

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

Report of the Research Planning and Training Workshop, 2-4 May 2012

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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.

Bioversity International is a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

The **CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)** is a strategic partnership of the CGIAR and the Earth System Science Partnership (ESSP). CCAFS brings together the world's best researchers in agricultural science, development research, climate science and Earth System science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. The CGIAR Lead Center of the program is the International Center for Tropical Agriculture (CIAT) in Cali, Colombia. For more information, visit www.ccafs.cgiar.org.

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.

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Summary

From 2-4 May 2012, an international research planning and training 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.” About 20 researchers came together from seven project countries (Côte d’Ivoire, Burkina Faso, Rwanda, Uganda, Costa Rica, Guatemala, and Nepal; Bhutan did not attend); the Treaty Secretariat; CIAT; Universities of Reading (UK), Leuven (Belgium) and Illinois at Chicago (USA); and Bioversity International.* The group finalized the research agendas to support the implementation processes in the eight countries on: policy actors and networks, germplasm flows and interdependence, technology transfer, and farmers’ involvement. More information about the project can be found at the Genetic Resources Policy Blog: <http://grpi2.wordpress.com/>

*The workshop agenda and list of participants can be found at the end of the report.

Front cover illustration: Guida Jessica Joseph¹:

Group photo: Shawn Landersz, Bioversity International.

¹ Guida Jessica Joseph, illustrator and graphic designer. <http://www.guidajessicajoseph.com/guidajosepheng.html>

1. Introduction

This research planning and training workshop complemented the first international planning workshop of the project held 6-10 February 2012 at Bioversity Headquarters.² The objectives of this second workshop were to:

- 1) Finalize the research plans for the research themes on *Developing capacity to effectively implement the ITPGRFA: research on policy network structure, actor characteristics and coalitions; mapping and measuring germplasm interdependence and flows: research on the dynamics of the global crop commons; linking farmers to the ITPGRFA/MLS: potential and challenges of strengthening access to PGRFA through community-based gene/seed banks; and Technology transfer.*
- 2) Review the survey instruments for the research theme on policy actors and networks, and the theme on interdependence and germplasm flows;
- 3) Identify case studies for the theme on linking farmers to the ITPGRFA;
- 4) Identify the focus and case studies for the theme on technology transfer; and
- 5) Identify a coordination mechanism for the oversight of the overall research agenda.

Through round-table plenary sessions, participants³ engaged in discussions about the four themes and the research coordination mechanism. They reviewed the questions to be included in the survey for the theme on policy actors and networks, and the questionnaire for the theme on interdependence and flows. They received training in the use of a survey instrument for the theme on policy actors and networks. They also discussed the elaboration of a confidentiality agreement.

Special guest, Tom McInerney, founder and director of the Treaty Effectiveness Initiative, completed the programme through a presentation entitled “The emerging developmental approach to Multilateral Treaty compliance.”⁴

The main outputs of the workshop are Terms of Reference (ToRs) for the four research themes which the national teams can use to organize their work supported by members of the project's University Platform and staff of Bioversity International. The ToRs are presented in the following section.

² [http://www.bioversityinternational.org/index.php?id=19&user_bioversitypublications_pi1\[showUid\]=6456](http://www.bioversityinternational.org/index.php?id=19&user_bioversitypublications_pi1[showUid]=6456)

³ See the list of participants at the end of this report.

⁴ <http://grpi2.wordpress.com/2012/05/25/improving-treaty-coherence-and-financing/>

2. Research themes: Terms of Reference

At the first workshop, the project teams agreed on the core agenda of work to be carried out under the project; from now on this core work will be described as Theme 1 (see Box 1). They also identified a complementary research agenda that would deepen the collective ability to identify appropriate policy options to implement the ITPGRFA and the Multilateral System in particular. The eight country project teams defined four additional key themes that comprise the research agenda: policy actors and networks, germplasm flows and interdependence, technology transfer, and farmers' involvement in the ITPGRFA.

Box 1. Theme 1: <i>National-level multilateral system policy development : common 'core' activities (and products)</i>

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| <ul style="list-style-type: none">• Identify/confirm what PGRFA in [country] are 'under the management and control of the Contracting Party and in the public domain' (i.e. materials that are automatically in the multilateral system).• Identify incentives and disincentives for natural and legal individuals to voluntarily include materials in the multilateral system that are not automatically included. Identify policy options to create incentives/eliminate disincentives for voluntary inclusion of such materials in the MLS.• Clarify who in the country has authority to consider requests for access to materials in the multilateral system. There may be several, depending on the source of the material, so this needs to be worked out and agreed upon at appropriate policy levels to ensure efficient functioning.• Identify possible options concerning <i>in situ</i> materials under article 12.3.h of the International Treaty.• Analyze whether there is legal space for the implementation of the MLS. If there is not the requisite legal and administrative space, identify options for the revision of the relevant policies, laws, etc. Develop draft amendments to the relevant instruments.• Develop draft policies, executive orders, legislation, regulations and or administrative guidelines, as appropriate, to implement the MLS. The text should reflect, among other things, the issues considered above.• Introduce those draft policies, laws, executive orders regulations and or administrative guidelines into the formal policy-making processes of the relevant organizations and political bodies.• Notify the Secretary of the International Treaty concerning collections included in the MLS.• Lead processes whereby relevant competent authorities in the country and representatives of important stakeholder groups are engaged and consulted in consideration of all the issue above.• Develop a publishable report setting out the substantive considerations, research, consultative processes, that were involved in the activities and outputs above. The draft laws, policies administrative guidelines would be included (likely as appendixes) to this publishable report. |
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Theme 2: Developing capacity to effectively implement the ITPGRFA: research on policy network structure, actor characteristics and coalitions

