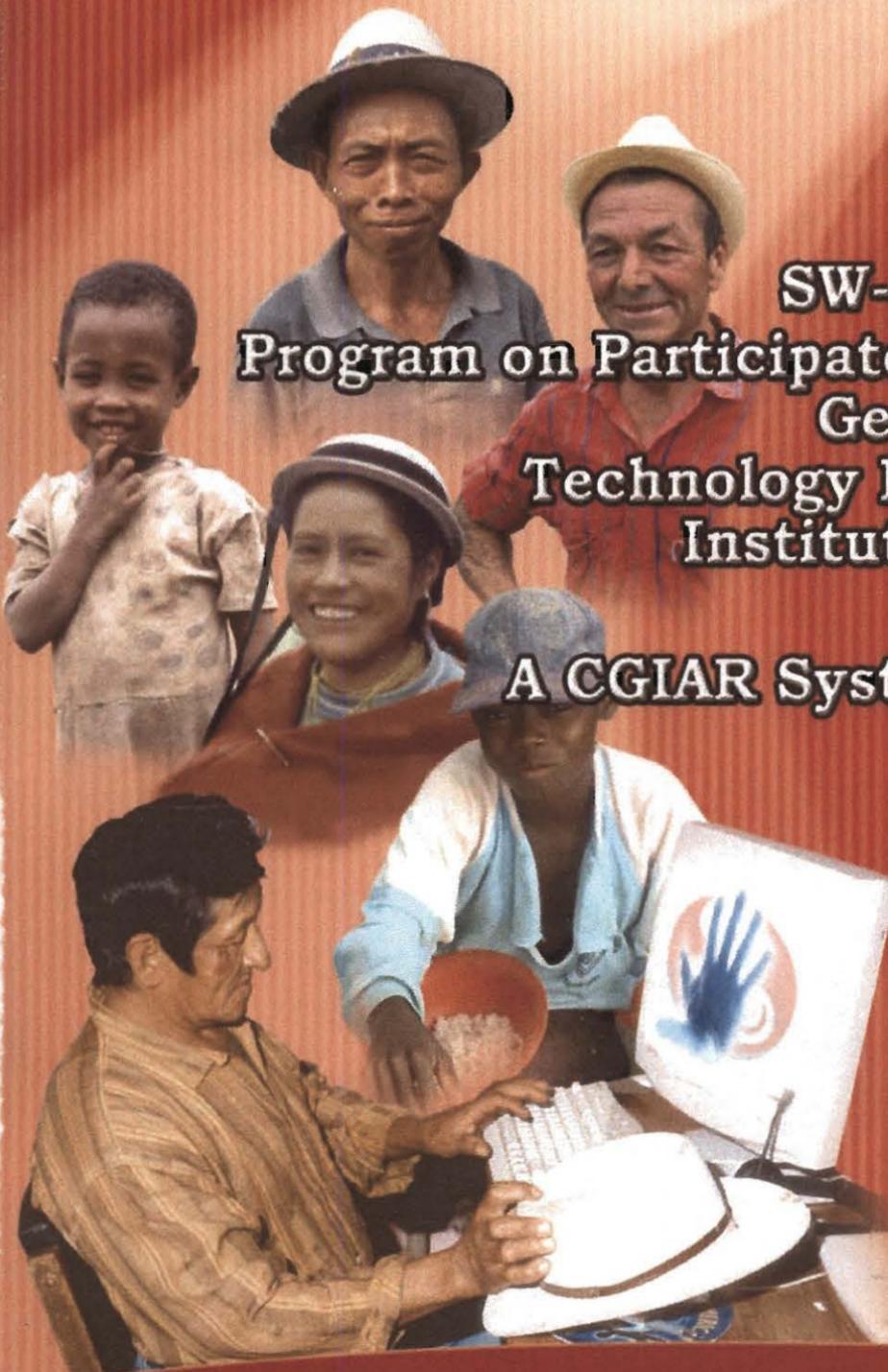
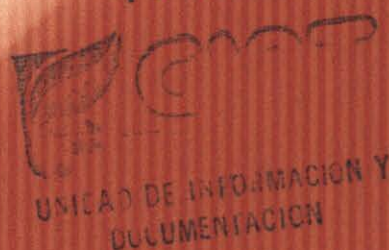


