 2013a). Many of the practices are being implemented by conservation and development organizations, or more often by NGOs that are engaged in sustainable agricultural and livelihood development, but that is not necessarily associated with a national PGRFA programme or target conservation and use as their primary objective (De Boef et al, 2013d). It is possible that the practitioners responsible for the implementation of the strategy are either not aware of this, or do not target. Promoting the conservation and use of local crops and varieties is a strategy that is aligned to other objectives, such as food security and sovereignty; locally-oriented agricultural development; sustainable livelihood development; and the promotion of community resilience. Based on those observations, we realize that conservation and development organizations approach PGRFA in the context of sustainable and livelihood development, rather than as a means to achieve conservation. Jarvis et al (2011) indicate that most initiatives are small, with modest aims and a limited area for implementation and application. They have been developed to solve problems associated with the use and maintenance of PGRFA by farmers and their communities. The initiatives usually target a multitude of crops, in dissimilar locations and situations, and associate conservation-oriented practices with farmers' livelihood development. De Boef et al (2013a) bring together experiences of different organizations from five continents that support farmers in what they refer to as the methodology of community biodiversity management (CBM).

Community biodiversity management

CBM is increasingly emerging as a methodology with its own set of practices, which aims, through a participatory process, to build community institutions and strengthen their capabilities to achieve the conservation and sustainable use of PGRFA. As part of the process, a local organization, either a government agency for rural development and extension services, or an NGO, engages itself in

strengthening the capabilities of farming communities; supporting and mentoring decision-making processes; and reinforcing local institutions, until these communities are fully autonomous in decision-making at community level, and are aware of the value of PGRFA as one of their most important livelihood assets. Such autonomous decision-making by farming communities contributes to their empowerment and leads ultimately to a situation where these communities manage their biodiversity, including PGRFA, in a sustainable manner. Once this situation is reached, the organizations supporting the farming communities have achieved one of their goals, i.e. on-farm management. In this manner, CBM as a methodology emerges as a strategy to guide conservation and development organizations in designing interventions aimed at reaching a situation where farming households and communities engage themselves in a purposeful and collective manner in the conservation and use of local crops and varieties, i.e. PGRFA.

As a methodology, CBM incorporates many of the practices used both by community-based organizations (CBOs) concerned with conservation and use, and by other external stakeholders, including conservation and development organizations. As such, CBM practices may be implemented by CBOs or external stakeholders. However, the aim of the CBM methodology is that the CBOs can use the practices to manage their local crops and varieties in a collective and purposeful manner.

Shrestha et al (2013a) observe that practices can be single actions that are geared towards raising awareness on conservation and diversity, enhancing understanding, building capabilities within CBOs, and encouraging communities to make informed decisions over their local crops and varieties. Such single action practices include rural diversity drama and poetry, diversity fairs, diversity kits and diversity blocks (Shrestha et al, 2013b). The practices may also result in the development of community institutions, such as the community seed bank (Shrestha et al 2013c), and the community biodiversity register (Subedi et al, 2013b). The practices are also approached as multi-year processes for value addition and value chain development (De Boef et al, 2013b). Several methods of participatory crop improvement are embedded within the general process of contributing to on-farm management (De Boef et al, 2013c). All of the practices are considered to be part of the CBM methodology, which in the end contributes to creating a situation in which communities assume responsibilities and engage themselves in activities that result in the on-farm management of PGRFA. In this manner, seemingly dissimilar topics such as awareness-raising, the strengthening of community organizations, value addition and participatory crop improvement are associated (Shrestha et al, 2013a).

CBM evolved gradually as a methodology beyond that which was originally developed by the NGO Local Initiatives for Biodiversity, Research and Development (LI-BIRD, Nepal) and the M.S. Swaminathan Research Foundation (MSSRF, India), together with their local, national and international partners. In addition to those groups in Asia, many organizations around the globe have gained experiences with the methodology (Thijssen et al, 2013a; Subedi et al, 2013a). Despite a diverse array of specific historical, political, cultural, biological and agro-ecological contexts, De Boef et al (2012) have identified common conditions in which the CBM methodology contributes to the empowerment of farming communities, and leads to on-farm management of PGRFA. Those commonalities cross barriers between centres of origin or diversity, as well as the old North and South divisions (De Boef et al, 2013a). Organizations involved in on-farm management may use dissimilar terminologies but they often share similar goals. Increasingly, these organizations are beginning to join efforts, as can be seen for example with the CBM and Resilience project, funded by

the Benefit-sharing Fund of the ITPGRFA, in which organizations in twelve countries across Africa, Latin America and South Asia, including LI-BIRD and MSSRF, are collaborating together.

Local conservation and development organizations, NGOs in particular, that are not necessarily linked to national PGRFA programmes, focus their work on grassroots development goals, rather than on sharing the concepts and experiences that guide and inspire them. Often, concepts emerge by practice and learning, rather than by a pre-designed process based on empirical reasoning and scientific scrutiny. A further understanding of the work of civil society and community-based actors by conservation and research institutions is therefore required. Despite the fact that professionals from these institutions usually dominate global and national conservation debates, they quite often have little practical experience in, or knowledge of, applying the CBM methodology, i.e. on-farm management (De Boef et al, 2013d). The sharing of experiences among practitioners, but also with other relevant stakeholders involved in PGRFA, is still limited, which is also emphasized in the Second Report on the State of the World's PGRFA (FAO, 2010b). This highlights the need to further explore how a multi-stakeholder platform i.e. a global network can support stakeholders and stakeholders' collaboration in this area.

Global, national and local efforts contributing to on-farm management

The need for effective *in situ* conservation and on-farm management of PGRFA is enshrined in Article 5 of the ITPGRFA (FAO, 2001) and Priority Activities 1 to 4 of the recently adopted Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (FAO, 2011). Some of the global initiatives to support on-farm management that are currently in operation include the following:

- Benefit-sharing Fund of the ITPGRFA;
- Globally Important Agricultural Heritage Systems (GIAHS);
- several projects implemented by the Centres of the CGIAR Consortium,
- the Programme of the International Union for Conservation of Nature (IUCN) on conserving biodiversity; and
- World Heritage Sites, and Man and Biosphere Reserves, of the United Nations Educational, Scientific and Cultural Organization (UNESCO)

These are examples of global initiatives, and to a limited extent they include those implemented at national level. However, those at local and community levels constitute the main sphere of operationalization of on-farm management.

As mentioned above, there is a need to strengthen the collaboration between stakeholders involved in this area, from global to community levels of operation, for contributing to on-farm management of PGRFA. A mechanism such as a global network can contribute to increased awareness on the value and necessity of on-farm management of PGRFA. It can furthermore contribute to more resources being available for addressing some of the challenges facing agricultural production at all levels, from global to community level, ensuring food security and sovereignty, and resilience to genetic erosion in times of unpredictable climatic and socio-environmental changes.

Background of the survey

At its Thirteenth Regular Session in 2011, the Commission on Genetic Resources for Food and Agriculture (hereafter, the Commission) reiterated the need to pay greater attention to those crops that are essential for food security, and for on-farm management of PGRFA, and stressed the need for improved collaboration and coordination in these areas at national, regional and global levels. In

this regard, it recognized the importance of establishing a global network for *in situ* conservation and on-farm management of PGRFA in coordination with the Secretariat of the ITPGRFA, the CBD and other relevant stakeholders, and requested FAO to “*elaborate on the means and opportunities for establishing a global network for in situ conservation and on-farm management of PGRFA, avoiding duplication of efforts*”¹.

In order to respond to the request, FAO initiated a consultation process, taking into consideration the different methodologies, targets and stakeholders involved in both *in situ* conservation of CWR and on-farm management of PGRFA. Regarding *in situ* conservation of CWR, a detailed study identifying high priority sites for the *in situ* conservation of 14 priority crop gene pools, and providing a methodology for global reserves for CWRs, had already been developed². The most critical need was therefore to assess the area of on-farm management.

To assess how a global mechanism can support on-farm management, a global survey was prepared and disseminated. FAO developed the survey together with the Centre for Development Innovation (CDI) of Wageningen University and Research centre, the Netherlands, which is engaged in several training and development programmes relevant to the implementation of on-farm management. Both organizations sought collaboration with other key partners, including Bioversity International (Rome), the Centre for learning on sustainable agriculture (ILEIA, Wageningen, the Netherlands), and the Secretariats of both the ITPGRFA and the Commission (both hosted by FAO, Rome).

The purpose of the survey was to engage with stakeholders working in the area of on-farm management, to obtain a better understanding of activities at global, regional, national, local and community levels, and to identify interventions and practices for contributing to on-farm management. The survey further aimed to explore the degree to which ‘practitioners of on-farm management’ and ‘PGRFA managers and policy-makers’ are linked, or support each other in contributing to the conservation and use of PGRFA. In addition, the survey aimed to explore the ways in which stakeholders participate in and contribute to networks that operate at various levels, from community level to global level. In conclusion, the survey aimed to determine the demand for establishing a global network that would support *in situ* conservation and on-farm management of PGRFA and highlighting some specific type of services that such a network should provide. The preliminary analysis of the survey provides an essential input to FAO’s response to the abovementioned request of the Commission, which will be presented at the Fourteenth Regular Session of the Commission, to be held in Rome from 15-19 April 2013.

¹ CGRFA-13/11/Report, paragraph 41

² Establishment of a Global Network for the In Situ Conservation of Crop Wild Relatives: Status and Need
www.fao.org/docrep/013/i1500e/i1500e18a.pdf

2. Methodology

Design of the survey

A team of scientists from FAO and CDI joined forces to design the survey. During a preparatory meeting, it was decided that 'survey monkey' would be used as the methodology to conduct the survey. The target was to approach two types of stakeholders, both those directly engaged within national PGRFA programmes, and those identified as 'on-farm management practitioners' (hereafter referred to as 'OFM practitioners'). Rather than targeting farmers and farming communities, the survey focused on those organizations that work with farmers and farming communities as 'OFM practitioners'. We realized that this would be a short-coming, but within the scope and limited resources available for the current survey, approaching farmers and farming communities would have posed many obstacles, not to mention the limitation of using a web-based survey tool. To be able to reflect on the views of the OFM practitioners in the broadest sense, we targeted both primary and secondary practitioners. Primary practitioners are those organizations and professionals that purposely target the implementation of on-farm management of PGRFA through their activities, while secondary practitioners contribute to conservation and use, but do not have this as their key objective. While the activities of those organizations and professionals categorized as primary practitioners are mostly embedded within national PGRFA programmes, this is less likely the case with secondary practitioners.

Since not many of the targeted respondents operate within international or national PGRFA arenas, we had to ensure that the language was accessible and that the introduction was short and simple and explained the purpose of the survey clearly. In the design of the survey, we tried to use multiple-choice questions as much as possible, facilitating an easy analysis and interpretation. We developed lists of options addressing several topics, among which respondents had to choose and, in some cases, quantify again using options. In case we wanted to prioritize topics, we requested respondents to identify three main or critical options among those provided. This type of question would allow us to come to some degree of prioritization.