This study will map the policy network structures and understand decision making processes in countries that have ratified the ITPGRFA. It will identify key policy actors, determine how they are positioned and connected with each other, and ascertain what their perspectives are towards the ITPGRFA and the MLS. The research will also identify the existence and importance of policy coalitions – like minded groups of actors – to assess levels of actual or expected cooperation and conflict. Of interest are also actors and stakeholders who might be active in the policy field, but who do not necessarily belong (formally or informally) to a coalition or coalitions, for example, farmer associations or NGOs.

The research has three main objectives. First, to provide a transparent picture of the structure and relationships of policy actors who are important for the effective implementation of the ITPGRFA/MLS. Second, to identify opportunities or needs for interaction with or inclusion of new actors that would benefit and could contribute to the implementation process. Third, to examine changes in policy network structures and relationships over time and link them to policy implementation outcomes. Based on the data collected and analyzed, theme researchers will suggest possible capacity development interventions for effective implementation of the ITPGRFA/MLS. Expected benefits also include increased awareness about the ITPGRFA/MLS among key policy makers.

It involves a team of researchers from Bioversity International, University of Illinois at Chicago and national research partners from each country.

Research questions:

- Who are the key actors (individuals and organizations) who are important to the ITPGRFA/MLS policy implementation process/were instrumental in the policy development process?
- How is the network of policy actors structured? What ties exist? How strong are the ties?
- What explains the network structure: To what extent are the ties formally mandated by reporting rules or administrative law, versus informally constructed? How do different policy actors perceive the importance or benefits of the ITPGRFA/MLS? Where are the key actors located? (sector, geography, etc.).
- Considering the need for capacity development for the implementation of the ITPGRFA, what are the weaknesses of the policy network? What suggestions might be made to improve the implementation process?
- How does the policy network evolve over time? In what ways do new actors enter or existing actors leave? How do coalitions of actors change? How do perspectives change?
- To what extent do the structures and dynamics of the policy network explain policy outcomes such as implementation speed, completeness, gaps in capacity, use of the MLS, etc.?

Activities and timeframe by research institution

University of Illinois at Chicago

- University of Illinois at Chicago (UIC) will finalize and send final survey instrument to partner researcher in each country by early June, 2012.

- UIC will input the final version of the survey instrument into Sawtooth, a survey software program by the end of June, 2012.
- UIC will provide remote technical support for the researcher through Skype and email.
- Moreover, to ensure the quality of the data the UIC researcher team will travel the Côte d'Ivoire, Burkina Faso, Rwanda, and Uganda to check data collection procedures and provide any further support. The Bioversity international research team will travel to Bhutan, Nepal, Guatemala, and Costa Rica with the same purpose.
- Finally, UIC will check the quality of data received from researcher, clean the data and make it available for Bioversity and the research partner for analysis end of November, 2012.
- UIC will analyze the data, write reports on the topic and submit it to Bioversity. The reports will be circulated for comments present on scientific forums, and published. The draft report will be made available by the end of December, 2012.

Bioversity International

- Bioversity International will translate the survey instruments to Spanish and French by mid- to late June, 2012.

National Research Partners

- The national researchers will collect the network data and traditional survey data in accordance to the attached survey instrument (annex 1). The researchers will use Sawtooth software to collect the data and must ensure the quality of data in the collection process. Data collection will be completed by the end of August, 2012.
- The survey instrument will elicit names of key policy actors in several domains. The researchers will then contact the named policy actors, schedule interviews and undertake interviews of all persons named in the network, following the principle of snowball sampling.
- Policy-relevant organizations covered in the survey include international organization working in country under study, national, regional and local government agencies, non-governmental (non-profit), private companies and business associations, farmers organizations (formal and informal), research organizations (institutes and research centers), academic institutions (universities and colleges), media (TV, radio, newspapers) and so on.
- Some of the network survey questions will request respondents to name individual policy actors and the ways in which they are connected to each of the actors. It will also ask respondents to name key individuals who are important for ITPGRFA implementation who are not currently in the network, but should be. Traditional survey questions will ask individual respondents about their perspectives and beliefs, as well as other professional and demographic characteristics. Researchers on the project are responsible for maintaining the confidentiality of the respondents provided information.
- Researchers will maintain the survey data on a secure server with a strong password protected firewalls.
- All national research managers will download the data from Sawtooth software and send to UIC in between the survey process. This will be quite important to check the progress in data collection and also the quality of data.

