

Strengthening national capacities to implement the International Treaty on Plant Genetic Resources for Food and Agriculture

Report of the Mid-term Review Workshop, 16-19 July 2013, Rome, Italy

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Bioversity International is a world leading research-for-development non-profit organization, working towards a world in which smallholder farming communities in developing countries are thriving and sustainable. Bioversity's purpose is to investigate the use and conservation of agricultural biodiversity in order to achieve better nutrition, improve smallholders' livelihoods and enhance agricultural sustainability. Bioversity International works with a global range of partners to maximize impact, to develop capacity and to ensure that all stakeholders have an effective voice.

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The Genetic Resources Policy Initiative 2: Strengthening National Capacities to Implement the International Treaty on Plant Genetic Resources for Food and Agriculture aims to: promote the participation of countries in the multilateral system of access and benefit-sharing of the Treaty; identify means to improve countries' access to plant genetic resources for food and agriculture; and pursue options to benefit from other aspects of the Treaty. The project is supported by the Directorate-General for International Cooperation (DGIS) of the Netherlands Ministry of Foreign Affairs. Bioversity International is the main executing agency. The project is under the overall coordination and guidance framework of the Food and Agriculture Organization of the United Nations/Treaty Secretariat/Bioversity International Joint Capacity Building Programme for Developing Countries on the Implementation of the Treaty and its Multilateral System. For more information: <http://grpi2.wordpress.com/>

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Summary

From 16-19 July 2013, a mid-term review workshop took place at Bioversity Headquarters in Rome for the project “Strengthening national capacities to implement the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)” also known as “GRPI 2.” Two external project evaluators, Dr Juliana Santilli from Brazil and Dr Godfrey Mwila from Zambia, and about 30 researchers from eight project countries (Burkina Faso, Côte d’Ivoire, Rwanda, Uganda, Costa Rica, Guatemala, Bhutan and Nepal) and representatives from the University of Illinois at Chicago and Bioversity International came together to share the results of national level GRPI 2 project implementation in the eight countries, assess the progress made to date, identify challenges encountered in project implementation and propose action to address these challenges. The GRPI 2 overall project work plan, in terms of country level activities and cross-country activities, was also updated. The workshop agenda and list of participants can be found in the annex section of this report. Overall, the workshop provided important inputs for the mid-term external evaluation report prepared by the two external evaluators.

Introduction

This international mid-term review workshop took place about 18 months after the GRPI 2 project planning workshop in February 2012² and about 14 months after the research planning and training workshop of July 2012³. At the time of the review workshop, the project country teams had one year of project implementation experience with the exception of the teams from Côte d'Ivoire and Guatemala who had delayed start-ups due to administrative problems. The mid-term review workshops objectives were:

1. To share the results of national level GRPI 2 project implementation and assess the progress made to date;
2. To identify challenges encountered in project implementation and propose actions to address the challenges; and
3. To update the GRPI 2 project level work plan in terms of a) country level activities; and b) cross-country activities (research, training, writing and dissemination).

Through plenary thematic presentations, case study presentations, and plenary and small group discussions, participants presented and reviewed progress made to date (see Annex 1 for the list of participants and Annex 2 for the workshop agenda). All five core themes of the GRPI 2 project were reviewed. These are:

- Theme 1: National-level multilateral system policy development: common core activities and products;
- Theme 2: Developing capacity to effectively implement the ITPGRFA: research on policy network structure, actor characteristics and coalitions;
- Theme 3: Mapping and measuring germplasm interdependence and flows: research on the dynamics of the global crop commons;
- Theme 4: Linking farmers to the ITPGRFA/MLS: potential and challenges of strengthening access to PGRFA through community-based gene/seed banks; and
- Theme 5: Technology transfer.

The two external project evaluators, Dr Juliana Santilli from Brazil and Dr Godfrey Mwila from Zambia, provided feedback on all of the thematic sessions. Moreover the two project evaluators met separately with each of the eight country teams in meetings that took place without the presence of Bioversity staff members. On the afternoon of the closing day, Drs Santilli and Mwila also offered some preliminary comments on the overall achievements made by the project so far. At the present time, the two project evaluators are preparing a separate mid-term evaluation report that will be submitted to the donor agency, the Directorate General for International Cooperation of the Dutch Ministry of Foreign Affairs.

² <http://www.bioversityinternational.org/e-library/publications/detail/strengthening-national-capacities-to-implement-the-international-treaty-on-plant-genetic-resources-f/>

³ <http://www.bioversityinternational.org/e-library/publications/detail/strengthening-national-capacities-to-implement-the-international-treaty-on-plant-genetic-resources-f-1/>

Research Themes: Terms of reference of the mid-term external review (summary)

The mid-term external review aimed to assess the progress made to date in national level project implementation (concerning the themes 1-5) in the eight countries. In particular, the following four key evaluation questions were addressed:

- How far has the implementation of the Treaty, in particular of the MLS, progressed in each country?
- How is the GRPI 2 project contributing to implementation processes in the country?
- What GRPI 2 project activities have already, or seem likely to, yield useful results at national level? At international level? Are there activities that are not working well, and do not seem to be leading in the direction of useful results?
- Should adjustments be made in terms of the activities being supported by the GRPI 2 project to address bottlenecks in MLS implementation at the national level in the countries concerned?

Included within this scope the review should address the following: The effectiveness of the approach promoted and supported by the project, with particular attention to:

- How and by whom the themes 1-5 have been carried out in the GRPI countries?
- If the national teams have the required capacities to carry out the ToRs or are acquiring the required capacities through the project.
- If and how the research themes 2-5 are contributing to the policy development under theme 1? The roles and performance of the Policy Unit in coordinating, overseeing, and supporting the implementation of the project.

Learning: The lessons being learned across the eight countries for each of the five themes that could be used by non-project partners in other countries/regions.

Project outputs:

- The process through which outputs are developed, at country level and for the project as a whole.
- The usefulness of the Policy Unit blog to share and disseminate project news and outputs.
- The number and quality of the outputs produced to date and planned for in the remaining period.
- The timeliness of output delivery to date.
- The uptake of outputs to date and expected uptake in the remaining period.
- Suggestions for increasing the uptake of outputs.

The review would take place between early June 2013 and be completed by no later than September 18, 2013.