# Rural Innovation Institute



**Rural  
Innovation  
Institute**

15 MAYO 2006



**SW-3: PRGA Program  
Program on Participatory Research and  
Gender Analysis for  
Technology Development and  
Institutional Innovation**

**A CGIAR Systemwide Program**

**VOLUME IV**

**Annual  
Report  
2005**

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## **PRGA Program**

**Program on Participatory Research and  
Gender Analysis for  
Technology Development and  
Institutional Innovation**

**A CGIAR Systemwide Program**

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# **PRGA Program—Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation**

## **A CGIAR Systemwide Program**

### **Program Overview**

#### ***Background***

The Systemwide Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation (PRGA Program) was established in 1997 with two major objectives:

- To assess and develop methodologies and to operationalize their use in plant breeding and natural-resource management research;
- To systematize and mainstream what is being learned worldwide from the integration of gender-sensitive participatory research with plant breeding, crop and natural-resource management research.

During phase 1 (1997–2002), the PRGA Program, together with its partners, helped create strong momentum to implement gender-sensitive participatory approaches both within the Consultative Group on International Agricultural Research (CGIAR) system and on a broader scale. Many respected scientists and practitioners are using these approaches in their research, and demand is growing for training. The PRGA Program has demonstrated that participatory research and gender analysis embody rigorous methods that are scientifically grounded.

The PRGA Program's work has built a body of evidence that shows that these methods are delivering broad impact by producing technologies and resource-management options that are well suited to end-users' needs, thus significantly reducing the possibility of farmers rejecting newly developed technologies. In addition, participatory research is producing "process impacts," resulting in, for example, increased human and social capital, which is essential to the sustainability of rural development and innovation. Among those who benefit most from the implementation of these approaches are the very poor, especially women, and marginal groups, who are often overlooked by conventional research. Finally, the PRGA Program has demonstrated how gender-sensitive participatory research can be cost-efficient, because of its increased impact and shortened time to produce relevant technologies.

The accomplishments of the PRGA Program during Phase 1 can be summarized as follows.

- Assessed the global state-of-the-art and emerging issues in participatory research and gender analysis.
- Enabled the scientific use of participatory research and gender analysis.
- Provided support and engaged in cutting-edge research.
- Fostered community of knowledge and practice.
- Conducted rigorous evaluation of impacts.

## ***Major lessons from Phase 1***

While these accomplishments are in themselves good news, there are nevertheless several challenges that arise from the experiences in Phase 1. Much of the effectiveness of participatory research and gender analysis methods to address client demands, particularly those of poor rural women, is critically constrained by the following factors.

- While there is a general and increasing interest in the use of participatory research approaches, there is little evidence that gender analysis is being given due attention.
- Among the CG Centers, there is an absence of a critical mass of members who are using equitable participatory research and gender analysis methods.
- There is a great and unmet need for capacity development in the use of these methods.
- In cases where participatory research approaches have been applied, there is enhanced learning as a result of experimentation with methods. However, much of the learning and change that accompanies the use of these methods remains isolated from the project cycle and does not extend to the organization level.

These factors severely restrict the extent to which equitable participatory research and gender-analysis approaches are integrated into the research process, thereby limiting the extent to which their positive impacts can be scaled up.

## ***Program goal (2003–2007)***

Building on these key lessons, the major goal and focus for Phase 2 of the PRGA Program (2003–2007) is to mainstream gender analysis and equitable participatory research to promote learning and change in CG Centers and national agricultural research systems (NARS) so that they can better target the demands of beneficiary groups, particularly poor rural women.

In order to achieve this goal, the PRGA Program adopted a renewed focus on developing capacity and action research for mainstreaming; a continued emphasis on assessing impacts for institutional learning and change; and, a continuously evolving partnership and communication strategy.

## ***Looking to the future***

Along with the rest of the CG System, the PRGA Program undertook a major revision of its Medium-Term Plan and logical framework (logframe) in 2005. The revised logframe is presented in Appendix 6.