Expected results

Results of this survey should:

- Inform our understanding of who needs to be involved in the implementation for effective implementation of the ITPGRFA, MLS;
- Provide greater understanding of the ITPGRFA and MLS implementing community, institutional constraints, etc...;
- Enable mapping of the network structure linking policy actors;
- Understand which factors explain the structure and ties of the network;
- Document the dynamism of the network;
- Identify the extent and types of the capacity development needed for the implementation of the ITPGRFA and MLS;
- Suggest mechanisms for improving policies and strategies for effective implementation of the ITPGRFA and MLS.

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

The strong interdependence of countries on PGRFA is one of the two key rationales for the creation of the Multilateral System of access and benefit sharing (MLS) under the International Treaty (the other closely linked rationale is that PGRFA are critical for food security). Given the nature of their work, plant breeders and agricultural scientists are generally aware of the extent of their dependence on foreign-sourced PGRFA as in-puts for their crop breeding and research programmes. However, other stakeholders, such as farmers, civil society organizations, and policy makers from departments of agricultural, environment, and industry generally do not share this awareness. As a result, they are not able to appreciate why participation in the multilateral system is potentially so important. This research component is designed to address this awareness gap, by providing empirical evidence of the extent to which the countries-concerned are dependent on foreign-sourced PGRFA for their agricultural research and development (including breeding) and ultimately for their food security. The research will include a retrospective element, looking at past patterns of access and use of PGRFA by different groups in the country. The research will also look forward in time, and analyze the extent to which the countries concerned are likely to become even more dependent on foreign-sourced germplasm as a result of climate change. In addition to raising awareness about interdependence and the importance of participating in the multilateral system, the research results will provide an information base to identify options for the implementation of the multilateral system that are tailored to the needs and challenges facing PGRFA users in the country.

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

The first introductory component of this research will focus on the history of the introduction and adoption of important food and forage crops in the country.

Research questions:

What are the major food and forage crops in the country? When and where were they originally domesticated? When and how were they introduced to the country (if they were not domesticated there)? When did those crops assume their current levels of importance to the national diet and economy? What institutional factors contributed to their popularization?

Activity	Methods	Responsibility	Time-line	Output
Analysis of the domestication and or introduction and adoption of major/most important food and forage crops in the country.	Initial compilation of 'international' crop domestication and introduction-related literature. Not including country specific and grey literature sources. Placing references in common space on GRPI 2 shared space.	Bioversity	6 months	Paper of publishable quality, fully referenced. To be integrated with written outputs from other Theme 3 outputs.
	Country specific literature review regarding domestication, introduction, adoption/contribution to national diet, food security, national agricultural production, exports, GDP etc. N.B. It is not anticipated that any other methods, other than literature review, will be followed.	Researcher/consultant appointed by the National Research Theme 3 leader.		

Component 2: Germplasm Flows, Uses and determining factors

The second research component will analyze the patterns of flows of PGRFA into, within and out of the country, and the international character of the pedigrees of released varieties. The objective is to establish the extent of the country's reliance on PGRFA from other countries and international organizations. This component will also analyze the factors influencing the current patterns of PGR exchange and utilization, exploring scenarios with users about challenges/ opportunities concerning increased access to foreign PGRFA in the future and measures that could facilitate exchange.

Research Questions:

- What are the patterns of PGRFA flows into, within and out of the country? How have these patterns changed over time?
- What is the extent of reliance on external PGRFA by different institutions/programmes involved in research, crop improvement, and agricultural development? How does the extent of interdependence vary across crops?
- To what extent have variety innovations for different crops developed in the country incorporated PGRFA that were originally collected and or improved in other countries?
- What are the important variety innovations developed internationally or in other countries using the PGR contributed by the national partner to the MLS?
- What are the key policy, regulatory, institutional and administrative factors that influence the pattern of international exchange of PGR?
- How is the exchange of PGR influenced by existing networks and the social norms and beliefs of the stakeholders?
- What are the stakeholder perceptions of constraints/opportunities relating to access to foreign PGR in the future?
- What are the measures that stakeholders view as being critical for facilitating improved international exchange of PGR in the future?