Progress review Theme 1: National-level multilateral system policy development: common core activities and products

Progress and challenges were reviewed step by step according to the methodological guidelines developed by the GRPI 2 project management team. This gave the eight countries an opportunity to share and compare experiences and learn from each other's efforts. Details of the progress made by country can be found in Annex 3. It became evident that the implementation processes are far from easy and often constrained by lack of awareness and knowledge about the ITPGRFA and the MLS in particular as well as by political and/or administrative hurdles. Despite these impediments, country teams have made progress to varying degrees.

Ensure that there are no legal impediments to providing PGRFA under the ITPGRFA using the SMTA

One fundamental issue that all teams are addressing is whether there are policies or laws in force in their country that may impede the ability to implement the Treaty. If so, there is a need to identify means by which policies and laws can be amended to create the requisite 'legal space' to provide facilitated access to multilateral system PGRFA using the SMTA. More recent access and benefit-sharing legislation, developed since the ITPGRFA came into force, address this situation by either a) exempting PGRFA in the multilateral system from the applicable legislation (e.g. Bhutan, Uganda); or b) anticipating the passage of specialized regulations, pursuant to the same legislation, to implement the multilateral system (e.g. envisioned in Nepal). The exemption approach is currently more common than the anticipating regulation approach. The *Biodiversity Act of Bhutan*, Water Sheep Year 2003, which establishes access and benefit-sharing rules for genetic resources exempts: "... plant and animal genetic resources access, which will be governed by Special Rules and Regulations or Conditions such as those established by multilateral systems for access and benefit-sharing, especially in the case of plant genetic resources for food and agriculture, in accordance with the international law."

The *Guidelines for Accessing Genetic Resources and Benefit-sharing in Uganda*, 2007, article 3.2 states that: "There are some activities that lead to access of the country's genetic resources which are exempted from the requirement of an Access Permit [as otherwise required by the Guidelines]. These include: [...] Access to plant genetic resources for food and agriculture shall be done in accordance with existing relevant laws and international conventions e.g. the International Treaty on Plant Genetic Resources for Food and Agriculture (Acceded to by Uganda in March 2003)"

Confirm which PGRFA are automatically included in the MLS

GRPI 2 countries have a more or less clear understanding of PGRFA that *are not* 'in the management and control' of the national government and 'in the public domain:' PGRFA on land, or in collections, controlled by provincial or municipal governments, in farmers' fields, in community genebanks, in companies' collections, or subject to plant breeders' rights or patents. Some doubts exist, in Rwanda, for example, about collections held by parastatal corporations or national public

universities. Another example of uncertainty raised in a few countries, Bhutan, for example, concerns recent (or anticipated) deposits in national genebank organizations (usually by national public agricultural research organizations) that have coordinated collecting activities in the country, where there is no formal written record of the conditions under which the materials were collected or deposited. In some such cases, there is uncertainty on the part of the genebank as to the understanding of the farmers from whom the PGRFA were collected, and their legal rights in such cases. To date, a number of contracting parties have gone through exercises to confirm the identity of at least some portion of the PGRFA within their borders that are automatically included in the multilateral system. Rwanda has been the first of the GRPI 2 countries to do so (adapted from <http://www.planttreaty.org/inclusions>). On March 26, 2013, the **Rwanda** Agriculture Board notified the Secretary that the following plant genetic resources for food and agriculture, listed in Annex 1 of the International Treaty, are included in the MLS:

- The collections held by the Rwanda Agriculture Board (RAB) in the various agriculture research centres of the Board throughout Rwanda. (<http://www.rab.gov.rw>)
- The bean, Irish potatoes and rice collections held by the Higher Institute of Agriculture and Animal Husbandry (ISAE) located in Musanze, Rwanda. Information on the composition of the collections can be found at: National Information Sharing Mechanism for plant genetic resources for food and agriculture: (<http://www.pgrfa.org/gpa/rwa/advancedsearch.jsp>)

Confirm who has the authority to consider requests and provide materials

In the eight GRPI 2 countries, ITPGRFA that is automatically included in the multilateral system is spread across a number of national governmental research organizations, genebanks, protected areas, and so on. PGRFA that is voluntarily included in the multilateral system may reside in community genebanks, companies' collections, farmers' fields or hobbists' gardens. In theory, as noted above, all such organizations or individuals could be empowered to consider/approve requests for multilateral system PGRFA, as well as to physically provide the resource. Of the eight countries, none have yet firmly decided which agency or agencies will be in charge of considering/approving and rejecting requests. The delegation of a representative to be the ultimate provider of materials requested through the MLS has also not yet been decided. In **Uganda**, while the policy development process is not yet complete, it is anticipated that one or two institutions will be designated to play the role as 'provider' of MLS materials that are 'under control and management' of the national government, particularly in reference to ex-situ collections. This approach is informed by the fact that most of the collections in Uganda are housed in organizations that operate under the overall umbrella of the Uganda National Agricultural Research Organization, and public universities. Concerning in-situ, on-farm, PGRFA (not automatically included in the multilateral system) the existing Ugandan access and benefit sharing legislation and regulations

gives individuals and communities the space to negotiate matters on their own, with local councils empowered to take the role of 'Lead Agencies'. To address the interface between the national access and benefit sharing law and the MLS, particularly with respect to voluntary inclusions of materials in the multilateral system through deposits to the national genebank, it may be useful to develop model clauses/instruments/ procedures for use by the potentially hundreds of Lead Agencies.

Develop mechanisms to encourage voluntary inclusion of PGRFA by natural and legal persons

To date, there is scarce information in the reports from contracting parties to the ITPGRFA governing body about materials that have been voluntarily included in the multilateral system. Five countries, France, Germany, Netherlands, Peru and, Switzerland as well as the United Kingdom have provided such details. There is also little information documented to date about the measures that member states are taking to encourage such inclusions. GRPI 2 country teams are researching the issue. In **Nepal**, the country GRPI 2 team conducted a survey of organizations holding PGRFA in the country, gathering information that will be relevant to determining if they are automatically included in (or excluded from) the MLS. The team will write a paper setting out its preliminary analysis of this issue to be shared in the latter half of 2013 with the relevant stakeholders in a dedicated meeting. The team also conducted a survey of breeders and community seed banks concerning their perceptions of incentives or disincentives to eventually include materials in the MLS in a voluntary manner. The team will formulate some recommendations based on this survey.

Start using the SMTA for both international and domestic transfers

Given the modest progress made on the steps described above, the eight countries have yet to start making ample use of the SMTA.

Develop approaches for in situ PGRFA in the multilateral system

To date, no country has developed specifically targeted laws or regulations or guidelines for access to *in situ* materials in the multilateral system. GRPI 2 country teams will be researching this issue further.