To complement the Program strategies for mainstreaming, gender analysis, impact assessment, and capacity development (all published in last year's *Annual Report*), we developed a new Program strategy for participatory research (presented in Appendix 7) and drafted revised strategies for our communications and partnerships, both of which will be further developed in 2006.

The three-year gender-mainstreaming project in Africa will come to a fruition in 2006 as the impact of action plans in the national agricultural research programs will be assessed.

The outcomes of the Impact Assessment Workshop (see page 566) have catalyzed a new set of innovative activities for our impact-assessment work in 2006. One such new focus will be on understanding impacts of social inclusion in agricultural research. In addition, several aspects of the Program's *modus operandi* were tabled for discussion at the January 2006 annual meeting of our Advisory Board.

## Program Logical Framework 2005

Narrative Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p><b>Goal</b> Mainstream gender analysis and equitable participatory research to promote learning and change through partnerships with CG Centers, NARS, and civil society groups, so that they can better target the demands of beneficiary groups, particularly poor rural women.</p>	<ul style="list-style-type: none"> <li>▪ By the end of 5 years, participating institutions in the CG System and NARS have an increased capacity to use GA and PR methods and mainstream them in their own organizations.</li> <li>▪ The CG and NARS organizations who have made an attempt to mainstream gender analysis and participatory approaches have been able to better target the demands of beneficiary groups, particularly poor rural women.</li> <li>▪ A team of trainers, networked to support each other and provide training to others, is established.</li> <li>▪ Process of incorporating GA &amp; PR into organizational policies and practices well underway in participating CG Centers and partner institutions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitoring and evaluation system indicators for assessing capacity in GA and PR and organizational change.</li> <li>▪ Impact-assessment studies.</li> <li>▪ External review reports.</li> <li>▪ Reports of collaborating institutions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ CGIAR Centers and partner institutions willing to become involved in learning and change by committing staff and budget to using GA and PR methods, contributing to capacity development of their members, and making the necessary organizational adjustments for integrating such approaches into their organizations.</li> </ul>
<p><b>Project purpose</b> Improve the competencies of the CG System and collaborating institutions to mainstream the use of gender-sensitive participatory approaches in plant breeding, and natural-resource management research.</p>	<ul style="list-style-type: none"> <li>▪ Effective approaches developed and disseminated for mainstreaming GA and PR methods; methods recognized and understood by relevant senior management and staff; and being applied appropriately by at least 70% of institutions supported by PRGA Program research and capacity building at the end of 5 years.</li> <li>▪ Impact of mainstreaming GA and PR approaches documented in multiple studies.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitoring and evaluation system indicators for assessing capacity in GA and PR and organizational change.</li> <li>▪ PRGA Program publications; IARC annual reviews, reports and publications.</li> <li>▪ Published results of PRGA Program's impact studies.</li> <li>▪ Results of PRGA Program partnerships.</li> <li>▪ External review reports.</li> <li>▪ Reports of collaborating institutions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Donor commitment to the PRGA Program constant over the 5-year period.</li> <li>▪ IARCs and other institutions collaborating with the PRGA Program able to include results in their institution's reports and annual reviews.</li> <li>▪ Stakeholders willing to contribute actively to PRGA Program planning and evaluation.</li> </ul>