Activity	Methods	Responsibility	Time-line	Output
<p>Identification of institutions for collection of information on PGRFA flows into, within, and out of the country including:</p> <ul style="list-style-type: none"> • International genebanks (CGIAR centres) and foreign, national genebanks (e.g., USA, Netherlands, Germany) National and sub-national genebanks (including those in the NARS and the university sector). • Regional PGR and crop improvement networks. • Community genebanks. • Plant breeding programmes in the public and private sector. • Participatory breeding programmes or initiatives. • NGOs and other organizations involved in seed delivery. 	<p>Review of literature (e.g., National SOW reports) and consultations with national institutions and stakeholders (possibly through the project oversight committee).</p>	<p>National Research Theme 3 leader</p>	<p>1 month</p>	<p>A list of institutions and programmes whose activities cover a large part of PGR conservation, exchange and utilisation in the country.</p>
<p>Collection/compilation of information on PGRFA flows into, within and out of the country, and related uses. Also collection/compilation of info regarding factors influencing flows of PGR into, within and out of the country, and stakeholders' perceptions of constraints and opportunities relating to PGR exchange in the future Sources will include:</p> <ul style="list-style-type: none"> • CGIAR centres' genebanks. • Some additional cases, breeding programmes. • Foreign national genebanks. 	<p>Initial compilation of 'international' literature on germplasm flows, pedigrees. Not including country specific and grey literature sources. Placing references in common space on GRPI 2 shared space.</p>	<p>Bioversity</p>	<p>Two months for preparation of data collection templates.</p> <p>Ten months for administration of questionnaire to relevant respondents (expected to not exceed 50 in number)</p>	<p>Fully referenced, edited paper, presenting analysis of flows and uses of PGRFA with analysis of the determinants. Data on flows and uses included in annexes using agreed templates. This paper will likely be combined with paper on pedigrees (below), and other papers produced under the Theme.</p>
	<p>Regarding CGIAR genebanks, Bioversity staff will search SINGER and GENESYS data.</p>	<p>Bioversity</p>	<p>Two months for data collation and analysis after completion of administration of questionnaire.</p>	
	<p>For possible case studies of germplasm flows as part of targeted crop improvement programmes, Bioversity staff can work with national Theme 3 leaders to request breeders' data from particular CG centres.</p>	<p>Bioversity with National Research Theme 3 leader</p>		
	<p>Compile feedback from country sources (as</p>	<p>National Research Theme 3</p>		

Activity	Methods	Responsibility	Time-line	Output
<ul style="list-style-type: none">Genebanks, researchers, breeders, relief organizations in the country (including universities and private sector if feasible). Also regional networks.Farmers in the country (mainly about informal networks of exchange that transcend national boundaries).	below). Send requests for information from foreign genebanks concerned to verify and deepen information.	leader with team of researchers		
	Develop standardized templates for recording quantitative and qualitative data. They will need to be tailored to reflect the nature of data collected and data source.	University platform and Bioversity will lead, in coordination with National Theme 3 leaders		
	Information to be collected following us the common data collection templates. Methods may include interviews, or focused research by individuals where quant data collection required.	For sources within countries, the data collection will be lead by team designated by National Research Theme 3 leader. Academic research platform (esp.KUL) also can participate in in-country capacity strengthening and data collection in coord with the Theme 3 Research Leaders.		
Pedigree analysis of ‘modern’ varieties released in the country.	Initial compilation of ‘international’ literature on pedigrees. Not country specific or grey literature. Place on GRPI 2 shared space.	Bioversity	3 months	Fully referenced report presenting a detailed pedigree analysis of modern varieties released in country highlighting the use of PGRFA from different countries and accessed through the MLS. To include, in annexes, data following agreed-upon templates.
	Review of country and crop specific pedigree literature (including grey lit).	Research appointed by the National Theme 3 leader	3 months	
	Interviews with, or studies by, plant breeders (using information contained in breeder’s books or other records at their disposal).	National Research Theme 3 leader with research team	6 months	
	Extracting pedigree information on varieties released in the country from International Crop Information Systems (ICIS) maintained by CGIAR centres. Capacity building/training for national research partners to use ICIS, if necessary.	National theme leader with plant breeder or crop scientist with adequate ICIS experience or capacity to be trained in the use of ICIS.		

Component 3: Benefits from International PGR Exchange

The third component aims at identifying the benefits accruing to the country from use of foreign-sourced PGRFA in new plant varieties. The development of indicators to assess the contribution of external PGRFA to innovations developed and disseminated in the country will be an important component of the research. Economic impact of innovations developed through international PGRFA exchange will be taken at two levels. At the aggregate level, economic impacts of innovation can be assessed through estimation of changes to consumer and producer surplus as a result of the innovation. This will require data to be collected on the spread of the innovation and its effects on production, yield and prices. However, economic surplus calculations by themselves are not informative about the income and poverty alleviation impacts at the household level – which is often of primary concern to policy makers. The assessment of poverty alleviation and livelihood impacts requires micro-level surveys at the household level. National partners could identify specific innovations for different crops where the assessment of economic impacts through micro-level surveys would be useful for highlighting the role of international exchange of PGRFA. The data from household surveys can be used to assess the impact of innovation using well-established econometric models from the “treatment effects” literature. Under exceptional circumstances (where useful data does not already exist), it may be possible to undertake new household level surveys to construct counterfactual scenarios that would have prevailed in the absence of the innovation. The benefits that would be foregone in the absence of the innovation will provide a measure of the opportunity cost of not engaging in international PGRFA exchange.