Consider mechanisms to facilitate use of the multilateral system

National agricultural research organizations and national genebanks in the eight GRPI 2 countries are or will be engaged to work with farmers to identify materials that are adapted to changing climate conditions in their specific farmers' zones. These exercises have involved providing training, technical back-up and service provision, using climate analogue tools, crop modelling, accession level information systems, seeking access to useful material through the multilateral system, and participatory evaluation of the performance of the materials used.

Progress review Theme 2: Developing capacity to effectively implement the ITPGRFA: research on policy network structure, actor characteristics and coalitions

Aseffa Wedajoo and Eric Welch presented the activities undertaken since the inception of the project reiterating the objectives of the policy network research 1) To understand the perspectives, attitudes, and attributes of actors in the policy network and identify implementation constraints; 2) To map the structures and resource flows of policy networks; and 3) To contribute to the capacity building through collaborative research and training. The theme 2 study used a snowball sampling technique to identify respondent policy actors. Then a structured questionnaire was used to collect both network data and traditional survey data. These data provided the necessary inputs to construct policy network maps as well as network measures. Traditional survey questions asked individual respondents about their perspectives and beliefs and recorded professional and demographic characteristics. The study applied network analysis and descriptive statistical methods of data analysis. The network analyses focus on relations and structural patterns that exist among actors. Data collection has been completed for five of the eight countries. Data analysis in these five countries is underway (see table 1).

Table 1: Theme 2 research progress by country

| Country | Number of respondents | Status | | |
|---------------|-----------------------|-----------------|------------------------------------|-------------------------|
| | | Data collection | Data analysis | Research Report writing |
| Rwanda | 37 | Completed | Preliminary data analysis competed | In progress |
| Uganda | 26 | Completed | Preliminary data analysis competed | In progress |
| Costa Rica | 33 | Completed | Data analysis underway | |
| Nepal | 22 | Completed | Data analysis underway | |
| Bhutan | 16 | Completed | Data analysis underway | |
| Guatemala | 5 | In progress | | |
| Cote d'Ivoire | 0 | In progress | | |
| Burkina Faso | 0 | In progress | | |
| Total | 139 | | | |

As part of the policy network research, capacity building workshops have provided practical training for the national research team members and thereby have helped build research capacity in GRPI 2 countries. Each national research team is receiving two rounds of training. The first round of training concerns data collection. It focuses on creating understanding about objectives of International Treaty IT/MLS, the role of SNA for effective implementation of the IT/MLS, and data collection using

Sawtooth Software®. Training workshops led by Aseffa Seyoum have to date been conducted in Burkina Faso (15 researchers), Cote d'Ivoire (15 researchers), Uganda (5 researchers) and Rwanda (14 researchers). The second round of training concerns policy network data analysis using UCINET software. So far training has been offered to selected researchers and academics from NARS and universities in Rwanda (ten participants) and Uganda (fourteen participants). Workshops for Bhutan and Nepal have been scheduled for December 2013. Future activities of Aseffa Wedajoo and Eric Welch will focus on: supporting data collection presently underway in the remaining three countries; providing policy network analysis training in the other six countries; finalizing data analysis for the eight countries; as well as coordinating the contributions to research report writing with the national research teams and developing publications in partnership with the national research teams.

Preliminary results of the policy network analysis for selected countries indicate:

- ITPGRFA policy networks are larger than expected.
- Networks include a wide range of actors – universities, government, business, international, media, etc.
- Networks vary substantially based on the type of resource exchanged. Science networks are very connected, policy advice, legal, financial more limited with only a few key actors.
- A list of potential actors-respondents identified a number of actors who are not involved, but should be.
- A clear indication that respondents did not always agree on who is and is not involved, demonstrating the need for communication and visibility of actors.

The preliminary results were well-received by participants. Flor Ivette Elizondo of Costa Rica lauded the findings of Rwanda and Uganda. She stated that she is looking forward to seeing the policy analysis results of Costa Rica as well. Tashi Yangzome from Bhutan elaborated on how findings from policy network analyses could be helpful in guiding and influencing national policy making for natural resource management in general, beyond the GRPI 2 project. She said that she is looking forward to seeing the Bhutan results and that she would like to present the findings to high level decision makers of the country. Godfrey Mwila pointed out the different levels of awareness of policy actors about the ITPGRFA and the multilateral system differ although the latter is imbedded in the former. Didier Balma from Burkina Faso mentioned that they were not able to proceed with the data collection as planned because it took more time than expected to complete the survey with each respondent. He added that the Burkina Faso research team decided to send the printed version of the survey to selected respondents beforehand to give them time to read and understand the questions. Richard Ogwal from Uganda mentioned that the presented results reflected realities on the ground. He concluded that the training received on data collection and analysis was very useful and can be used for other policy topics. Sirikale Sylvere from Rwanda stated that the training they received would enable them to undertake similar studies in the future. He

added that the results of policy network analysis are definitely useful to improve effectiveness of implementation of the ITPGRFA by targeting appropriate actors and focusing on identified implementation constraints.

Progress review Theme 3: Mapping and measuring germplasm interdependence and flows: research on the dynamics of the global crop commons

Component 1: Overview of Food and Forage Crops and Plant Genetic Resources

All eight countries are currently compiling crop domestication histories of four major crops of importance to national food security. Progress varies by country. In some cases, such as Bhutan, it has not been easy to find reference materials. When documentation is scarce, the compilation is complemented by key informant interviews. As an example of a completed crop history, Flor Ivette Elizondo from Costa Rica made a presentation about common bean in Costa Rica. Although Costa Rica has native common bean varieties, the majority of common bean varieties have “roots” in other countries on the Latin American continent. Crop improvement has also been possible thanks to international exchange and cooperation, in particular in recent decades.

Component 2: Germplasm Flows, Uses and determining factors

A major part of this component will be executed through a national level study momentarily taking place in 19 countries among which are the eight GRPI 2 countries. This study focuses on the ways in which breeders and genebank managers/staff are involved in national agricultural research and development perceive impact of climate change on agriculture in their area. Also looked at are the effects of climate change on their work, resources directed toward climate change and international and national policy responses. The study is led by the University of Illinois at Chicago, under the guidance of Eric Welch. During the workshop, Eric Welch presented an overview of the study. The findings of relevance to the GRPI 2 countries will be made available to the country teams at a later date. In addition to the study, some of the country teams are carrying out interviews and focus group discussions to better understand what is happening at the national level in terms of flows of germplasm.