In the structure of the survey³, we identified a number of key areas that are listed below⁴:

- Profile of respondents:
What geographic backgrounds (continental regions) are the respondents from and with which type of organization are they associated?
- Engagement in on-farm management:
What type of interventions are the respondents engaged in for supporting and promoting on-farm management?
What practices for supporting on-farm management do the respondents participate in, support or organize, and do the respondents consider these practices important?
What type of support do the respondents provide and which type do the respondents consider most relevant for promoting on-farm management?
- Relationship and collaboration with national PGRFA programmes:
Are the respondents familiar with the national PGRFA programme?

³ The outline of the survey can be requested by contacting the Seeds and Plant Genetic Resources team (AGPMG) at FAO.

⁴ The outline and questions correspond with the survey questionnaire

Do they consider their activities contribute to the on-farm management part of the national PGRFA programme?

- Networks supporting on-farm management:

Do respondents participate in networks relevant to on-farm management?

At what level do these networks operate?

What role do the respondents play in the network?

What are the main benefits of participating in the network?

- Demand to develop a global network:

Do respondents consider it important that a global network be established?

What are the most critical services that a global network should provide?

Before running the survey on the web and approaching the compiled database of potential respondents, a small but diverse group of resource persons (25) was requested to join in a pilot testing of the questionnaire. Comments of those who participated in the pilot were incorporated into the survey and its structure was improved. Upon conclusion of the final version, the survey was translated into French and Spanish. The survey was made available on the web in the period from 13 September until 13 October 2012. Potential respondents received an invitation by email, and links were posted on the FAO/AGPMG website, the Bioversity website and in the ILEIA e-newsletter.

Profile of the respondents

As indicated above, we targeted two key groups of respondents. The first group comprised those engaged at management level in national PGRFA programmes and associated policy-makers. The second group consisted of primary and secondary 'OFM practitioners'.

The respondents were classified as either 'OFM practitioners' or 'PGRFA managers and policy-makers' at the beginning of the survey, after which they were presented with a set of questions specifically targeting the profile they had been classified as. To distinguish 'OFM practitioners' from 'PGRFA managers and policy-makers', we asked respondents to identify themselves with one of the following terms in relation to on-farm management of PGRFA:

- a) I am directly engaged
- b) I provide direct support to farmers
- c) I support the government and national stakeholders in the management of PGRFA
- d) I manage the national programme on PGRFA
- e) I contribute to the development of national policies

We assumed that respondents who answered a or b best matched the profile of 'OFM practitioner' and those who selected c, d or e corresponded with the profile of 'PGRFA manager and policy-maker'.

Networks used in searching for potential respondents

In order to get the best coverage possible within the target one-month period in which the survey was available, we identified a number of sources of people to be approached for participation in the survey. These were known resource persons from various types of organizations, instruments and projects. In addition to those directly targeted, all respondents were encouraged to distribute the links to the survey within their respective networks and organizations. Specific networks that were directly involved include:

- FAO Member countries' focal points from national PGRFA programmes

- Applicants and beneficiaries of the first and second call for proposals of the Benefit-sharing Fund of the ITPGRFA (primary OFM practitioners)
- Alumni of the relevant training programmes of the Centre for Development Innovation (primary and secondary OFM practitioners)
- A selection of members and subscribers of the newsletter *Farming Matters* and its regional versions associated with ILEIA (predominantly secondary OFM practitioners)
- Staff working within the organizations associated with the CBM and Resilience Project.

Analysis and interpretation

A first step in the analysis of the data was to process all records from survey monkey into excel. Given the short period of analysis, the fact that in many cases the number of respondents varied from question to question and the fact that the survey outcome would provide inputs to a technical workshop that would explore means and opportunities for establishing a global network for *in situ* conservation and on-farm management, we decided to engage in descriptive analysis only, and not a statistical analysis or interpretation of the information. The current preliminary analysis has been prepared by scientists associated with CDI and FAO, based on the descriptive data.

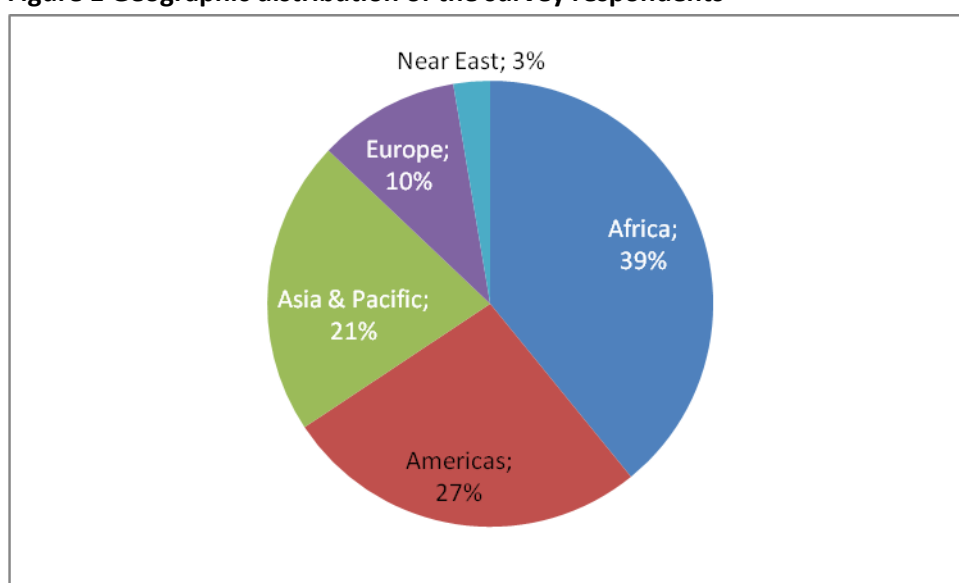
3. Survey results

3.1 Profile of the respondents

Geographic origin and stakeholder background

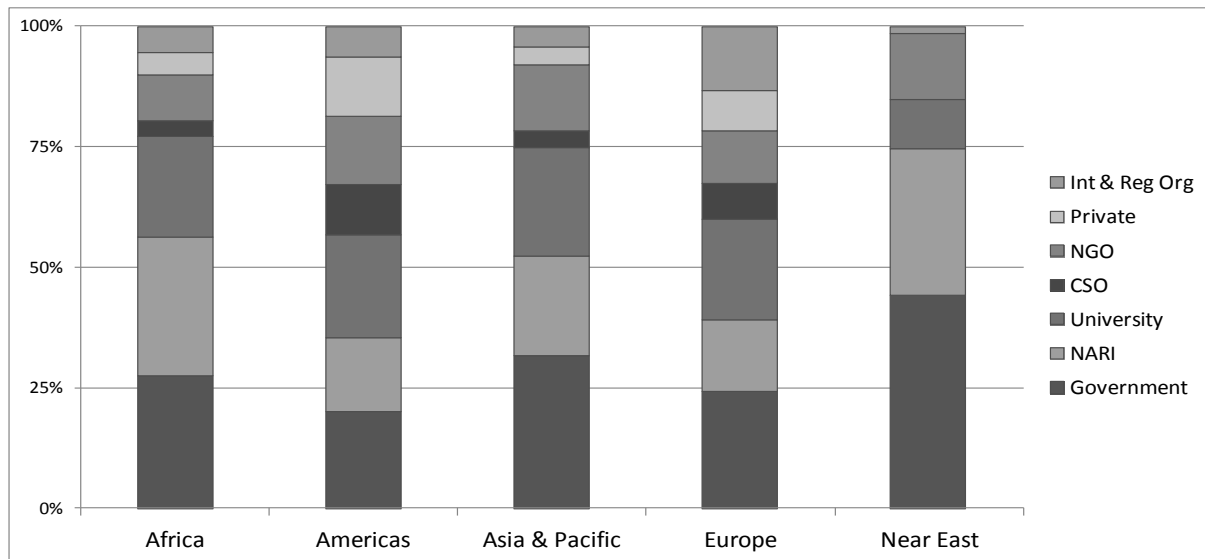
A total number of 1168 respondents participated in the survey. The majority of respondents were from Africa (424), followed by the Americas (394) and the Near East (151); numbers that reflected both the size of the region and their expertise in working with on-farm management (OFM). The number of respondents from Asia & Pacific was relatively small (130), considering the size of this region and the expertise in working with OFM. The number of respondents from Europe was also relatively small but still noteworthy (69). Figure 1 illustrates the geographic distribution of the participants.

Figure 1 Geographic distribution of the survey respondents



Respondents included a range of stakeholders engaged in PGRFA and OFM, and Figure 2 provides an overview of the respondents, categorized according to their stakeholder group within each region. In Africa, Asia & Pacific, and the Near East, participation from public organizations (governments, national agricultural research institutes, universities) accounted for 75-80%. In most regions, the percentage of respondents from universities was even higher than that from national agricultural research institutes (NARIs). In the Americas and Europe, civil society organizations (CSOs) accounted for around 20% of the respondents, whereas in other regions this was less than 10%, with very few respondents belonging to this group in the Near East. The share of respondents from NGOs was similar for all regions, 15-20%; whereas the private sector varied more among the regions, with an average of 20% in the Americas to being almost absent in the Near East. International and regional organizations accounted for less than 10% in all regions, except for Europe, which is logical considering the fact that several international organizations associated with PGRFA are located there.

Figure 2 Overview of respondents, organized according to percentage of stakeholder group within each region

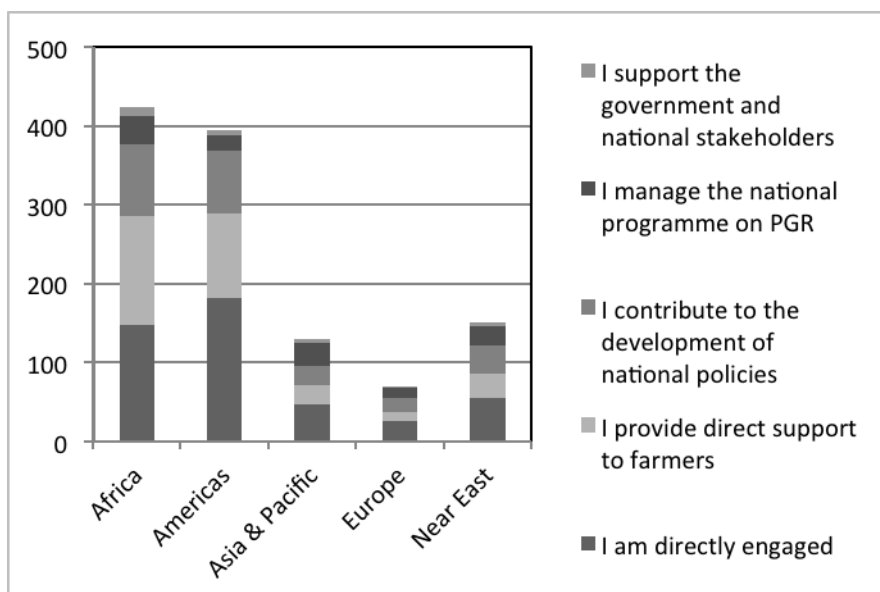


Profile of the respondents

In Figure 3, we share the absolute numbers grouped per region of how respondents identified themselves in relation to on-farm management of PGRFA, as indicated here:

- a) I am directly engaged
- b) I provide direct support to farmers
- c) I support the government and national stakeholders in the management of PGRFA
- d) I manage the national programme on PGRFA
- e) I contribute to the development of national policies

Figure 3 Number of respondents per region matching the two profiles, organized according to relationship with on-farm management, PGRFA management and policy development



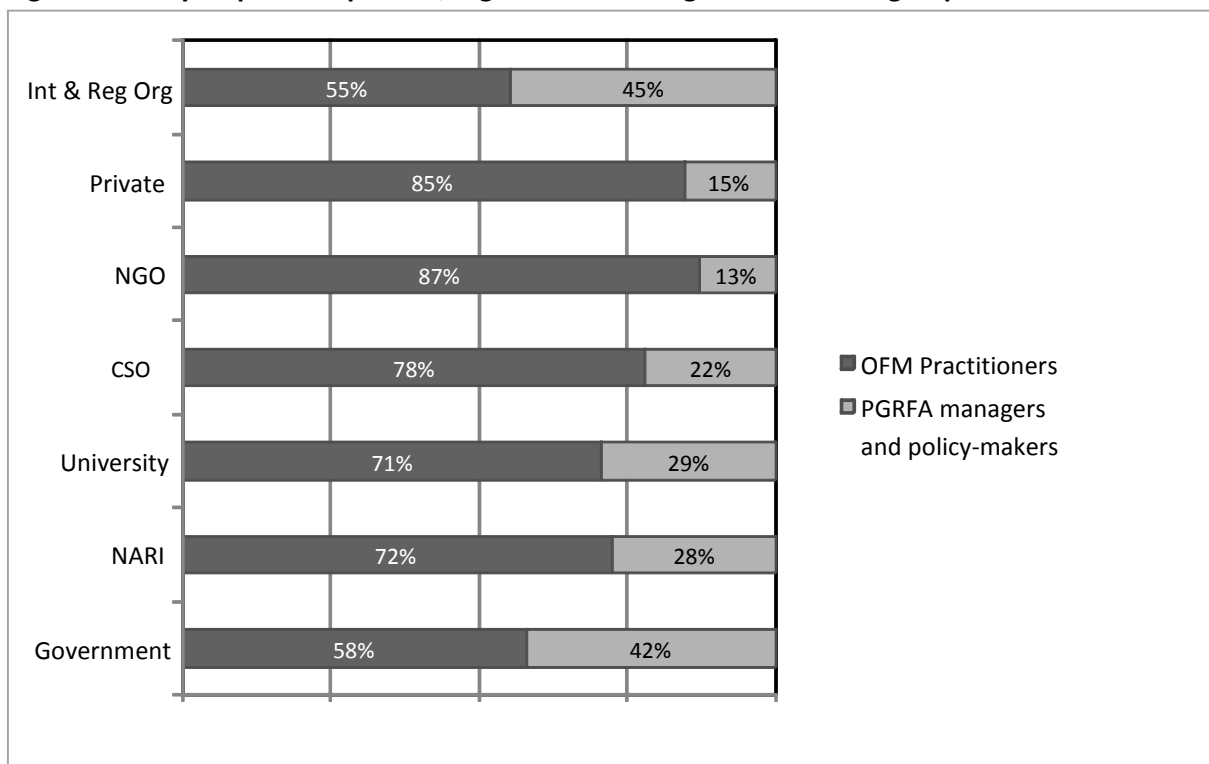
As indicated above in the section on methodology, we have grouped the respondents in two profiles⁵:

- 'OFM practitioners'
- 'PGRFA manager and policy-makers'

We clustered the responses a and b, and considered those respondents as 'OFM practitioners'. The remaining group, thus those who responded with answers c, d and e, are considered 'PGRFA managers and policy-makers'. Consequently, Figure 3 shows that almost two thirds of the respondents, in particular in Africa and the Americas, identified themselves as 'OFM practitioners'. In the other regions, the two groups of respondents are more equal in size.

In Figure 4, we further categorized the two profiles according to stakeholder groups. Logically, the majority (78%-85%) of respondents representing CSOs, NGOs and private sector are associated with the profile of 'OFM practitioners'. Interestingly, 58%-72% of respondents associated with governments, NARIs and universities, are also considered 'OFM practitioners', based on their answers to this question. As expected, there is a higher percentage (45%) of 'PGRFA managers and policy-makers' from international and regional organizations.

Figure 4 Survey respondent profiles, organized according to stakeholder group



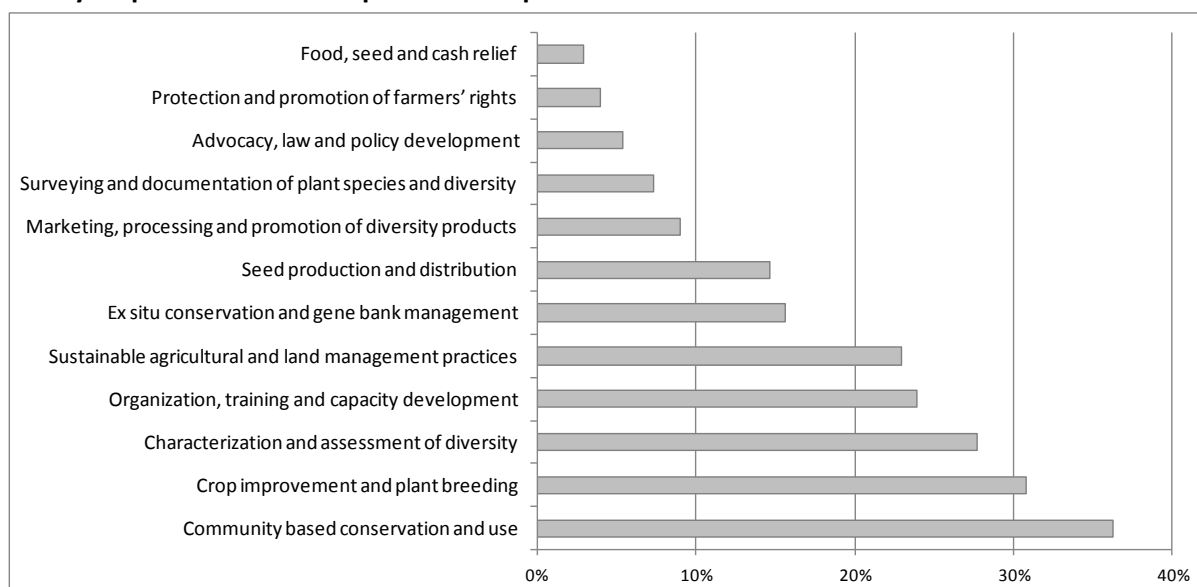
⁵ See the section on Methodology (section 2) for further explanations with regards to the classification of 'OFM practitioners' and 'PGRFA manager and policy-makers'

3.2 Activities contributing to on-farm management

Interventions contributing to on-farm management

Over the process of grouping survey respondents, we aimed to gain a better insight into what the 'OFM practitioners' considered to be the main areas of interventions within their organizations. We provided respondents with a list, from which they identified the three major interventions in which their organization is engaged. Figure 5 shows the frequency of the interventions, as mentioned by the respondents. It is logical that the more generic term 'community-based conservation and use' is identified by more than 35% of the respondents, followed by interventions such as 'crop improvement and plant breeding', and thereafter 'characterization and assessment of diversity', which are relevant to both *ex situ* and on-farm management strategies. One sixth of the respondents also considered *ex situ* conservation and gene bank management a key area of intervention, which illustrates that many 'OFM practitioners' are also familiar with, and involved in, other conservation methods. 'Organization, training and capacity development of local groups' and 'sustainable agricultural and land management practices' were identified by almost one fourth of the respondents. It is, however, remarkable that very few of the 'OFM practitioners' are engaged in 'the protection and promotion of farmers' rights' (4%) or in 'advocacy, law, and policy development' (4%).

Figure 5 Main areas of interventions contributing to on-farm management of PGRFA, according to survey respondents with the profile 'OFM practitioner'



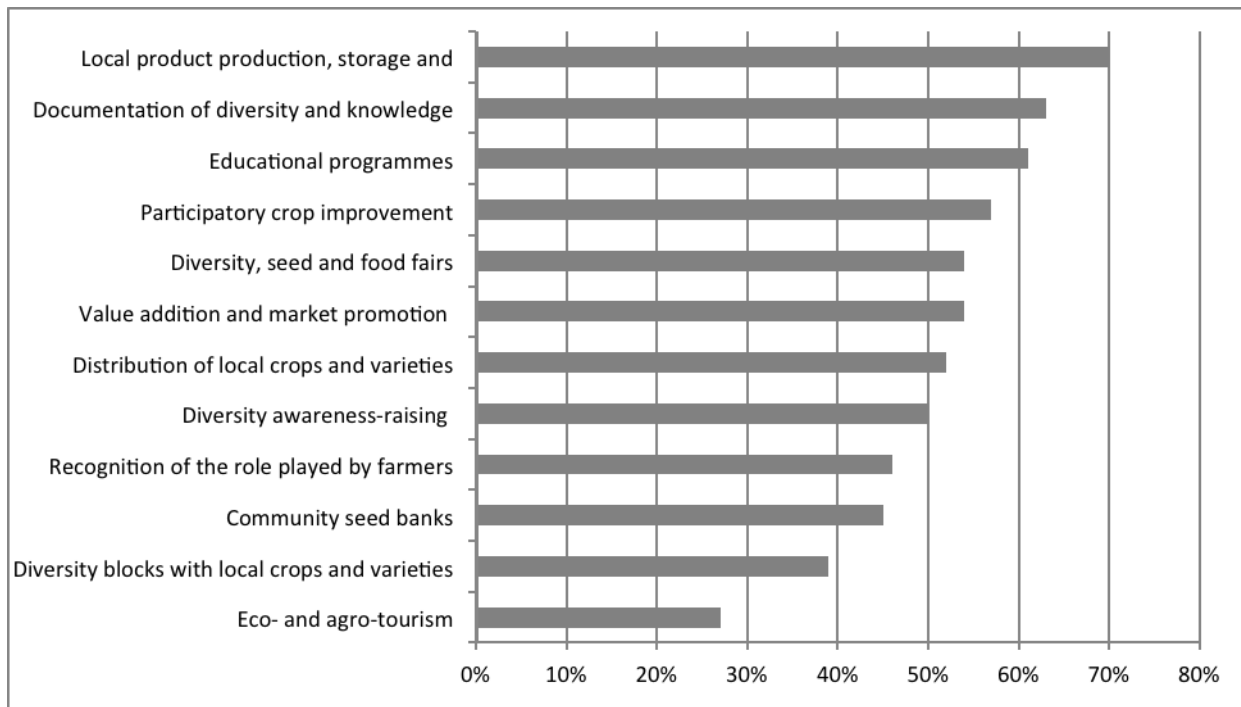
Notes: $n=818$; respondents matching the profile 'OFM practitioners' identified three main areas from a list of options

Practices contributing to on-farm management

Where areas of intervention are more generic, we further requested respondents that matched the profile of 'OFM practitioner' to indicate their involvement in practices that contribute to on-farm management of PGRFA, which were described above in the introductory section. The structure of the survey made it compulsory for the respondent to make a choice for each practice between 'not involved', 'participated', 'supported' and 'organized'.