Research Questions:

- What are the new variety innovations in key food and forage crops that have been facilitated by international PGR exchange?
- What have been the dissemination and adoption patterns of these new variety innovations that incorporate external PGR?
- What is the economic and poverty/livelihoods impact of the adoption of these new variety innovations?
- What would be the benefits foregone in the absence of these new variety innovations?

Activity	Methods	Responsibility	Time-line	Output
Identification of one or two case study varieties (commercially successful and widely adopted) that have been developed incorporating external PGR – for undertaking detailed case studies.	Pedigree analysis undertaken in Component 2. Consultation with plant breeding programmes and seed companies.	National Research Theme -3 leader who should designate a small team including a plant breeder and an agricultural economist.	6 months from inception	Case studies illustrating the economic and poverty impacts of new variety innovations developed using PGR originally collected from other countries. The case studies will present counterfactual scenarios that would have prevailed in the absence of these innovations – highlighting the opportunity costs of not participating in the MLS.
Collection of data for economic impact analysis.	Conventional economic surplus analysis using data on variety adoption, yield advantage in experimental and field conditions in relation to existing varieties, commodity prices from secondary sources such as seed certification or marketing statistics, variety release data, agronomic trial data, published price series etc.		3 months from inception	
Search for useful existing data sets based on passed household surveys.	Search likely sources for existing useful farm household datasets with information on adoption of new varieties or technologies). N.B. Existing data sources could also inform the selection of case study varieties.	National Research Theme 3 leader with support from Academic Research Platform (esp Reading).	1 year from inception	
In absence of useful, existing data sets, collection of no.of data for analysis of impact on poverty and livelihoods.	Household survey of adopting and non-adopting households.			

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

This component is intended to assist country partners to assess the changing needs for foreign-sourced PGRFA in the context of adaptation to climate change. This will involve facilitating the use of climate change modelling tools by country partners so that they can assess the implications of different climate change scenarios for variety adaptation in different crops and the associated PGRFA requirements. This research will highlight how patterns of PGRFA interdependence may change in the future in the context of climate change. It may also give rise to actual requests for germplasm identified through the research, and material being received through the MLS and used.

In this component, research teams will assess their changing needs for PGRFA to be able to adapt to climate change. The research hypothesis is that countries will be increasingly dependent on germplasm from foreign sources as climate changes require them to look further afield for useful adapted traits or species.

The research teams will also attempt to gain access to potentially useful PGRFA – identified through the exercises above - through the multilateral system. (Time permitting, national research teams will evaluate the performance of accessed germplasm. Otherwise they will do so after the project.)

Research questions:

- How has the climate changed in the country?
- How have those changes affected the ability to grow crops and forages in the country?
- How is the climate likely to change in the future?
- What will the impacts of those climate changes be on the ability to continue to grow the current portfolio of crops and forages?
- What traits (of currently used crops) or new species are particularly relevant to adapt to the predicted climate changes?
- Where are such genetic resources available? Are a greater or lesser proportion of the needed genetic resources available from within/outside the country than during the last 10 years?
- Can the needed genetic resources be accessed through the multilateral system of the International Treaty? Through some alternate mechanism?
- How do the accessed materials perform in the countries concerned? Are they actually well adapted to the conditions in the country concerned?

Activity	Methods	Responsibility	Time-line	Output
Collect and analyze information about climate changes <i>up to the present</i> in the country, and the impacts of those changes on agricultural production systems in the country.	Literature review	National Research Theme 3 leader & the team he/she assemble.		Written summary
	Search climate change data bases including: <ul style="list-style-type: none"> • For 1950-2000 WorldClim data; • For future climate: the mean of the 24 Global Circulation Models (GCMs) using intermediate climate scenario A1B. 	CIAT/CCAFS with support to national team.		
Identify sites in the country for in depth analysis of <i>future</i> climate changes. Criteria for selection can be various, including: importance of area for agriculture production, its vulnerability to climate change, agricultural and ecological uniqueness, etc. Identify crops of particular interest grown in those areas.	Consultation with national oversight committee OR research team OR stakeholder focus groups. N.B. Up to 50 years of climate change data is available with a resolution of 1 km square.	National Research Theme 3 leader. Tech support from CIAT/CCAFS and Bioversity as necessary.		Research areas identified with written summary of criteria invoked. List of crops of particular interest grown in those areas.
Identify the future climate of the reference sites (up to maximum resolution of 1km) in XX years ⁵ . Identify potential analogue sites, the climate is presently like it will be in reference site in XX years (up to max resolution of 1km).	Use of climate analogues tool. Capacity building in country to use the tool.	CIAT/CCAFS in cooperation with national Research Theme 3 leader and Bioversity		Report including maps
Verify what crops are being grown in the	Literature surveys.	National Research Theme 3		

⁵ CIAT/CCAFS is currently working on 2030 climate and 2050 climate predictions. The national research team could decide if they want shorter-term predictions. This would have resource implications that need to be explored.