Research under this theme is designed to address this awareness gap, by providing empirical evidence to highlight the extent to which the concerned countries are dependent on foreign-sourced PGRFA for their agricultural research and development (including breeding) and thus ultimately for their food security. One method that can be used is the pedigree analysis. Madan Bhatta from Nepal presented the detailed results of a pedigree study carried out in Nepal for wheat. Interestingly, the study identifies Mexico, India and Nepal as the most important countries of origin for 35 important wheat cultivars introduced in Nepal. The 35 cultivars have a total of 89 ancestors that originated in 22 different countries. Nepal’s very high dependency is thus evident in this regard.

Component 3: Benefits from International PGR Exchange

Work on this component has progressed slowly so far. In general, country teams, except Nepal and Uganda, are unfamiliar with approaches and methodologies. Basic data is also not always readily available and collection can often be challenging. Nepal and Uganda have carried out some activities that could, at present time, serve as examples for the other countries. However, it seems likely that progress in research on this component will be slow, if carried out at all.

Component 4: Future levels of interdependence as a result of climate change

This component is designed to assess PGRFA needs of countries in the context of climate change by using climate change modeling tools to assess the implications of different climate change scenarios for variety adaptation in different crops and the associated PGRFA requirements to ensure present and future food security. This component, which has a strong capacity development element, interfaces with research carried out under the CCAFS program. In order to fulfill these objectives, the GRPI 2 project first introduced the climate analogues approach (developed as part of the CCAFS program), later followed by other tools. To date, this was done in six of the GRPI 2 countries through in-country workshops with country team members and experts (training is still to be organized for Burkina Faso and Côte d'Ivoire). Asta Tamang from Bhutan presented the experiences of the Bhutanese team in taking part in the first training event organized for the teams of Bhutan and Nepal. She highlighted the relevance and usefulness of the training, but also remarked that for many of the Bhutanese team members, the subject is very new and more time will be required to strengthen their capacities.

Preliminary runs with the climate analogue tool in the six countries allowed the identification of some limitations:

- Technical problems with analogue runs on the online platform and as such limited resolution when doing global runs. Useful analogues are mainly based on regional and national runs.
- Some of the global runs yielded multiple analogue sites in places that were out of range such as Iceland, therefore narrowing them down in terms of geographic location and growing seasons for specific crops still poses a challenge.
- Using a crop based approach and subsequently seasons to run analogues based on temperature and precipitation only posed a problem because no consideration is given to other agronomic variables such as soils, topography, evapo-transpiration, altitude.
- The analogues methodology is based on a single point reference and this poses a challenge in terms of accuracy and resolution.

Based on these challenges and shortcomings, Bioversity staff developed a new training approach based on and informed by GRPI 2 climate change work and the “Seeds for Needs” project that uses a combination of approaches to provide farmers with better access to crop diversity to strengthen their capacity to adapt to climate

change (see Box 1 on next page for more details)⁴. To date, Bioversity staff and partners, CCAFS, and other CGIAR centers have used and experimented with several tools for various purposes, in particular, the identification of climate analogues (climate based analysis) or for crop suitability modeling (crop based approach). Other innovative tools such as crowd sourcing that combine modeling and other participatory methods to help farmers identify suitable germplasm have also been used in the recent past. This new approach takes the form of an integrated development cycle covering six steps and a combination of methods and tools to be used by different stakeholders. GRPI 2 project teams liked the approach and identified training needs according to the “toolbox” steps as summarized in table 2.

Table 2: Training needs GRPI 2 country teams

| | Assessing climate changes | Farmers’ needs and interests | Identifying suitable germplasm | Sourcing new germplasm | Testing new germplasm | Conserving germplasm |
|---------------|---------------------------|------------------------------|--------------------------------|------------------------|-----------------------|----------------------|
| Bhutan | X | X | X | X | | |
| Nepal | X | | | X | | |
| Costa Rica | X | X | X | X | X | X |
| Guatemala | X | X | X | X | X | X |
| Rwanda | X | X | | | X | X |
| Uganda | X | | X | X | | X |
| Burkina Faso | X | X | | X | | X |
| Côte d’Ivoire | X | X | X | X | X | X |

Although some teams have carried out farmers’ needs/interests assessments, few have done so specifically in relation to climate changes. Except Nepal, all other teams expressed interest to learn about methods to research farmers’ understanding of climate change. The Nepali team has some experience. Concerning conserving germplasm, teams are very interested in promoting community seed bank to community seed bank exchanges. Rwanda and Uganda are planning this kind of exchange later this year. Earlier this year, a Bhutanese delegation including researchers, extension agents and farmers visited Nepal to learn about community seed banks there. In relation to assessing climate changes, teams are interested in learning about crop suitability modeling.

⁴ <http://www.bioversityinternational.org/research-portfolio/adaptation-to-climate-change/seeds-for-needs/>

A pre-requisite for effective training activities is the availability of geo-referenced data. Presently, not all countries have this type of data. For the forthcoming training workshops, countries will narrow down the number of crops to work with. It was also agreed that based on their selected crops, countries would prepare a list of accessions they have in their gene banks with passport data which would be used during training and also to see whether collections from within country analogue sites could be tested in reference sites. Future training activities were scheduled as follows: Uganda and Rwanda: September 9-13, 2013; Burkina Faso: October 2013; Côte d'Ivoire: October 2013; Bhutan and Nepal: November 2013; Costa Rica and Guatemala: December 2013.

Box 1: Adaptation to climate change: innovative tools to match seeds to the needs of women farmers in Ethiopia

Maarten van Zonneveld and Carlo Fadda presented the “Seeds for Needs” approach as implemented in Ethiopia. Their presentation informed the session on Component 4 of Theme 3. The core of this approach is to bring back accessions from national genebanks to farmers’ fields. The premises are that, in general, genebank materials are underutilized in genetic improvement and climate change adaptation; genebanks could contain a lot of options to quickly anticipate to changing climates; and many landraces could be a source of novel alleles for crop improvement and food security. The approach uses a “bottom-up” methodology to identify farmers’ needs and interests combined with spatial analysis and modeling to match climate data with plant diversity distribution. Applying this to the Ethiopian context with a focus on durum wheat, research led to the following conclusions:

- Georeferenced accessions provide the possibility to add climate data to the passport data.
- On the basis of this data current and future suitable areas can be predicted.
- For several areas currently suitable for barley and durum wheat cultivation, no climate group seems to be suitable for the 2050 climate conditions.
- For these areas it is recommended to 1) introduce germplasm from other countries; 2) establish participative breeding programs to developed adapted local varieties; and/or 3) introduce alternative crops.