Figure 6 illustrates those practices in which ‘OFM practitioners’ were involved (participated, supported and/or organized) over the past five years. It shows that more than 70% have been involved in ‘Local product production, storage and promotion’, followed by ‘Documentation of diversity and knowledge’ and ‘Educational programmes’, in which more than 60% of the respondents have been involved. Few respondents have been involved in Eco- and agro-tourism, which scores less than 30%.

Figure 6 Percentage of ‘OFM practitioners’ who have participated in, supported or organized OFM practices in the last five years



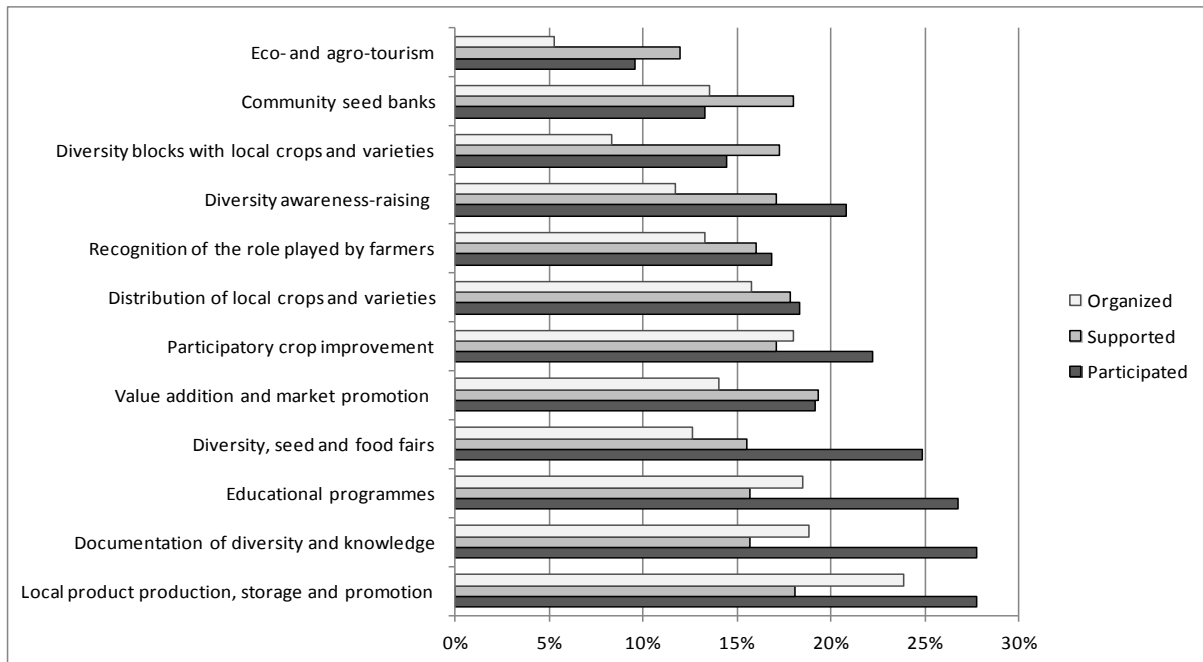
Notes: n=818; respondents matching the profile ‘OFM practitioners’ had an option for each practice between ‘not involved’, ‘participated’, ‘supported’ and ‘organized’. The survey structure made it compulsory for the respondent to make one choice for involvement in each practice.

In Figure 7, we gain a more detailed insight into the involvement of respondents in the various practices. The type of involvement, i.e. participating, supporting or organizing, ranges from 15% to 30% among respondents. Logically, the frequency of participating in, is higher than that of supporting or organizing practices, though the differences are still small.

We will highlight four of the practices as examples. The first example is the practice ‘documentation of diversity and local knowledge’, which is a practice that can easily be associated with research and genetic resource management, but which is also part of community biodiversity management. 28% of the respondents had participated in this practice, while 16% had supported and 18% had organized the practice. Several other practices follow this type of pattern in frequencies. The second example is ‘participatory crop improvement’, which follows a similar pattern, with 23% of respondents participating, 17% supporting and 18% organizing the practice. The patterns for the first two examples are slightly different from the third example ‘community seed banks’, which is a practice that is deeply embedded in community-based organizations. 13% of respondents had

participated in this practice, while 18% had supported and 14% had organized this practice. The involvement of respondents in this practice, which is strongly embedded within community biodiversity management, is less than for the other practices, owing to the long-term engagement required for its implementation; however, the results still show that respondents are involved in the practice, contributing to on-farm management. For the diversity, seed and food fairs, it is obvious that while many respondents participate, fewer are engaged in its support and organization.

Figure 7 Involvement of respondents with the profile OFM practitioners in various practices that contribute to on-farm management of PGRFA



Notes: n=818; respondents matching the profile ‘OFM practitioners’ had to select from the options ‘not involved’, ‘participated’, ‘supported’ and ‘organized’ for each practice. The survey structure made it compulsory for the respondent to make one choice for involvement in each practice.

Respondents of both profiles were requested to indicate the the three practices that they consider critical for contributing to on-farm management. The results are presented in Figure 8. Interestingly, the opinions of the respondents of the two profiles are similar for most of the practices. Educational programmes were identified by almost 30% of the respondents as being critical. The following practices were identified as critical by between 19% and 25% of the respondents:

- Documentation of diversity and local knowledge
- Participatory crop improvement
- Local product production, storage and promotion
- Diversity awareness-raising
- Value addition and market promotion
- Community seed banks

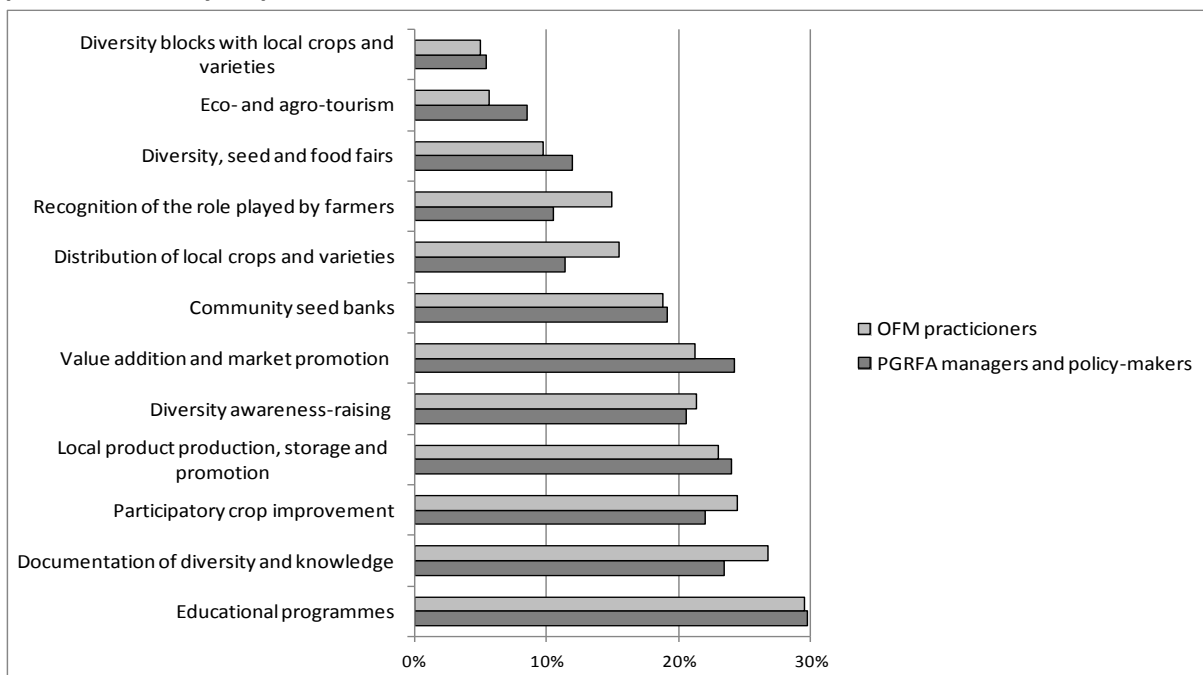
The other practices were identified as critical by less than 15% of the respondents.

Support to on-farm management

In the survey we requested the respondents of the profile ‘PGRFA managers and policy-makers’ to indicate the three main types of support that his or her organization is providing to OFM

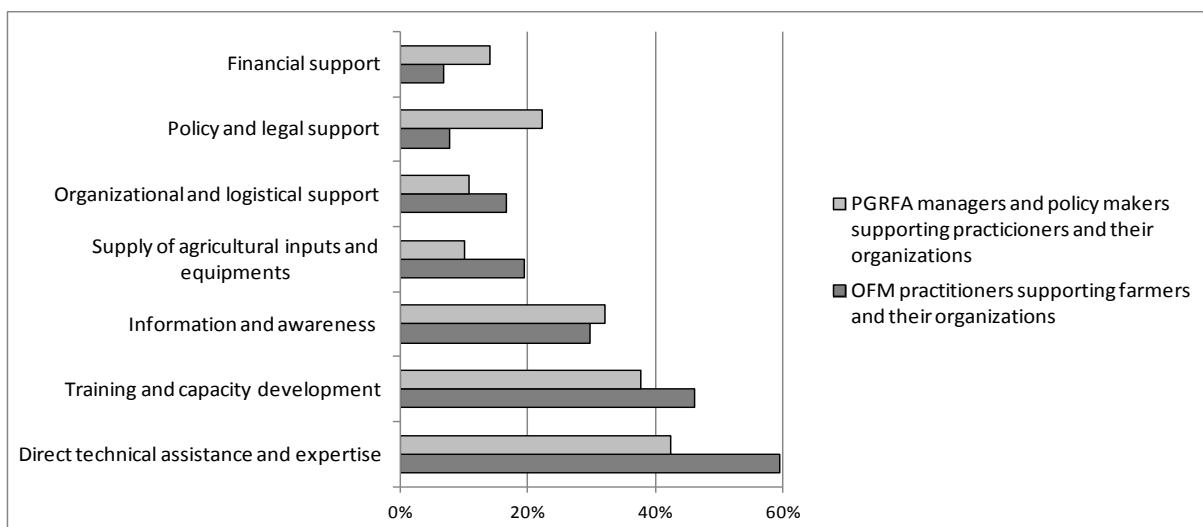
practitioners and their organizations. We asked the ‘OFM practitioners’ a similar question, indicating the three main types of support that his or her organization is providing to farmers and farming organizations in their management of PGRFA. Even though the question to the two categories of respondents was slightly different, we were able to merge the responses in Figure 9, as the types of support the respondents could choose from were the same.