Activity	Methods	Responsibility	Time-line	Output
analogue sites. Compare – between reference and analogue sites -- other factors, not available through climate analogue tool, that could be contributing to crop choices, e.g., soil quality, altitude, wind, cultural preferences, etc.	Contact relevant experts/contacts in analogue sites countries. Consult crop suitability studies to obtain information about suitability of climates in reference sites for crops located in analogue sites.	leader with assistance from CIAT/CCAFS, Bioversity, University Researchers platform.		
Confirm which species (and possibly traits) grown in analogue sites are of most potential interest for use in reference site.	Consultation with national oversight committee OR research team OR stakeholder focus groups, including, possibly, farmers/producers in the reference sites.	National Research Theme 3 leader		
Check to see what germplasm related to species and traits from the analogue sites is available through the multilateral system.	Search passport data of accessions in genebanks (including CGIAR, regional, and national genebanks with relevant collections). First, what is available on-line. Where not on line, contact 'best bet' genebanks. Where no information is available, contact competent authority (e.g, national Treaty and CBD focal points) of analogue site country to see if germplasm is available and can be provided.	National Research Theme 3 leader and research team with assistance from CIAT/CCAFS, Bioversity, and University Researchers platform.		
Request germplasm. Once received, organize testing in reference (and possibly other) sites. N.B. it is quite possible that this work will not be possible within the life of the project.		National Research Theme 3 leader. Teams of farmers and national ag research org scientists in reference sites.		
Identify sites that will have climates in XX years that are like those in reference sites now.	Use 'analogue tool' to find sites. Strengthen capacity of country partners to use the tool.	CIAT/CCAFS, with assistance to National Research Theme 3 leader and research team.		

Synthesis and analysis across all research components within each country:

The National Theme 3 research leader in each country will coordinate an overall synthesis and analysis of the process and the results obtained from the research work. Bioversity, the academic research platform and CIAT/CCAFS will provide technical assistance where necessary. They may also participate in some of the in-field data collection exercises. Results will be presented in the form of fully referenced, publishable paper or papers. Related, spin-off products could include policy briefs focused at stakeholders or policy makers in the countries concerned, country-specific submissions to the sessions of the Governing Body, the Ad Hoc Open-ended Working Group on Sustainable Use of PGRFA, international climate change-related meetings, etc.

Synthesis and analysis across the eight countries:

Bioversity, the University research platform, the National Theme 3 research leaders and CIAT/CCAFS will conduct overall synthesis and analysis, which will be summarized in the form of a publishable paper or papers. Related, spin-off products could include policy briefs, book chapters, collective submissions to sessions of the Governing Body, the Ad Hoc Open-ended Working Group on Sustainable Use of PGRFA.

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

This theme examines how farmers and farmer communities can be more directly involved in the implementation of the ITPGRFA/MLS, in particular through the improvement of their access to and use of germplasm that is stored at national and international levels. It seeks to understand the existing relationship between local, national and international access mechanisms and identify ways in which implementation of the ITPGRFA/MLS can promote appropriate policy and legal measures that contribute to multi-level PGRFA sustainable use practices.

Research questions:

- How did these community-based initiatives emerge? Who was / is behind them? Where do they exist? What roles do they play? What kind of and how much PGRFA materials do they hold/flow in and out of them? Do they play a special role in the conservation and use of underutilized and neglected species? Who is using these materials? When and how? How are they organized, governed, and managed? What kind of recognition, access and benefit sharing mechanism(s) do they use? How is traditional knowledge related to materials dealt with?
- How do community gene/seed banks connect to other local or regional initiative of the same nature? Are they connected to/cooperate with formal system gene-banks and seed systems at national level? Are there any risks related to becoming more directly linked to the formal system? How do they compare to formal system gene-banks/seed systems? Could they be functionally linked to national and even to international gene/seed banks? Could they be linked to the MLS? Would farmer communities be interested in such links? Under what conditions? What kind of “new materials” could be of interest? From where and how to obtain these materials?
- What roles do/could they play in community-based seed production of what kind of materials (local, improved, hybrids; major crops, underutilized and neglected species)? Do/could they play a role in participatory crop improvement? What are the challenges?
- What impact does climate change have? Are/could community gene/seed banks (be) playing a role in local adaptation efforts?
- How do policies, laws and (informal) institutions impact on their operations? Do policies, laws and (informal) institutions enable or provide support, for example, in the form of Farmers’ Rights? What concrete results have support led to? For whom? In which ways could (additional/other) forms of policy/legal support be effective?
- How could community gene/seed banks be made sustainable? What are effective incentives, institutional support mechanisms, and links to guarantee long-term functioning?