Narrative Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p><b>Output 1</b> Capacity developed for mainstreaming gender analysis and equitable participatory research in selected CG Centers and NARS</p> <p><b>Specific outputs:</b></p> <ol style="list-style-type: none"> <li>1. Strategic partnerships formed with organizations that enable the PRGA Program to have a major impact on: (a) integrating GA &amp; PR into agricultural and NRM research practice, and (b) enhancing methods and approaches that help improve the livelihoods of the very poor, particularly rural women.</li> </ol>	<ul style="list-style-type: none"> <li>At least 12 robust partnerships are formed with regional networks, prominent national partners, Challenge Programs that have (or have the potential to have) considerable impact on the rural poor by 2005.</li> <li>The nature of collaboration takes the form of (1) exploiting synergies in objectives, (2) taking opportunities to considerably expand the integration, or improve the quality of, the GA and PR practiced, or (3) incorporating GA and PR approaches where they would otherwise be absent or weakly applied.</li> <li>GA, PPB and PNRM Working Groups are engaged in the partnership process, as reflected in their work plans by 2005.</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring and evaluation by the PRGA Program.</li> <li>Collaborators' reports.</li> <li>PRGA Program's Annual Report and website.</li> </ul>	<ul style="list-style-type: none"> <li>Potential partner institutions are willing and interested to collaborate with the PRGA Program.</li> <li>With support from the PRGA Program, working groups are willing and interested to collaborate with different partners.</li> <li>Funding partners interested in supporting fruitful engagement with partners.</li> </ul>
<ol style="list-style-type: none"> <li>2. Development of effective methods and capacity for using GA and PR; organizational development (OD) concepts and skills for mainstreaming these approaches, and impact assessment (IA) of institutional learning and change (ILAC).</li> </ol>	<ul style="list-style-type: none"> <li>Field training manual for GA and PR, IA of ILAC, and OD developed and widely disseminated. This document should also provide a brief review of existing GA and PR, IA, and OD methods, and draw on best practices in developing guidelines by 2005.</li> <li>At least 3 methods workshops held for GA, PR, IA of ILAC, and OD, training a minimum of 40 participants in a variety of "best practice" approaches; and follow-up support extended to participants to enable them to continue change process in their respective institutions between 2004 and 2005.</li> </ul>	<ul style="list-style-type: none"> <li>Published field manual.</li> <li>Training reports.</li> <li>Collaborators' reports.</li> <li>PRGA Program's Annual Report and website.</li> <li>PRGA Program publications.</li> <li>Workshop proceedings.</li> </ul>	<ul style="list-style-type: none"> <li>Potential partner institutions are willing and interested to collaborate with the PRGA Program.</li> <li>Funding partners interested in supporting capacity building.</li> <li>IARCs and partner institutions willing to commit budget and human resources for internal capacity development.</li> </ul>
<ol style="list-style-type: none"> <li>3. Capacity of IARC and NARS scientists to use "best practice" for GA, PR, and IA of ILAC, and OD methods is considerably strengthened through training of trainers.</li> </ol>	<ul style="list-style-type: none"> <li>One training-of-trainers workshop held for GA, PR, and IA of ILAC, training a minimum of 8 trainers in a variety of "best practice" approaches; and follow-up support extended to trainers to enable them to provide training and technical support to scientists in their institutes in 2006.</li> <li>At least 2 manuals produced on "best practice" in GA, PR, IA of ILAC, and OD, based on workshop outcomes. One in 2004 and another in 2005.</li> </ul>	<ul style="list-style-type: none"> <li>Workshop proceedings.</li> <li>Manuals produced from workshop outcomes.</li> <li>PRGA Program's Annual Report and website.</li> <li>Collaborators' reports.</li> </ul>	<ul style="list-style-type: none"> <li>CG Centers and NARS interested in, and contributing budget and human resources to, participating in workshops and host local follow-up training.</li> </ul>