Progress review Theme 4: Linking farmers to the ITPGRFA/MLS: potential and challenges of strengthening access to PGRFA through community-based gene/seed banks.

A “photos only” presentation, given by Ronnie Vernooy summarized the global review of community seed banks carried out by a team of Bioversity staff in which examples from a number of the GRPI 2 countries were highlighted. To date, draft case studies of community seed banks from Costa Rica, Guatemala, Bhutan, Nepal, Rwanda and Uganda are available. Case studies from the other countries are in progress. It is expected that GRPI 2 case studies will not only be useful for the GRPI 2 project, but also be included in a new book about community seed banks around the world to be published by Routledge/Earthcan in 2014. The presentation was structured as follows: evolution, functions, governance and management, technical issues, support and connections, policy and legal environment, achievements and sustainability. Particular attention was paid to assessing achievements of community seed banks. Suggested questions to be asked (indicators) include:

- Has crop diversity increased? Are more varieties of crops available?
- Are seeds available all year round?
- Are seeds available that do well under poor conditions, such as drought or floods?
- Has the food supply increased in households as a result of the community seed bank efforts? Has the quality of food improved?
- Has the income of households increased as a result of the efforts of the community seed bank?
- Has the community seed bank facilitated other development efforts?
- Have the organizational capacities of members been strengthened?
- Have CSBs contributed to changes in seed policies and laws in favor of local seed systems?

Experiences and lessons learned from the global review can be found in two chapters that open a new book about community seed banks in Nepal edited by Pitambar Shrestha, Ronnie Vernooy and Pashupati Chaudhary entitled “Community seed banks in Nepal: past, present, future” (the book was launched at the workshop⁵) prepared by Nepali partners in collaboration with Bioversity International. The chapters are⁶:

- Ronnie Vernooy, *In the hands of many: a review of community seed/gene banks around the world*, pp. 3-15.
- Bhuwon Sthapit, *Emerging theory and practice: community seed banks, seed system resilience and food security*, pp. 16-40.

⁵ <http://grpi2.wordpress.com/2013/07/23/new-book-community-seed-banks-in-nepal/>

⁶ The book is freely available on the following websites:

http://libird.org/downloads/Community%20Seed%20Banks%20in%20Nepal_Past%20Present%20Future_Web13.pdf and <http://www.bioversityinternational.org/e-library/publications/detail/community-seed-banks-in-nepal-past-present-and-future/>

Gloria Otieno complemented the global overview by presenting the experiences of the Kiziba community seed bank in Uganda. This CSB, effective since 2010 and specializes in beans. It now serves more than 200 farmers. This strong group of women and men farmers is dedicated to the conservation, seed production and distribution of bean varieties of local interest. Opportunities exist for the CSB to grow into a more professionalized entity and operate (partially) on a commercial scale. Similar to other CSBs around the world, in order to move to this new stage of collective action, various capacities need to be enhanced, such as seed management (selection, storage, packing, labeling), documentation and administration. Creating a more enabling policy and legal environment is another challenge that the CSB (and others in Uganda) face.

Progress review Theme 5: Technology transfer

Isabel López-Noriega summarized the progress made by the Project countries under the three components of the theme: 1) Organizational case studies; 2) Practical case studies of technology transfer; 3) Technology transfer need studies. The review focused mainly on Bhutan, Burkina Faso, Costa Rica, Nepal, Rwanda and Uganda given, that activities in Côte d'Ivoire and Guatemala did only start recently. Two main approaches have been adopted by national partners to document technology transfer experiences as part of Component 1. Partners in Burkina Faso, Rwanda and Uganda developed a questionnaire for key informants in selected agricultural research organizations with the aim of capturing experiences and impressions, analyzing and documenting technology needs and experiences in technology transfer and identifying lessons learned. Partners in Bhutan, Costa Rica and Nepal consulted relevant literature and carried out informal interviews with experts in the subject matter to select and document two or three case studies of technology transfer. The review observed that some of the countries documented technology transfer experiences as providers of technology, sometimes following the model of technology adoption and impact assessment studies. It would be interesting to share experiences also as users of technology.

Countries made very little progress under Component 2 and also did not enter into practical cases of technology transfer or acquisition. Two key opportunities that could be taken into consideration by partners who wish to make progress are: 1) the next call for proposals to be funded by the Benefit-Sharing Fund of the International Treaty on Plant Genetic Resources for Food and Agriculture. Part of the Fund's financial assistance will be dedicated to projects devoted to the co-development and funding of technologies; and 2) the Platform for the co-development and transfer of technologies under the multilateral system of the Treaty, which has among its tasks to support for South-South cooperation for the co-development and transfer of technologies relevant to the conservation and sustainable use of plant genetic resources.

It is expected that the survey of genebank managers and breeders carried out as part of theme 3 (under the umbrella of the CCAFS program) in 19 countries (including

the GRPI 2 countries) will generate information for partners to conduct an assessment of technology needs under Component 3 of Theme 5. In addition, partners in Burkina Faso, Rwanda and Uganda have included detailed questions about this topic in their surveys.

Following the overall review of the theme, partners from Nepal, Uganda and Costa Rica made presentations on the work they have done so far to gather and analyze technology transfer experiences in their countries and on some preliminary analysis of the information already collected. Pashupati Chaudhary presented the work done in Nepal. The Nepal team developed a conceptual framework for the study of technology transfer and the promotion of technological cooperation and technology transfer in line with the Treaty's multilateral system. This led to agreed definitions of technology and technology transfer, a classification of technologies between two types: germplasm based and non-germplasm based, and a characterization of different pathways of technology transfer. Partners in Nepal studied the main elements involved in the transfer of three particular technologies that either have been transferred to Nepal from other countries or could be transferred to Nepal given its potential for plant genetic resources' conservation and use: Molecular markers, Kufri Jivoti and Janak Dev potato varieties and *in vitro* propagation technologies to be applied to potato varieties. Some of the initial conclusions arising from the work are:

- Transfer of germplasm based technologies are accelerated and facilitated by associated non-germplasm based technologies; successful technology transfer requires the adoption of a combination of germplasm and non-germplasm based technologies.
- Trained human resources, financial resources and modern laboratory facilities are needed to apply non-germplasm based technologies (like *in vitro* propagation and molecular markers) in developing countries.
- South-South technology transfer may be more suitable for developing countries due to low cost of transfer and fast diffusion as well as adaptation of technologies.