Activity	Methods	Responsible	Time-line	Output
Review of global literature on existing community gene/seed banks initiatives.	Desk-review	Bioversity International Policy Unit team	May-July 2012	Article (includes a conceptual framework)
National level inventory of existing community gene/seed banks.	Document review and interviews	National team	May-June 2012, preferably prior to the national workshops	List of cases and background documentation
Elaborating case studies (one or two).	Field observations, photographic and video documentation, interviews, participatory tools.	National team with support of Bioversity International	July-December 2012	Report, photo album, video
Strengthening of selected community gene/seed banks.	Capacity building, exploring new links, new policy/legal/institutional arrangements.	National team with support of Bioversity International	2013	Report, photo album, video
Cross country analysis of cases and generation of practice and policy recommendations.	Comparative analysis of key elements across cases.	National team with support of Bioversity International	January 2013 (characterization) December 2013 (action component)	Report, article, blogs

Theme 5: Technology transfer: generating non-monetary benefit sharing in support of conservation and sustainable use of PGRFA

Article 13.2 (b) of the ITPGRFA states that “Contracting Parties undertake to provide and/or facilitate access to technologies for the conservation, characterization, evaluation and use of [PGRFA] which are under the Multilateral System”. The Treaty anticipates that transfers of technologies could be carried out through a variety of mechanisms including crop-based thematic groups, research and development partnerships, and commercial joint ventures (13.2.ii). The Treaty states that technology transfer to developing countries should be “on fair and most favorable” and “concessional and preferential” terms which also recognize and are “consistent with the adequate and effective protection of intellectual property rights.”

There is considerable uncertainty what is meant by technologies ‘for conservation, characterization, evaluation and use,’ and which such technologies developing countries are interested in getting access to (or providing). Nor is there much documentation about the experiences of developing countries in their past efforts to transfer (as providers or recipients) of such technologies, particularly under the framework of the Treaty. To date, there has been no discussion about how to operationalize article 13.2(b) at the level of the Treaty’s governing body. In short, very little is being done to attempt to take advantage of the tech transfer provisions of the Treaty.

The objective of this research theme therefore is to stimulate discussion within countries, and at the level of the governing body, about: developing countries’ conceptions of what technologies actually fall within what is described in article 13.2(b), developing countries’ needs or capacities to transfer (as either recipients or providers) such technologies, their experiences to date transferring related technologies, and potential proactive measures that can be taken at the level of the Governing Body to promote technology transfer.

Research questions:

- What kinds of technologies do stakeholders in the countries consider to be “for the conservation, characterization, evaluation and use of [PGRFA] which are under the Multilateral System”?
- What technologies do experts/stakeholders involved in the conservation and sustainable use of PGRFA in the countries-concerned consider to be particularly important to transfer (as either providers or recipients) at this point in time? How do they think those needs have changed and will change over time? Why? Is there any difference between their technology transfer interests (as recipients or providers) with respect to the 64 crops and forages included in the multilateral system and those that are not?
- What specialized bodies exist within the country (and within organizations) to promote technology transfer of the sort identified above? What are their experiences to date? What lessons can be learned from their success stories and challenges they have encountered?
- How do the technology transfer needs and experiences compare across the eight countries?
- What is the most appropriate focus and form of intervention at the level of the Governing Body to address challenges associated with the transfer of technologies to, within, and from developing countries related to ‘conservation, characterization, evaluation and use,’ of PGRFA?

These research questions can be addressed through 3 components.

Component 1: Organizational case study(ies) – starting with the tech transfer office of the main national agriculture research organization with the most relevant experiences, with possibility to include other organizations

Activity	Methods	Responsible	Time-line	Output
<p>Describe the position, mandate and role of the department in the organization. Also staffing, resources.</p> <p>List all cases of relevant tech transfer facilitated by the organization in the last 5-10 years (depending upon the volume).</p> <p>Analyze trends in tech transfer needs and activities of the organization: past, present and future.</p> <p>Provide relevant details of particular cases that are illustrative of good and less successful tech transfer experiences.</p> <p>Synthesize and distil best practices, positive contributing factors, persistent challenges, lessons learned.</p>	<p>Commissioned study by high level staff in the office concerned.</p> <p>Possibly conduct interviews with local participants in some of the past tech transfer cases highlighted by the commissioned author above.</p>	<p>Commissioned author(s).</p> <p>National Research Theme 5 leader</p>	<p>June – October 2012</p>	<p>high quality report written in publishable style and format</p>
<p>Consider additional studies of other organizations, following the same model.</p>		<p>National Research Theme 5 leader</p>		

Component 2: technology transfer case study(ies)