Narrative Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p>4. Evaluation studies are conducted to assess opportunities and constraints for mainstreaming GA &amp; PR, and a plan of action for implementation is developed.</p>	<ul style="list-style-type: none"> <li>At least 10 collaborative action-research activities undertaken through strategic partnerships between 2005 and 2006.</li> <li>Institutional analysis conducted with 10 partner institutions, and "best practices" analyzed and disseminated through publications by 2005.</li> <li>An internal working group is formed to spearhead organizational change and mainstream GA &amp; PR in each participating institution between 2005 and 2006.</li> <li>Mentoring and capacity building provided to partner institutions to guide and lend support to the mainstreaming process between 2004 and 2007.</li> </ul>	<ul style="list-style-type: none"> <li>PRGA Program publications.</li> <li>PhD dissertation.</li> <li>PRGA Program website.</li> <li>PRGA Program Annual Reports.</li> <li>Collaborators' reports.</li> <li>Mentor's reports.</li> </ul>	<ul style="list-style-type: none"> <li>CG Centers and NARS interested in, and contributing budget and human resources to, participating in workshops, and to learning and change process.</li> </ul>
<p>5. Assessment of effects of mainstreaming of GA &amp; PR approaches through organizational change.</p>	<ul style="list-style-type: none"> <li>Research results published and disseminated on the process of institutionalization through organizational change between 2005 and 2007.</li> </ul>	<ul style="list-style-type: none"> <li>Workshop proceedings.</li> <li>Manuals produced from workshop output.</li> <li>PRGA Program's Annual Report and website.</li> <li>Collaborators' reports.</li> </ul>	<ul style="list-style-type: none"> <li>CG Centers and NARS interested in, and contributing budget and human resources to, participating in workshops, and to host local follow-up training.</li> </ul>
<p><b>Output 2</b> Evidence of the impact of participatory research (PR) and gender analysis (GA) methods assessed, and methods developed to permit impact assessment (IA) results to be effectively integrated into research-for-development decision-making</p> <p><b>Specific outputs:</b> 1. Empirical studies on PR methods in PB and NRM assessed.</p>	<ul style="list-style-type: none"> <li>At least 3 collaborative impact studies are conducted, including an analysis of impact of different PR approaches under contrasting conditions—biophysical, institutional, and policy environments. Results are published as working documents and in professional journals between 2004 and 2007.</li> <li>Published results of 3 collaborative studies and impact of PR and GA methods disseminated to CGIAR liaison contacts, PNRM and PPB Working Groups, CGIAR libraries, and donor community by 2007.</li> <li>Three research briefs and PowerPoint presentations are prepared to highlight the recent evidence on IA of GA and PR in general, and they are widely disseminated to IARCs, NARS, and NGOs between 2005 and 2007.</li> <li>Two international workshops are conducted to disseminate results of empirical impact studies in 2005 and in 2007.</li> </ul>	<ul style="list-style-type: none"> <li>IA studies and methods published as PRGA working documents.</li> <li>PRGA Program's publications, briefs, presentations, peer-reviewed journal articles, books, website.</li> <li>PRGA Annual Reports, workshop proceedings.</li> </ul>	<ul style="list-style-type: none"> <li>IARCs and partner institutions willing to collaborate in IA.</li> <li>Funds available to conduct empirical studies.</li> </ul>

Narrative Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p>2. Tools and methods developed and disseminated to enable scientists to capture impact of products (i.e. crop technologies and management practices) and innovation processes, and integrate learning from IA into research planning and research priority-setting.</p>	<ul style="list-style-type: none"> <li>▪ Collaborative action research conducted with at least 4 CG and NARS partners to develop, test, and assess methods for improving information resulting from IA (product and process impacts), and assessing the contribution of IA to ILAC by 2007.</li> <li>▪ Discussion paper on IA for ILAC is developed and made available to IARCs, NARS, and NGOs by 2007.</li> <li>▪ Two IA capacity-development training and methods learning workshops are organized in 2005 and in 2006.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Published studies (PRGA working documents) on IA tools and methods, and assessments of their effectiveness in improving the usefulness of IA and stimulating organizational learning and change.</li> <li>▪ PRGA Program's Annual Reports and website.</li> <li>▪ Collaborators' reports.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Partner institutions interested and willing to participate in action research.</li> <li>▪ Funding partners interested in supporting these initiatives.</li> </ul>
<p><b>Output 3</b> Communication strategies for learning and change with partners</p> <p><b>Specific outputs:</b></p> <p>1. PRGA Program's interactive website launched and attracts a large and diverse range of users who not only read, but also contribute to the site's contents.</p>	<ul style="list-style-type: none"> <li>▪ Site developed that is friendly and accessible to users in developing countries with slow modem connections between 2004 and 2005.</li> <li>▪ Site contains a rich set of research findings and resources that are relevant to users, and is regularly updated between 2004 and 2007.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monthly website statistics: number of hits, visitor sessions, and downloads.</li> <li>▪ Monitoring and evaluation system of the PRGA Program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Users have the interest and time to contribute to website content.</li> <li>▪ A qualified individual (communications officer) is identified to manage and update the site's contents.</li> <li>▪ Donors interested in providing support for the technical development of the new site and the PRGA Program's capacity for communications.</li> </ul>
<p>2. Awareness of PRGA research results and other publications is considerably heightened, particularly among agricultural scientists.</p>	<ul style="list-style-type: none"> <li>▪ Systems in place to regularly publicize new GA and PR research results through PRGA-Info Listserv, website, and printed copies to authors, donors, and CGIAR libraries by 2004, and updated continuously till 2007.</li> <li>▪ PRGA Program's liaison contacts regularly forward publicity on PRGA to their Center scientists between 2004 and 2007.</li> <li>▪ New sources of distribution are identified by 2005.</li> <li>▪ Membership to PRGA-Info listserv doubles to 800 members between 2005 and 2007.</li> </ul>	<ul style="list-style-type: none"> <li>▪ PRGA-Info listserv membership (number and profession).</li> <li>▪ Monthly website statistics, particularly downloaded publications.</li> <li>▪ Monitoring and evaluation system of the PRGA Program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ PRGA Program has the capacity to strengthen relationships with its liaison contacts and ensure their commitment to disseminating information on GA and PR.</li> <li>▪ A qualified individual (communications officer) is identified to promote awareness.</li> <li>▪ Donors are interested in supporting the PRGA Program's capacity for communications.</li> </ul>
<p>3. Research results published in media favored by non-academic audiences and researchers not well acquainted with the PRGA field.</p>	<ul style="list-style-type: none"> <li>▪ Packaging of research results in 1- to 2-page brief forms, disseminated both as hard copy and electronic form between 2004 and 2007.</li> <li>▪ Mailing list built to include IARC and NARS scientists, NGO practitioners, civil society organizations, and policy-makers, between 2004 and 2007.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mailing list membership for briefs (numbers and professions).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Donors interested in supporting the PRGA Program's capacity for communications and mailing costs.</li> <li>▪ A qualified individual (communications officer) is identified to prepare briefs from PRGA Program's research publications.</li> </ul>