Richard Ogwal, on behalf of partners in Uganda, explained that the team developed a questionnaire to interview selected informants in different agricultural research organizations in the country starting with some departments of the National Agricultural Research Organization that generate and use technologies for the conservation, characterization, evaluation, breeding and cultivation of plant germplasm. This survey served as a model for a similar activity carried out by other GRPI countries. Through the survey, relevant technologies and technology needs were identified as well as the factors that facilitate or hinder technology transfer. In addition, one case study has been looked at in detail: the introduction of genes isolated by Academia Sinica that provide resistance to banana bacterial wilt, by the Biotechnology Center of NARO. Some of the conclusions arising from some preliminary analysis of the interviews are:

- There is a need to strengthen collaboration and participation among actors, i.e. farmers should not only be contacted at the variety evaluation and adoption stages.
- Tech transfer agreements should be honored by both the recipient and the provider.
- Capacity building is key during technology transfer process.
- Impact assessments should be conducted to improve the understanding of the best practices in technology transfer and the actual success of technology transfer.

William Solano, from Costa Rica, presented one of the case studies selected by the team for documenting technology transfer experiences, that of the Central American Cacao Project. He shared a video of the project:

http://www.youtube.com/watch?feature=player_detailpage&v=3QRPHCcHW8s

Outputs

In plenary, participants reviewed the original outputs plan and made a number of adjustments taking into consideration progress made to date and expected availability of time and other resources. The plan is presented in table 3.

Table 3: Proposed outputs for Themes 1-5

| Theme | National level | Cross-country level |
|----------------------------|---|---|
| MLS implementation | -A nationally publishable report (based on a common contents for all countries) -National policy brief(s) | -International policy brief(s) -Guidelines for implementing the MLS (and the CBD/Nagoya Protocol) -Thematic research papers (e.g. on voluntary inclusions) -Book |
| Policy actors and networks | -Short report* -Nationally published article(s) | -Collaborative article(s) based on several or all 8 country studies. |
| Flows and interdependence | -National report combining components 1, 2, 4 and (optional) 3 -Technical brief(s) -Nationally published article(s) -Above outputs will be used for the climate change adaptation training toolbox and publication of related sourcebook | -Brief(s) -Collaborative article(s) -Book |
| Community seed banks | -Case studies | -Case studies to be included in the CSB book for Earthscan -Policy brief(s) (e.g., on CSBs and the MLS, on CSBs and Farmers' Rights, on CSBs and seed laws) -Article on FRs based on experiences from the country teams |
| Technology transfer | -Case studies - Proposals to be submitted by country teams to the next call for proposals of the Treaty's Benefit-Sharing Fund | -Policy brief (recommendations) for Governing Body of the ITPGRFA |
| All 5 themes | Power-point presentation | -Blogs, photo shows, videos |

It is to note that the total number of envisioned outputs remains high. It is most likely not feasible to realize all of them. Each country team will review the list and set priorities at national level. The Policy Unit team will review the proposed outputs across the five themes and identify priorities. Based on both sets of priorities as well as taking into consideration the recommendations to be received from the two external reviewers, an agreed upon list will be produced by September 30, 2013. Participants requested to organize one or more write-shops to assist with the production of outputs.

Feedback from the external reviewers

Juliana Santilli and Godfery Mwila offered some preliminary feedback to all workshop participants based on their evaluation work carried out so far. They observed that despite a number of bottlenecks, it is clear that the GRPI 2 project is supporting the Treaty/MLS implementation in the eight project countries, in different ways and to varying degrees. They remarked that GRPI 2 represents a coherent set of research questions and outputs and that the approach and methodology used are appropriate. They expressed some concerns about the scope of the project (the five themes) in terms of an over ambitious agenda considering the relatively short duration and the limited (human and financial) resources available for implementation. They concluded by suggesting that it would be wise for the eight national teams and Bioversity International to consider narrowing down some of the research activities (in particular those for themes 3 and 5) based on a more realistic assessment of the capacities of each country team. This preliminary feedback was well-received by workshop participants.

Annex 1: List of participants

| Name | Country | Full affiliation | Email | Tel/Fax/Cell | Skypename |
|-----------------------------------|--------------|---|--|--|----------------|
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Annex 2: Workshop program

Programme for the GRPI 2 Mid-term Review Workshop: July 16-19, 2013 Bioversity International, Maccarese, Rome, Italy

Workshop objectives:

- 1) To share the results of national level GRPI 2 project implementation and assess the progress made to date;
- 2) To identify challenges encountered in project implementation and propose actions to address the challenges; and
- 3) To update the GRPI 2 project level work plan in terms of a) country level activities and b) cross-country activities (research, training, writing and dissemination).

| TUESDAY JULY 16 | | | |
|--|---|--|--------------------|
| Session | Expected outcome | Presenter(s) | Facilitator |
| Welcome: 9:00am-9:10am | | Michael Halewood | |
| Introduction of participants: 9:10-9:30am | <ul style="list-style-type: none"> • Getting to know each other | | Ronnie Vernooy |
| Workshop program: 9:30-9:45am | <ul style="list-style-type: none"> • Understanding the program | | Ronnie |
| Introduction to the external mid-term review: 9:45-10:00am | <ul style="list-style-type: none"> • Understanding the purpose and methodology of the external review | Godfrey Mwila & Juliana Santilli | Ronnie |
| Theme 3/Crop histories: 10:00am-10:30 | <ul style="list-style-type: none"> • Brief overview of the crop histories: COSTA RICA case study • Agreement on how to disseminate the studies | Costa Rica team Plenary | Michael |
| COFFEE and TEA | 10:30-11:00am | | |
| Theme 3/Flows and uses: 11:00-12:30pm | <ul style="list-style-type: none"> • National level studies (GRPI 2/CCAFS research) • Country feedback • Pedigree studies: NEPAL case study • Agreement on future steps | Eric Welch Plenary Nepal team Plenary | Michael |
| LUNCH | 12:30-13:30pm | | |
| Theme 3/Benefits from exchange: 13:30-14:00pm | <ul style="list-style-type: none"> • An update on research approach and studies planned • Agreement on future steps | Michael Plenary | Michael |
| Theme 3/Future interdependence (SESSION ONE): 14:00-14:30pm | <ul style="list-style-type: none"> • Field examples of the use of climate analogues and other tools: Ethiopia | Carlo Fadda & Maarten van Zonneveld | Michael |
| TEA | 14:30-15:00pm | | |