Figure 8 Practices critical for promoting on-farm management of PGRFA, as indicated by the two profiles of survey respondents



Notes: n=590 for OFM practitioners and n= 246 for PGRFA practitioners; respondents had to identify three practices as critical for contributing to on-farm management.

Figure 9 Type(s) of support provided by ‘PGRFA managers and policy-makers’ to ‘OFM practitioners’ and their organizations, and by ‘OFM practitioners’ to farmers and farming communities



Notes: the figure illustrates responses to different questions as highlighted in the title and legend; n=197 for PGRFA managers and policy-makers; n=508 for OFM practitioners.

It is remarkable that respondents of both profiles identified 'direct technical assistance and expertise' as one of the main types of support, although the frequency with which OFM practitioners support farmers and their organizations was much higher (60%) than for the other group (44%). For both profiles, 'training and capacity development' and 'information and awareness' were identified as second and third priorities, in terms of type of providing support to farmers and their organizations, or to OFM practitioners and their organizations. Among those with the profile 'OFM practitioners', more than 20% of respondents indicated 'supply of agricultural inputs and equipment', while 18% indicated 'organizational and logistical support'. The lower percentage of the latter type of support may indicate that many respondents are engaged in providing technical support and training, rather than in contributing to the social organization of farmers and farming communities. Among those with the 'PGRFA management and policy-making' profile, 22% of the respondents logically indicated 'policy and legal support' as one of the main types of support. For respondents of both profiles more than 85% did not include the provision of financial support as one of the main kinds of support provided either to farmers and their organizations, or to practitioners and their organizations.

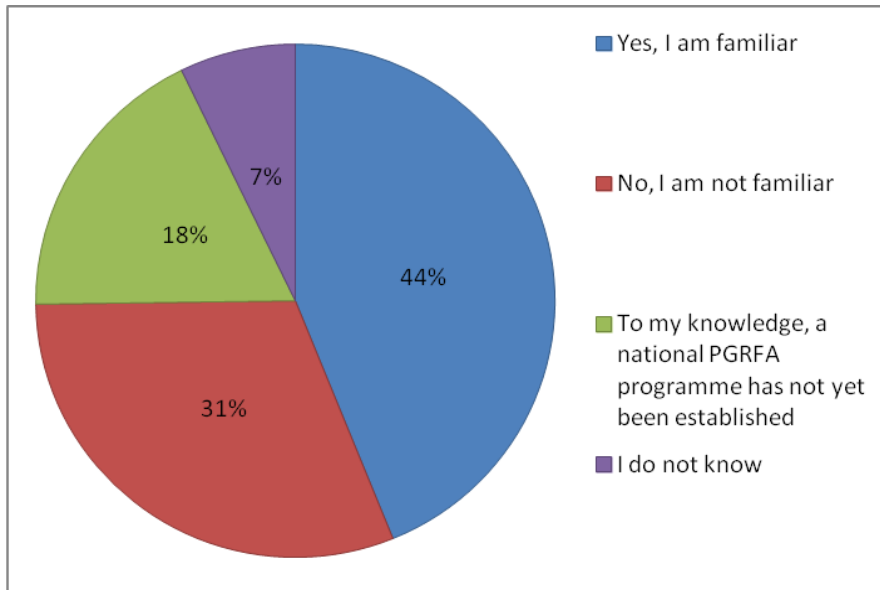
3.3 Relationship between OFM practitioners and PGRFA programmes

A group of questions was included to address the relationship between national PGRFA programmes and practitioners engaged in the implementation of on-farm management of PGRFA. Complementary questions were directed to respondents of both profiles.

Familiarity of OFM practitioners with the national PGRFA programme

We asked respondents with the profile of 'OFM practitioners' if they were familiar with the national PGRFA programme. Figure 10 provides the results to that question. Almost 50% indicated that they were either not familiar with the national PGRFA programme or that it had not yet been established. The response to this question reflects the fact that many of the OFM practices are implemented outside the direct sphere of influence or control of national PGRFA programmes.

Figure 10 Familiarity of ‘OFM practitioners’ with the national PGRFA programme

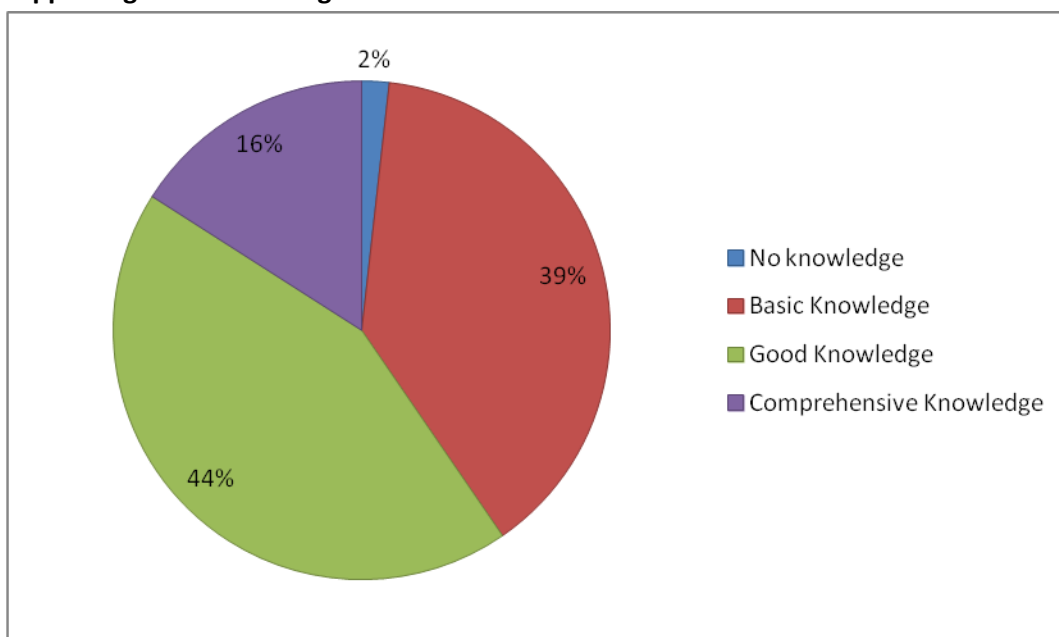


Notes: n=818

Familiarity of PGRFA managers and policy-makers with on-farm management

We asked a similar question to the respondents with the profile ‘PGRFA managers and policy-makers’, reversing the relationship in its formulation. Respondents were requested to indicate the extent of their knowledge of ongoing activities and initiatives that support practitioners of on-farm management. The results are shared in Figure 11. It can be observed that 60% of the respondents of this profile indicated that they have a good or comprehensive knowledge of activities and initiatives supporting on-farm management, while 39% indicated that they have a basic knowledge, and only 2% indicated that they have no knowledge of such activities and initiatives.

Figure 11 Familiarity of PGRFA managers and policy-makers with ongoing activities and initiatives supporting on-farm management



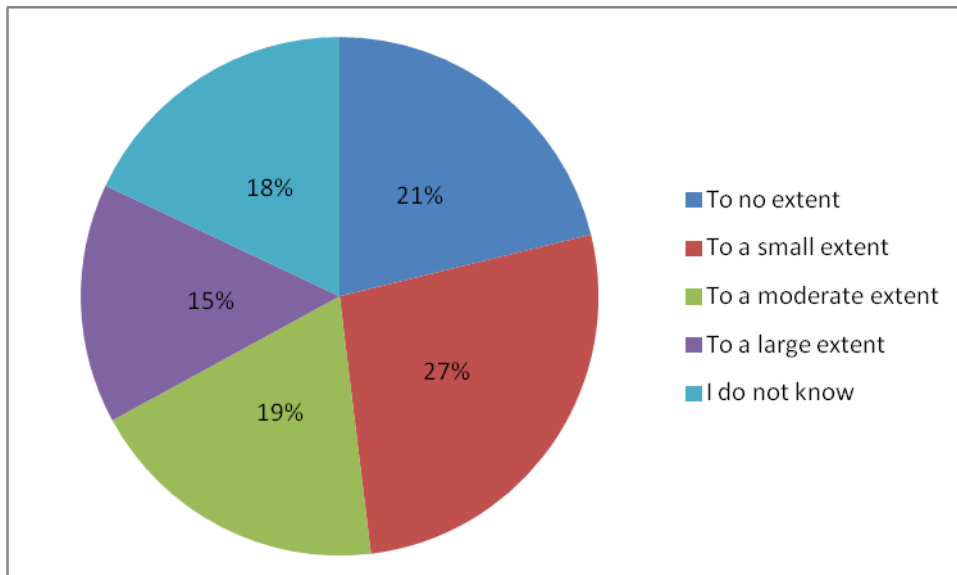
Notes: n=282

Degree to which on-farm management is considered part of national PGRFA programmes

In further trying to unravel the relationship between 'OFM practitioners' and national PGRFA programmes, we requested the respondents with the 'OFM practitioners' profile to indicate to what extent their on-farm management activities are considered part of the national PGRFA programme. The results to this question are presented in Figure 12. A relatively small number of the respondents (15%) indicated that their OFM activities are part of the national PGRFA programme to a large extent; 19% of the respondents indicated that their activities are part of the national PGRFA programme to a moderate extent. Together, the three other responses to the question reveal that a total of 66% of the OFM practitioners indicated that they either do not know whether their OFM activities are part of the national PGRFA programme, or that the activities contribute to the national PGRFA programme to a small extent or to no extent at all .

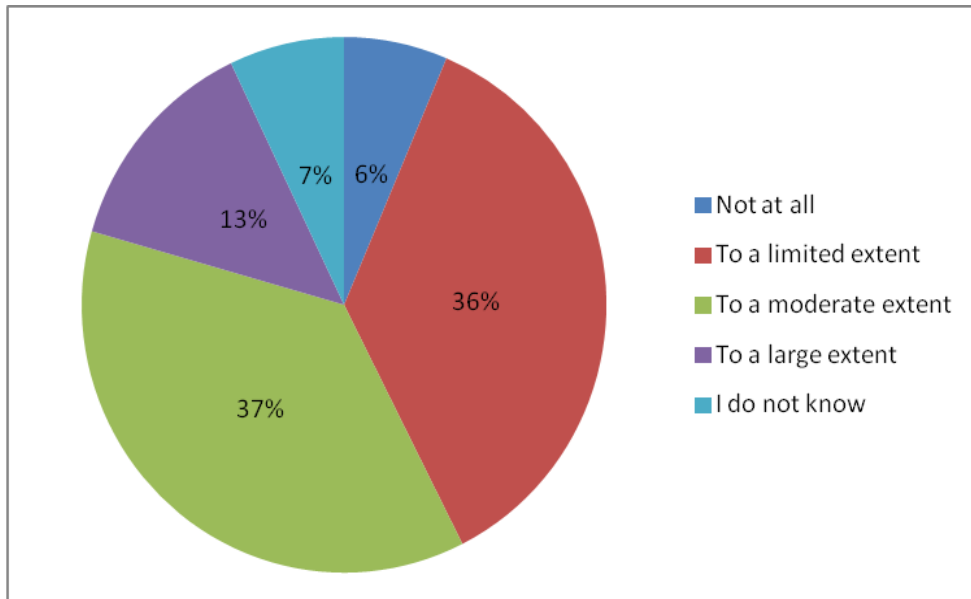
We asked a similar question to the respondents with the profile 'PGRFA managers and policy-makers', who were requested to indicate the extent to which on-farm management activities are part of the national PGRFA programme. Figure 13 shares the results. A relatively small number of the respondents (13%), similarly to the 'OFM practitioners' group, indicated that they consider on-farm management to be part of the national PGRFA programme to a large extent. However, the major part of the 'PGRFA managers and policy-makers' group considered on-farm management activities to be only moderately (37%) or to a limited extent (36%) part of the national PGRFA programme.