Activity	Methods	Responsible	Time-line	Output
Select case of technology transfer need to be actively addressed within the project: identify technology, transferees and potential transferors.	Round table discussion with national project oversight committee OR also consultation with tech transfer office studied in component 1 OR stakeholder focus group.	National Research Theme 5 leader	June 2012	One, maximum two, case studies identified
<p>Develop strategy and partnerships (if necessary) to support the transfer of technology between provider and recipients.</p> <p>Negotiate agreement between potential provider and recipients.</p> <p>Supporting actual transfer of technology.</p> <p>Document experiences (action oriented case study).</p>	Organizations involved in actual transfer work together, with National Theme 5 leader.	National Research Theme 5 leader with researchers and representatives of organizations involved in case study.	July 2012 – December 2013	<p>Strategic plan</p> <p>Tech transfer agreement</p> <p>Technology transferred</p> <p>High quality report documenting experiences, challenges encountered, lessons learned.</p>

Component 3: National stakeholders' survey: tech transfer needs within the country related to conserving and sustainably using PGRFA

Activity	Methods	Responsible	Time-line	Output
Consultation with/through national project oversight committee regarding different stakeholder groups' perspectives, technology transfer needs and experiences, and expectations.	Facilitated, focus group discussion by national project oversight committee (and invited guests as appropriate).	National Research Theme 5 leader. National project oversight committee.		Report of focus group outcomes
Add 1-2 technology transfer needs-related questions to the surveys of PGRFA users under Research Theme 3 – Interdependence and flows.	Personal interviews conducted by Theme 3 research teams.	Luvain, Reading, Bioversity to finalize Theme 3 survey questions. National Level Research Themes 3 leader oversees survey and shares results with theme 5 leader Theme 5 leader analyzes feedback	July 2012 - November 2012	Survey data Report of survey responses regarding technology transfer

Synthesis and analysis across the three components within each country:

The national component 5 research leader (and or the research group developed for this purpose) will use the reports from these three components to conduct an overall synthesis and analysis, which will be presented in the form of a publishable paper. Related, spin-off products could include policy briefs focused at stakeholders or policy makers in the countries concerned, country-specific submissions to the 5th and or 6th sessions of the Governing Body.

Synthesis and analysis across the eight countries:

Bioversity staff, national component 5 research leaders will conduct overall synthesis and analysis, which will be summarized in the form of a publishable paper. Related, spin-off products could include policy briefs, book chapters, and submissions to the 5th and or 6th sessions of the Governing Body.

Overall theme coordinators

- 1: Michael Halewood, Ronnie Vernooy, Isabel López-Noriega
- 2: Ronnie Vernooy, Erich Welch, Aseffa Seyoum
- 3: Michael Halewood, Tom Dedeurwaerdere, C.R. Srinivasan
- 4: Ronnie Vernooy, Gea Galluzzi
- 5: Michael Halewood, Isabel López-Noriega/Isabel Lapeña (ad-interim)

3. Next steps

Participants agreed on the following:

- Each country team will assign contact persons for the 5 themes (June 2012).
- Each country team will plan an inception workshop or a series of events/activities (June-August 2012).
- Each country team will elaborate a detailed budget for the research agenda (themes 2-5) (June 2012).
- The University Platform will finalize the confidentiality agreement (June 2012).
- The University Platform and Bioversity International will plan and deliver technical support activities for the eight country teams (June-August).
- The University Platform and Bioversity International will finalize the tools for themes 2 and 3 and plan training activities according to the needs of the eight country teams (June-July 2012).
- Bioversity International will further develop the project Intranet site (June-July 2012).
- The eight country teams will consider the offer made by Léontine Cresson from the Netherlands Ministry of Economic Affairs, Agriculture and Innovation to provide in-country technical support for a period of up to 3 months (June 2012).

Workshop program

Day 1:

- 9:15 – 10:00 Welcome and introduction (agenda, participants, work process)
- 10:00 – 11:00 Theme: interdependence and germplasm flows
- 11:00 – 11:30 Coffee Break
- 11:30 – 13:00 Theme: interdependence and germplasm flows
- 13:00 – 14:00 Lunch
- 14:00 – 15:45 Theme: interdependence and germplasm flows
- 15:45 – 16:15 Coffee Break
- 16:15 – 17:30 Theme: linking farmers (discussion)
- 20:00 – 22:00 Group dinner at restaurant L'Isola, Rome

Day 2:

- 9:00 – 10:00 Theme: policy actors
- 10:00 – 10:30 Coffee Break
- 10:30 – 13:00 Theme: policy actors
- 13:00 – 14:00 Lunch
- 14:00 – 15:45 Theme: policy actors
- 15:45 – 16:15 Coffee Break
- 16:15 – 17:30 Theme: technology transfer (discussion)

Day 3:

- 9:00 – 10:00 Tom Mc Inerney⁶ “The emerging developmental approach to Multilateral Treaty Compliance”
- 10:00 – 10:45 Theme: technology transfer (case selection)
- 10:45 – 11:15 Coffee Break
- 11:15 – 13:00 Theme: linking farmers (case selection)
- 13:00 – 15:00 Lunch at restaurant La Scialuppa in Fregene (on the beach)
- 15:00 – 16:30 Next steps, workshop evaluation, closure

⁶ Founder and Director of the Treaty Effectiveness Initiative

List of participants

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Group Photo



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