| TUESDAY JULY 16 | | | |
|---|---|-------------------|-------------|
| Session | Expected outcome | Presenter(s) | Facilitator |
| Theme 3/Future interdependence (SESSION TWO): 15:00-16:00pm | <ul style="list-style-type: none"> Field examples of the use of climate analogues and other tools: India Questions and Answers concerning the field studies | Ronnie Plenary | Michael |
| Theme 3: Germplasm flows and interdependence: 16.00pm-16.30pm (repeated on Wednesday) | <ul style="list-style-type: none"> Video showing "A new way of experimenting with new seeds" by Jacob van Etten | | Maarten |

| WEDNESDAY JULY 17 | | | |
|--|--|---|-------------------------|
| Session | Expected outcome | Presenter(s) | Facilitator |
| Theme 3/Future interdependence (SESSION THREE): 9:00-10:30am | <ul style="list-style-type: none"> Overview of training experiences to date The training experience of BHUTAN Introduction of the training tool box Questions and Answers concerning the use of the tool box | Gloria Otieno Asta Tamang Gloria Plenary | Michael |
| COFFEE and TEA | 10:30-11:00am | | |
| Theme 4: Community seed banks 11:00-12:30pm | <ul style="list-style-type: none"> Overview of case studies underway Case example: UGANDA Identification of key issues for follow up across the 8 countries | Ronnie Gloria Plenary | Isabel López-Noriega |
| LUNCH | 12:30-13:30pm | | |
| Theme 3/Future interdependence (SESSION 4): 13:30-14:30pm | <ul style="list-style-type: none"> Agreement on next steps: training and field research | Two working groups | Michael and Gloria |
| TEA | 14:30-15:00pm | | |
| Theme 5: Technology transfer (SESSION ONE): 15:00-16:00pm | <ul style="list-style-type: none"> Overview of progress made Case study presentations: NEPA, COSTA RICA and UGANDA (video from COSTA RICA) | Isabel L-N Nepal, Costa Rica and Uganda teams | Gea Galluzzi |
| Theme 3: Germplasm flows and interdependence: 16.00pm-16.30pm | Video showing " A new way of experimenting with new seeds" by Jacob van Etten | | Maarten |

| THURSDAY JULY 18 | | | |
|--|---|--|-------------|
| Session | Expected outcome | Presenter(s) | Facilitator |
| Theme 2: Policy actors and networks 9:00-10:30am | <ul style="list-style-type: none"> • Overview of progress made (surveys) • First findings from RWANDA and UGANDA • Plan for analysis of findings in other 3 regions • Identification of key issues for follow up across the 8 countries | Aseffa Wedajoo Uganda & Rwanda teams Plenary Plenary | Ronnie |
| COFFEE and TEA | 10:30-11:00am | | |
| Theme 1: MLS implementation (SESSION ONE): 11:00-12:30pm | <ul style="list-style-type: none"> • Overview of progress and key challenges • Country progress: <ul style="list-style-type: none"> ✓ Analyze whether there is legal space for the implementation of the MLS. ✓ Identify/confirm what PGRFA in [country] are 'under the management and control of the Contracting Party and in the public domain'. | Michael Bhutan Nepal Costa Rica Guatemala Burkina Faso Côte d'Ivoire Rwanda Uganda | Isabel L-N |
| LUNCH | 12:30-13:30pm | | |
| Theme 1: MLS implementation (SESSION TWO): 13:30-14:30pm | <ul style="list-style-type: none"> • Country progress: <ul style="list-style-type: none"> ✓ Develop mechanisms to encourage voluntary inclusion of PGRFA by natural and legal persons ✓ Sharing non-confidential information about PGRFA in the MLS | All eight countries | Isabel L-N |
| TEA | 14:30-15:00pm | | |
| Theme 1: MLS implementation (SESSION THREE): 15:00-16:00pm | <ul style="list-style-type: none"> • Country progress: <ul style="list-style-type: none"> ✓ Clarify who in the country has authority to consider requests for access to materials in the multilateral system. ✓ Using the SMTA for international and domestic transfers ✓ Identify possible options concerning <i>in situ</i> materials. | Ditto | Isabel L-N |

| FRIDAY JULY 19 | | | |
|---|--|---|---------------------|
| Session | Expected outcome | Presenter(s) | Facilitator |
| Theme 1: MLS implementation (SESSION FOUR): 9:00-10:30am | <ul style="list-style-type: none"> Harmonization between the ITPGRFA and the CBD/Nagoya Protocol: overview <ul style="list-style-type: none"> The case of Brazil Questions and Answers about harmonization in all GRPI 2 countries | Michael Juliana Plenary | Isabel L-N |
| COFFEE and TEA | 10:30-11:00am | | |
| Theme 5: Technology transfer (SESSION TWO): 11:00-12:30am | <ul style="list-style-type: none"> Identification of key issues for follow up across the 8 countries | Isabel L-N | Gea |
| LUNCH | 12:30-13:30pm | | |
| Outputs (writing and dissemination): 13:30-14:00 | <ul style="list-style-type: none"> Agreed upon plan for country level outputs and project level outputs | Plenary | Ronnie |
| Project coordination and support: 14:00-14:30pm | <ul style="list-style-type: none"> Suggestions for improvement | Plenary | Juliana and Godfrey |
| TEA | 14:30-15:00pm | | |
| Wrap up: 15:00-16:00pm | <ul style="list-style-type: none"> Next steps of the external review Next steps GRPI 2project Workshop evaluation | Juliana & Godfrey Michael Plenary | Ronnie |

Country team meetings with Juliana Santilli and Godfrey Mwila

Venue: Board-room, 4th floor

| | 16:00-16:45pm | 16:45-17:30pm |
|-------------------|---------------|---------------|
| Tuesday July 16 | Bhutan | Nepal |
| Wednesday July 17 | Costa Rica | Guatemala |
| Thursday July 18 | Burkina Faso | Côte d'Ivoire |
| Friday July 19 | Rwanda | Uganda |

Social activities:

Wednesday July 17: Evening tour of Rome (optional)

Thursday July 18: Dinner at the beach in Maccarese

Workshop coordination:

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Ronnie Vernoooy, r.vernooy@cgiar.org