Figure 12 The degree to which 'OFM practitioners' consider their activities for contributing to on-farm management as part of national PGRFA programmes



Notes: n= 595

Figure 13 The degree to which ‘OFM practitioners’ consider their activities for contributing to on-farm management as part of national PGRFA programmes



Notes: n=282

Collaboration between ‘PGRFA programme managers and policy-makers’ and ‘OFM practitioners’ and their organizations

We subsequently asked both categories of respondents about the collaboration between PGRFA programmes and ‘OFM practitioners’ and their organizations. We compare the results of the responses from both groups in Figure 14. More than 60% of the respondents with the profile ‘OFM practitioners’ indicated either ‘no’ or ‘little collaboration’, which contrasts with the responses from those with the profile ‘PGRFA managers and policy-makers’, almost 60% of whom indicated ‘frequent’ or ‘moderate collaboration’.

We subsequently organized the data based on the stakeholder group (Figure 15). Respondents associated with governments, NARIs, NGOs and international and regional organizations collaborate with the national PGRFA programmes to a larger degree than universities, CSOs and the private sector.

Figure 14 Degree of collaboration between ‘PGRFA managers and policy-makers’ and ‘OFM practitioners’, with regards to the implementation of on-farm management of PGRFA, as perceived by OFM practitioners and vice versa

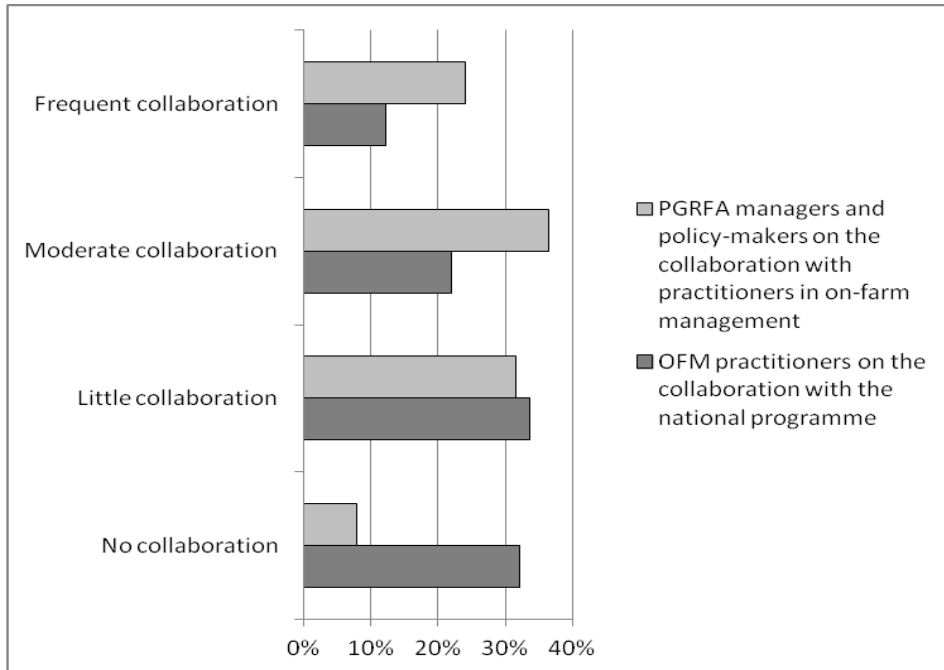
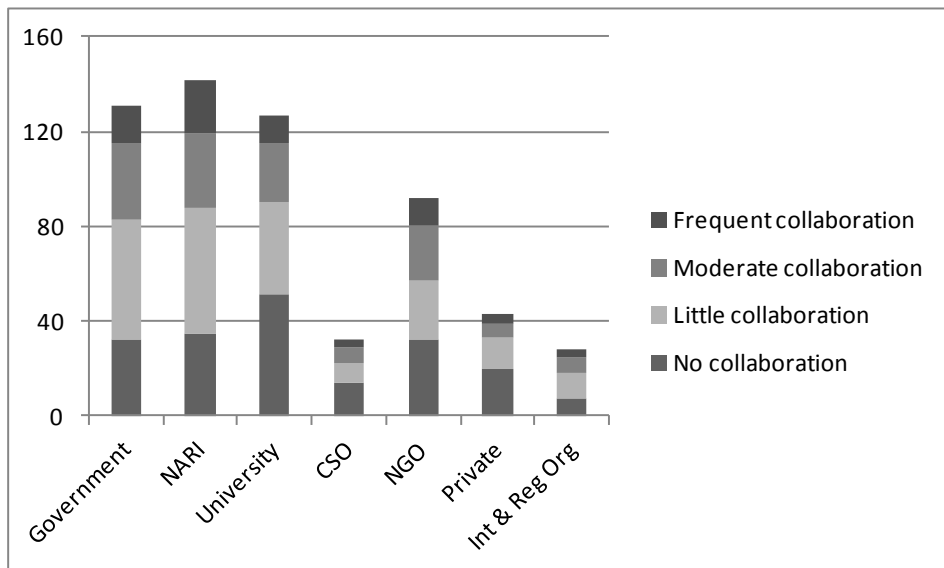


Figure 15 Degree of collaboration with national PGRFA programmes, as indicated by ‘OFM practitioners’; organized according to different stakeholder groups



Notes: n=595

3.4 Networks relevant to on-farm management of PGRFA

Association with networks

To be able to address the issue concerning the establishment of a global network, we needed to better understand the degree to which the respondents are associated with existing networks of relevance. Firstly, we asked all respondents if they are members of any network associated with on-farm management of PGRFA. Figure 16 shares the results. About 40% of the respondents with the profile 'OFM practitioners' and almost 50% of those classified as 'PGRFA managers and policy-makers' are associated with such networks. We then clustered the responses for the seven groups of stakeholders (see Figure 7). More than 55% of the respondents representing NARIs indicated their association with networks relevant to on-farm management of PGRFA, outranking the other stakeholder groups. For those respondents representing universities and CSOs, the frequency was lower than 30%.

Figure 16 Association with networks relevant to on-farm management of PGRFA for the two profiles of survey respondents

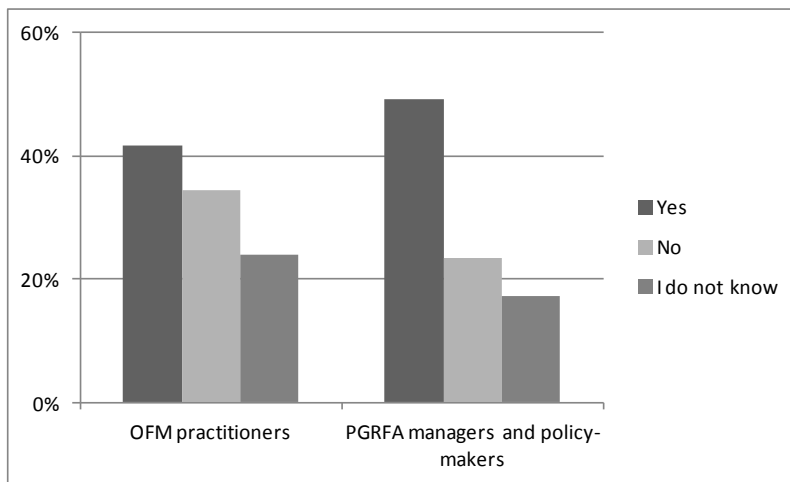
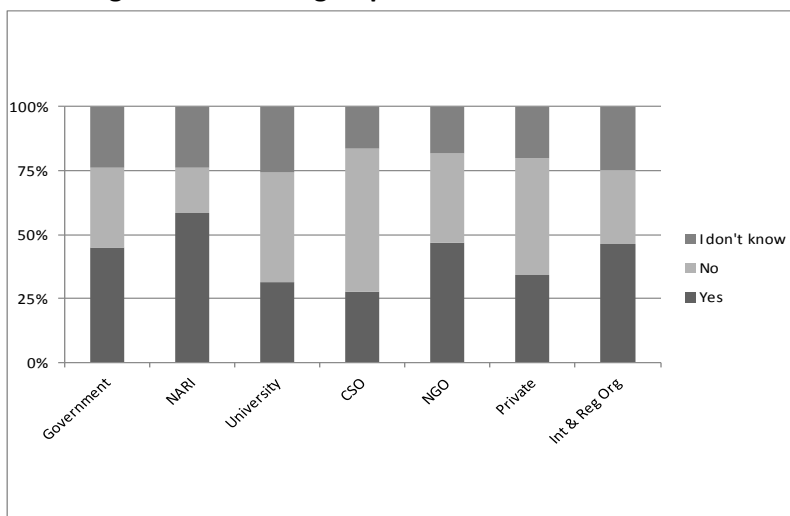


Figure 17 Association with networks relevant to on-farm management of PGRFA; organized according to stakeholder group



Levels of networks

Secondly, we asked all those respondents who are associated with a network to indicate the level at which the network operates, ranging from community up to international level. The range of responses per level of network reached almost 300 respondents for networks operating at national level and a minimum of 280 respondents for those operating at community levels. We further grouped the responses according to the two profiles (Figure 18). Interestingly, a similar pattern can be observed for both profiles at different levels, with on average less than 10% of a difference between them. The frequency of association with networks for both groups at national and regional levels is to be expected. However, more surprising is the fact that a higher frequency of respondents with the profile 'OFM practitioners' was associated with international networks.