Annex 3: Theme 1 progress reporting by country

Bhutan

| | |
|------------------------------------|---|
| Legal space | There is legal space created through the Biodiversity Act of 2003, the draft ABS Policy (May 2012) and an Executive Order (MoAF 1/6/NDA/2013/4308 of February 7, 2013). |
| Materials automatically in the MLS | Seven steps are required before materials can be approved for inclusion. (See chart) |
| Competent authority | The MoAF. NBC is the authorized agency. |
| Voluntary inclusion | Not yet. |
| Use of the SMTA | Not yet. The NBC is working on some access requests. |
| In situ materials | Not yet. |
| Harmonization with the CBD | In process. |

Nepal

| | |
|------------------------------------|---|
| Legal space | <p>The 2006 Interim Constitution included a strong commitment to execute international treaties.</p> <p>The 1990 Nepal Treaty Act provided a framework for national implementation and regards international treaties as superior to domestic legislation.</p> <p>The Nepal Biodiversity Strategy is currently being revised and aims to harmonize implementation of the CBD and the ITPGRFA.</p> <p>The 2007 Agro-biodiversity Policy is currently being revised and envisions a special law concerning the implementation of the ITPGRFA/MLS.</p> <p>The MoAD is committed to implement the ITPGRFA based on the above policy and legal revisions.</p> <p>The SMTA is being used notwithstanding the absence of formal regulations.</p> |
| Materials automatically in the MLS | <p>No formal decision has been made yet.</p> <p>There are 11702 Nepalese PGRFA in the CGIAR (based on Genesys).</p> <p>The national genebank holds more than 9000 accessions.</p> <p>Nepal has released about 240 improved crop varieties based on PGR obtained through the MLS.</p> <p>A list of Nepali Annex 1 materials is being prepared for review by the ITPGRFA and CBD Focal Points.</p> <p>An inventory of CRW to be included is being prepared.</p> |
| Competent authority | No government decision has been made yet. Proposed in a single competent authority (the national genebank). |
| Voluntary inclusion | Under discussion with some community seed banks. |
| Use of the SMTA | Yes. National Genebank data 2010-2012: 1727 SMTA signed. |
| In situ materials | Not yet. |
| Harmonization with the CBD | In process. |

Costa Rica

| | |
|------------------------------------|---|
| Legal space | There is legal space. There is no need to amend the Biodiversity Law which allows for effective implementation of the ITPGRFA. However, the intent is to amend the ABS Regulation to create more clarity. |
| Materials automatically in the MLS | The collections of CATIE and INTA (non-IPR materials). Not included are collections of public universities, public entities of non-state character. These agencies can notify the ITPGRFA Secretariat by means of an administrative resolution. |
| Competent authority | In August 2013 there will be a meeting to prepare a proposal. Participants include the genebank managers of CATIE and INTA. |
| Voluntary inclusion | The University of Costa Rica has included some of its collections through direct notification to the ITPGRFA Secretariat. Some issues may arise for the national authority according to the existing law. |
| Use of the SMTA | Not yet. |
| In situ materials | Not yet. |
| Harmonization with the CBD | In progress. |

Guatemala

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| Legal space | There is no ABS law. There are Executive Orders concerning collecting PGRFA in situ (#177-95 and # 338-2010). |
| Materials automatically in the MLS | The collections of maize and beans of the MoA/ICTA. The status of the collections of public universities needs to be analyzed. Also to be analyzed is how other entities could put materials in the MLS. |
| Competent authority | The PGRFA of the MoA. There is a need to sign an agreement with ICTA about administrative procedures. |
| Voluntary inclusion | Not yet. |
| Use of the SMTA | Not yet. |
| In situ materials | Not yet. |
| Harmonization with the CBD | Not yet. |

Burkina Faso

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| Legal space | SP/CONAGREP has been authorized as the inter-ministerial agency responsible for implementation of the ITPGRFA. This is in harmony with the 1977 Seed Law revised in 2006 (No. 77-382/PRESS/DR) and the 2006 Biosafety Law. CONEDD is responsible for the CBD and the Nagoya Protocol. |
| Materials automatically in the MLS | At this point in time, the genebank managers are preparing a list of materials for review and approval by CONAGREP. Once approved, CONAGRAP will notify the ITPGRFA Secretary. |
| Competent authority | CONAGREP. There are a number of technical committees that provide advice to CONAGREP on requests for materials. |
| Voluntary inclusion | The committee for the amendment of the regulations will provide a definition of "provider." Then the committee will also identify the materials that are automatically in the MLS. |
| Use of the SMTA | Not yet. |
| In situ materials | Not yet. |
| Harmonization with the CBD | Yes. CONAGREP is in charge of the ITPGRFA. CONEDD of the CBD. |

Côte d'Ivoire

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| Legal space | An analysis is underway to identify how to create the required legal space including for the implementation of the Nagoya Protocol. |
| Materials automatically in the MLS | A national discussion has been started to identify which materials to include. |
| Competent authority | There is no competent authority yet. The GRPI 2 project is preparing a proposal. Right now, the National Centre for Agronomic Research (CNRA) is playing the informal role of competent authority. |
| Voluntary inclusion | Not yet due to the absence of a national mechanism to decide about this. |
| Use of the SMTA | Not yet. |
| In situ materials | Not yet. |
| Harmonization with the CBD | Not yet. |

Rwanda

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| Legal space | There are no impediments. Seed legislation exists and a draft ABS Law has been prepared. There is a National Strategy for implementation of the ITPGRFA. There is a National Genebank Strategic Plan. |
| Materials automatically in the MLS | A list is available from the MoA. The ITPGRFA Secretary has been notified in early 2013. |
| Competent authority | Currently done by the DDGR RAB. Soon, the director of the National Genebank will be in charge. |
| Voluntary inclusion | Not yet. |
| Use of the SMTA | Not yet. |
| In situ materials | Not yet. |
| Harmonization with the CBD | In progress. |

Uganda

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| Legal space | There is insufficient legal space. In order to create clarity, a two step process is underway: 1st step: Interim-ministerial Executive Order. 2nd step: Review and amendment of the ABS Regulations in order to incorporate the ITPGRFA/MLS. |
| Materials automatically in the MLS | The materials in the National Genebank are being screened. Most of the materials have been collected without PIC. A ministerial order will decide about which materials to include. This order is expected by September 2013. |
| Competent authority | Not yet decided. |
| Voluntary inclusion | No incentives have been identified yet. |
| Use of the SMTA | Yes, for beans. |
| In situ materials | Not yet. |
| Harmonization with the CBD | Not yet. |

Group photo



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