Figure 18 Types of networks associated with on-farm management of PGRFA that are considered most important; organized according to the two profiles of survey respondents

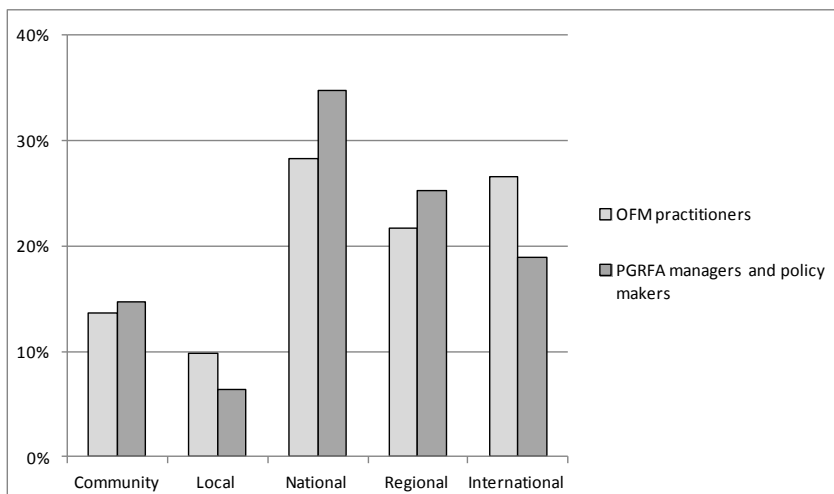
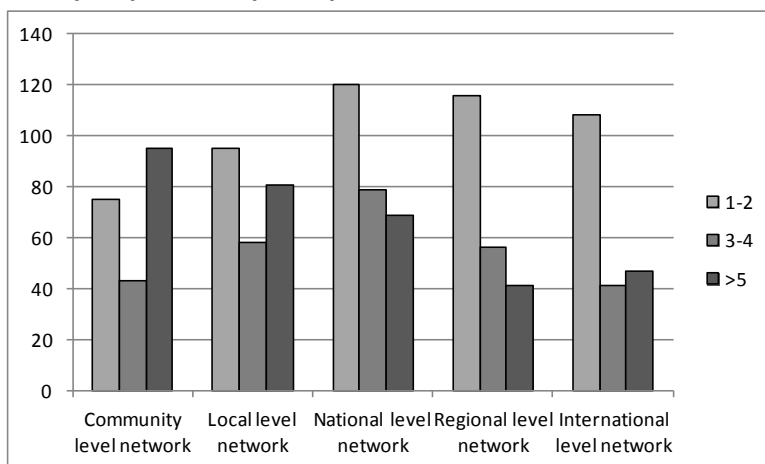


Figure 19 Levels and number of networks associated with on-farm management of PGRFA in which survey respondents participate



We also requested that respondents indicate the number of networks that they are associated with at each level. These responses are presented in Figure 19. Of significance here is the fact that of those respondents who are associated with community or local networks, 80-100 are associated with more than five networks, followed by 40-60 respondents who are associated with 3-4 networks,

and 70-95 respondents who are associated with 1 or 2 networks. For national, regional and international networks, 105-120 respondents indicated that they are primarily associated with 1 or 2 networks, while less than 80 respondents indicated the other clusters.

Type of membership to networks

Thirdly, we requested the respondents to indicate the degree of their involvement in the most relevant network. In Figure 20, the results are organized according to the two profiles of the respondents. Interestingly, 19% of the respondents of the profile ‘PGRFA managers and policy-makers’ indicated that they had been elected to executive positions. We consider this percentage high, as it would mean that one out of five respondents of this profile is leading a network. We can also consider the probability that of the people who were approached to participate in the survey, a high percentage of those engaged in network activity may have responded to the questionnaire. The frequency for the respondents with the ‘OFM practitioners’ profile is 11%, which may be more representative as we had discovered that several of them were associated with more than five community or local level networks. Between 27% and 33% of respondents indicated they were ‘members holding certain responsibilities in the network’, which is relatively high and applies to both groups. About a quarter of the total respondents indicated they were normal members/participants of the networks.

Figure 20 Type of membership in networks associated with on-farm management of PGRFA indicated by respondents; organized according to the two profiles of survey respondents

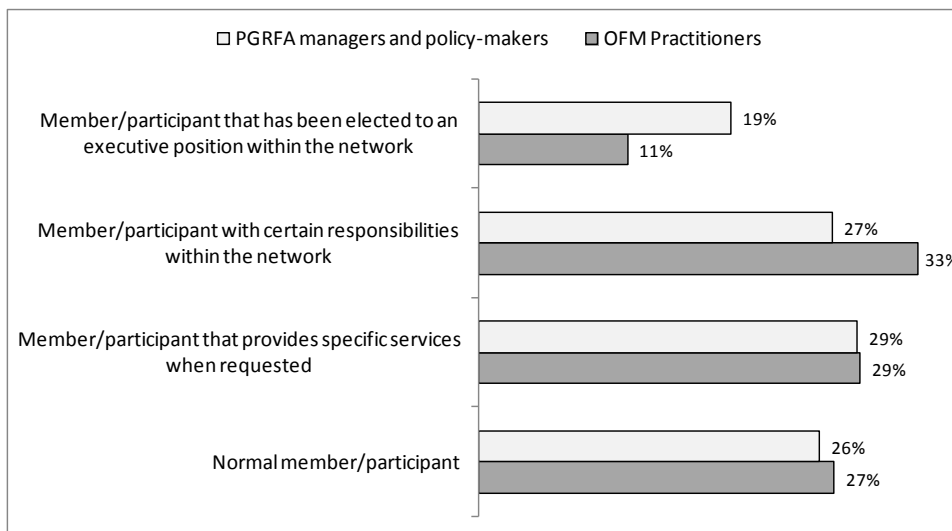
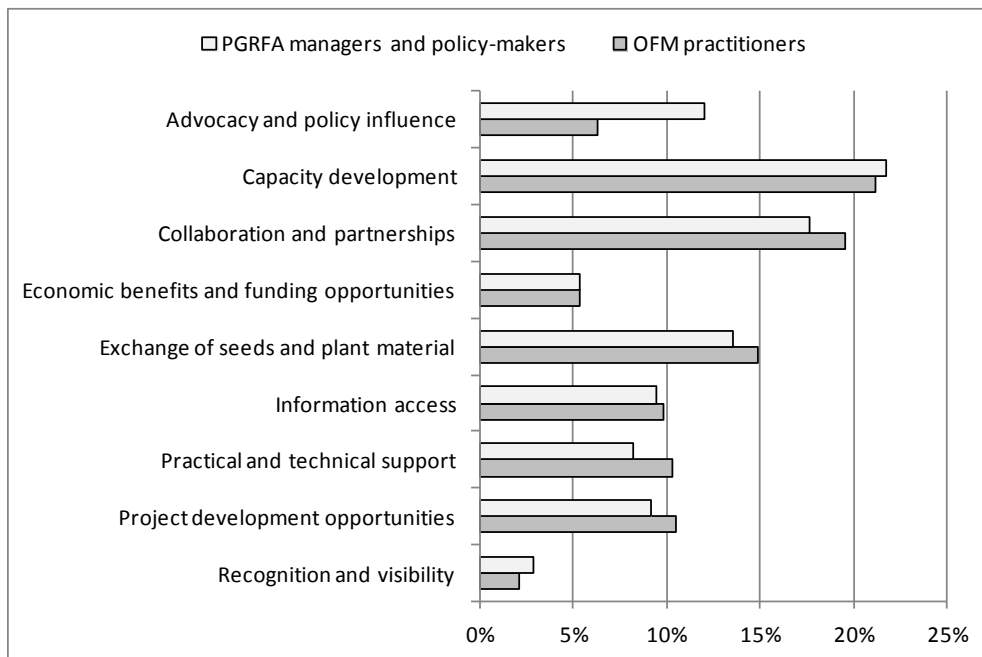


Figure 21 Key benefits from involvement in networks associated with on-farm management of PGRFA; organized according to the two profiles of survey respondents



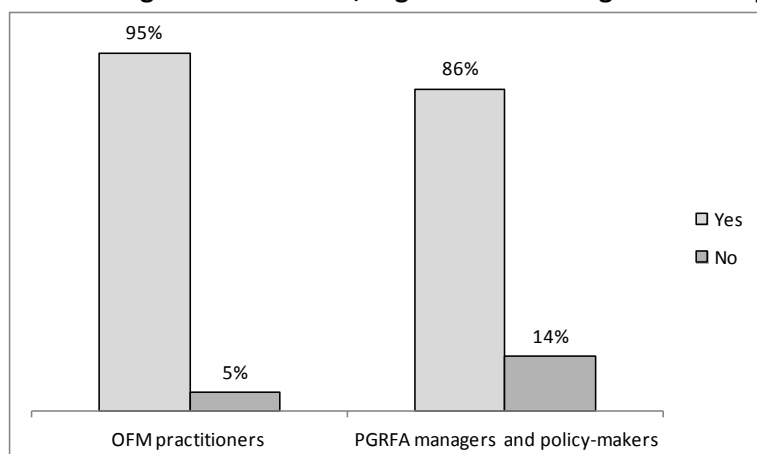
Benefits from involvement in networks

Fourthly, we asked respondents to indicate what they consider to be the benefits of participating in networks (each respondent could choose up to three types of benefits). Figure 21 shares the results to this question. ‘Capacity development’ and ‘Collaboration and partnerships’ scored high in both groups of respondents (15 - 22%); as did ‘exchange of seed and planting materials’, which is considered a key benefit by 13 - 15% of the respondents. A considerable difference in frequency between the two groups was observed with just one type of benefit, ‘advocacy and policy influence’, where 7% of ‘OFM practitioner’ respondents indicated this topic as a benefit, whilst 12% of the other group, ‘PGRFA managers and policy-makers’, indicated this as a key benefit. This outcome is logical considering their positions.

Prioritization of the establishment of a global network

As a fifth issue relating to networks, we requested respondents to indicate if they consider it a priority to establish a global network for *in situ* conservation and on-farm management of PGRFA. A clear majority (>90%) of respondents from both profile groups answered positively (see figure 22), and there was almost complete consensus among ‘OFM practitioners’ and ‘PGRFA managers and policy-makers’ in this regard.

Figure 22 Prioritization of the establishment of a global network for *in situ* conservation and on-farm management of PGRFA; organized according to the two profiles of respondents



Notes: n=540 for OFM practitioners; n=256 for PGRFA managers and policy-makers

Key services to be provided by the global network

As a sixth and final issue relating to networks, we asked the respondents to indicate key services that the global network should provide to national authorities and those responsible for implementing national PGRFA programmes and to farmers and farming communities. The range of responses between the two profile groups differed by less than 5%. However, as with the question on existing networks, a higher frequency of respondents with the profile 'PGRFA managers and policy-makers' prioritized policy, legal and institutional support (24%) when compared with those of the profile 'OFM practitioners' (18%).

The responses to the question as to which services the global network for *in situ* conservation and on-farm management of PGRFA should provide to national authorities and those responsible for implementing national PGRFA programmes, are presented in Figure 23. Based on these responses, more than 20% of the respondents prioritized the following services:

- Financial support and funding opportunities
- Knowledge-sharing and tools for capacity development
- Building of partnerships
- Policy, legal and institutional support

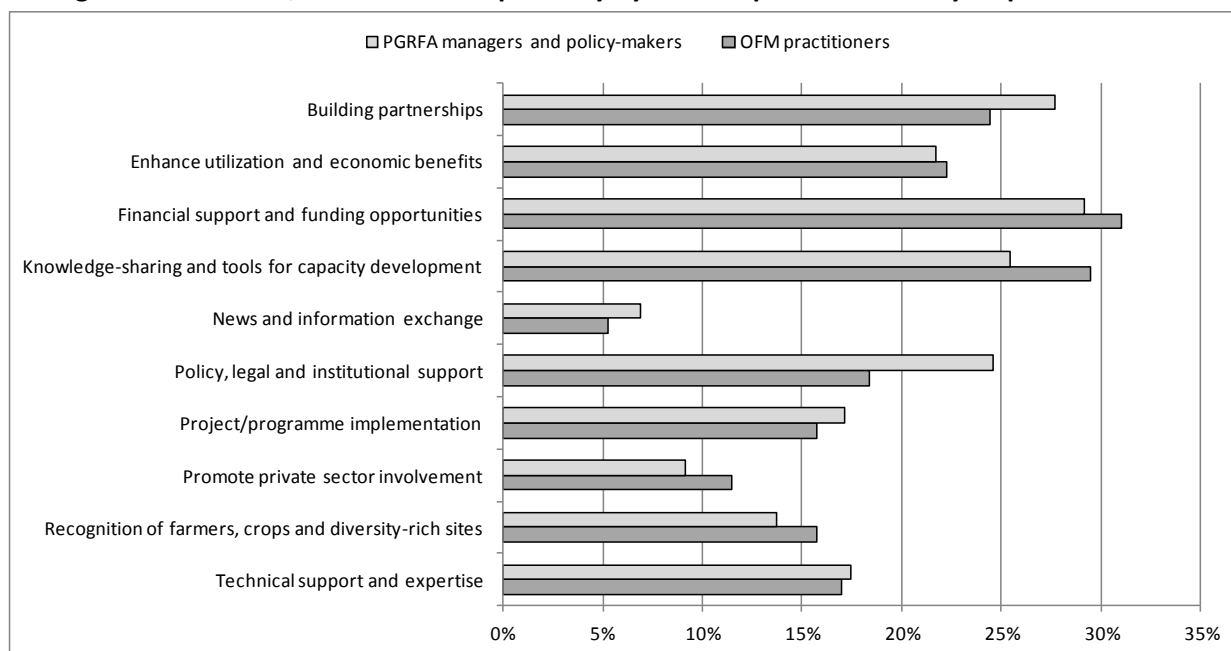
The following services were identified as being of an intermediary priority by more than 10% but less than 20% of respondents: :

- Project/programme implementation
- Technical support and expertise
- Recognition of farmers, crops and diversity-rich sites.

Less attention should be given to the following services that scored less than 10%:

- Private sector development
- News and information exchange

Figure 23 Key services to be provided by the global network to best support national authorities and those responsible for implementing national PGRFA programmes in promoting on-farm management of PGRFA, as identified respectively by the two profiles of survey respondents



Based on the responses to the question, to which respondents were asked to indicate which services the global network should focus on to best support farmers and farming communities in their on-farm management, the respondents of the two profile groups also largely agreed (see Figure 24).

Respondents, in particular ‘PGRFA managers and policy-makers’, identified ‘enhancement of utilization and economic benefits’ as a top priority, which is specifically aimed at supporting farmers and farming communities.

Other services that were prioritized by more than 20% of the respondents slightly differed from those identified for national authorities and national programmes:

- Financial support and funding opportunities
- Knowledge-sharing and tools for capacity development
- Building of partnerships
- Recognition of farmers, crops and diversity-rich sites
- Technical support and expertise

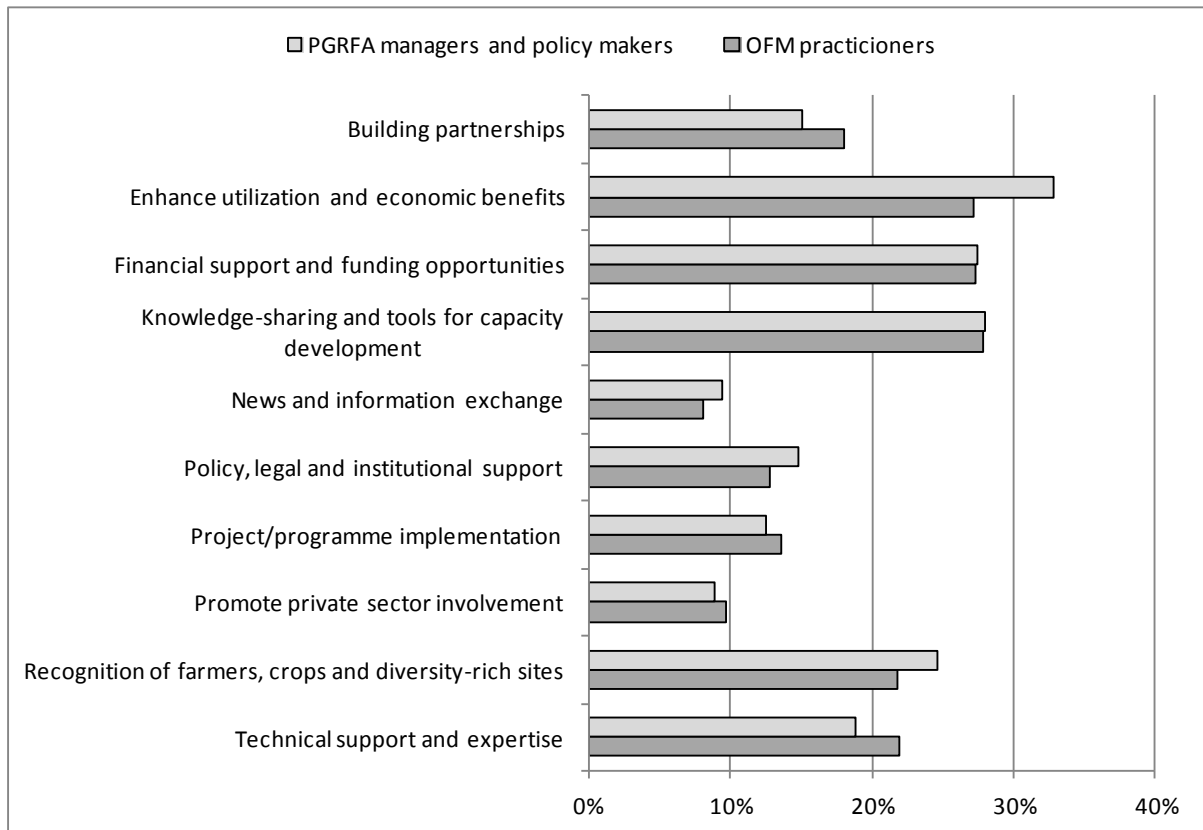
The following services were identified as being of an intermediary priority by more than 10% but less than 20% of respondents:

- Building of partnerships
- Project/programme implementation
- Policy, legal and institutional support

Again, less attention should be given to the following services that were identified by less than 10% of respondents:

- Private sector development
- News and information exchange

Figure 24 Key services to be provided by the global network to best support farmers and farming communities in their on-farm management of PGRFA, as identified by the two profiles of survey respondents



4. Main conclusions

A total of 1168 respondents took part in the survey, with the biggest groups from Africa and the Americas (both around 400); followed by the Near East (about 150); Asia and the Pacific (130); and Europe (60). Respondents covered a wide range of stakeholders, involving governments, national agricultural research institutes (NARI), universities, NGOs, civil society organizations, private sector and international and regional organizations. Representatives from governments, NARIs, universities and NGOs formed the largest groups of respondents.

The survey revealed that 70% (818) of the respondents were classified as 'OFM practitioners', while 350 (30%) were 'PGRFA managers and policy-makers'. With the substantial size of respondents, and distribution across regions and stakeholder groups, the survey provides a large enough sample to identify issues to guide the establishment of a global network for *in situ* and on-farm management of PGRFA.

It can be concluded that the clear majority of respondents, more than 90%, covering both profiles (95% among OFM practitioners and 85% among PGRFA manager and policy-makers), answered positively to the idea of establishing a global network for *in situ* conservation and on-farm management of PGRFA. This outcome can be considered an endorsement to continue the process towards establishing an appropriate network, with clear mechanisms for addressing existing gaps and responding to the needs of stakeholders.

Respondents prioritized specific services to be addressed by the network, targeting authorities and those responsible for implementing national PGRFA programmes in promoting on-farm management of PGRFA, while also supporting farmers and farming communities in their on-farm management of PGRFA. Those services include:

- Enhancement of utilization and economic benefits
- Financial support and funding opportunities
- Knowledge-sharing and tools for capacity development
- Building of partnerships
- Recognition of farmers, crops and diversity-rich sites
- Policy, legal and institutional support
- Technical support and expertise

Other information and insights gathered through the survey address those interventions and practices respondents consider relevant for contributing to on-farm management. Respondents identified educational programmes as a key intervention, and as such this should be given priority attention in designing a network. Other areas of intervention and practices to be addressed are:

- Documentation of diversity and local knowledge
- Participatory crop improvement
- Local product production, storage and promotion
- Raising awareness on diversity
- Value addition and market promotion
- Community seed banks

The structure of the survey and its questions allow us to gain better insights into the relationship between national PGRFA programmes and primary or secondary practitioners of on-farm management of PGRFA. The results of the survey show that almost 50% of the respondents with the profile 'OFM practitioner' indicated that they were either not familiar with the national PGRFA programme, or that the programme had not yet been established in their country. More than 60% indicated that they were not collaborating with the national PGRFA programme, or were collaborating to a limited extent only. Less than 35% of the respondents considered their OFM activities are part of the national PGRFA programme, to a large or moderate extent. This contrasted with the perception of the respondents associated with the profile 'PGRFA managers and policy-makers' who felt that they had a good to comprehensive knowledge of activities and initiatives supporting on-farm management; with more than 60% indicating that the programme frequently or moderately collaborates with practitioners of on-farm management. We conclude that the disparity between the two groups as to how they perceive their relationship and collaboration, could be addressed by a global network, by raising awareness among PGRFA managers and policy-makers in particular on the role that both primary and secondary practitioners play in the implementation of the national strategy. The network could also raise awareness between those two groups of practitioners on their contribution and potential role in linking and collaborating with national PGRFA programmes. A global network could play a facilitating and catalysing role in strengthening this crucial relationship.

Many of the respondents are active in various ways and at different levels within networks that are relevant to on-farm management of PGRFA. The main focus seems to be at national, regional and international level, rather than at community and local levels. As such, this survey revealed a major weakness or challenge. Thus, the need to enhance the capacities of practitioners and PGRFA managers and support networking at community- and local level emerges as highly relevant, and a potential area a global network can support.

The type of benefits that respondents seek in their participation in networks are topics such as capacity development, collaboration and partnerships, and the exchange of seed and planting materials; although 'PGRFA managers and policy-makers' also value advocacy and policy influence. This confirms those services identified by respondents as priorities to be provided by the global network for supporting on-farm management.

Given that on-farm management is based on activities on the ground, a global network should take an inclusive and decentralized approach. In this way, a global network for on-farm management can reach household, community and local levels where on-farm management is realized on a day-to-day basis. Along these lines, the results of this survey, which addresses on-farm management among professionals involved in PGRFA management and policy development, and practitioners who contribute in various ways to on-farm management of PGRFA, provide ample insights into the state of on-farm management and possible areas for strengthening the conservation of local crops and varieties.

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