## Research and Development Highlights

### **Output 1: Mainstreaming—Capacity Developed for Mainstreaming Gender Analysis and Equitable Participatory Research in Selected CG Centers and NARS**

#### **Output targets**

1. Team of eight trainers, trained in a variety of “best practice” approaches, established and enabled to provide training and technical support on participatory research and gender analysis, and impact assessment for institutional learning and change, to scientists in their institutes.
2. At least 10 collaborative action-research activities undertaken through strategic partnerships.

#### **Training**

Meeting capacity development needs for participatory research (PR) and gender analysis (GA) is a critical component in mainstreaming these methodologies in agricultural research. One central component in ensuring that these methodologies are mainstreamed is to develop a cadre of trainers who can then serve as a resource to their own (and other) organizations. Several capacity-development initiatives were conducted in 2005 towards achieving the goal of developing a cadre of trained trainers in PR and GA methods. The activities were conducted in collaboration with CGIAR Centers and NARS, primarily in Africa and Asia.

The content of the capacity-development workshops varied according to needs and experience in PR and GA approaches of the participating organizations. As a result, some workshops were organized for more basic skills development, while others were targeted to those individuals and organizations that had already developed experience in the application of PR and GA methods in research, but were seeking to institutionalize these approaches in their research organizations. Towards meeting the needs of the latter group, the focus of the capacity-development initiatives was more exclusively on developing concepts and skills for becoming effective change agents, and for organizational development.

#### ***CIAT/Africa training on participatory research and gender analysis of AfNet:***

A workshop was conducted in collaboration with the International Center for Tropical Agriculture's Tropical Soil Biology and Fertility Institute (CIAT/TSBF) with the objective to develop the capacity of scientist members of the African Network for Soil Biology and Fertility (AfNet) in terms of their knowledge of and skill level in farmer participatory research (FPR) and scaling-up approaches and to enhance their ability to apply the FPR and scaling-up approaches in their research and development work.

Expected outcomes of the workshop were:

- Initial exposure to participatory research and scaling up/out, covering concepts, approaches, issues, methods and tools;
- Being able to communicate and relate more effectively and equitably with rural farmers;
- Thinking critically and reflectively about own role in research;

- Increasing the relevance and impact of research for integrated soil fertility management (ISFM), natural-resources management (NRM) and for the livelihoods of local farmers;
- Identifying and incorporating participatory research expertise and interdisciplinary teams for more effective research;
- Creating a community of learning among the scientists and an ongoing network of support;
- Identifying action plans and changes in personal approaches to research and interaction with farmers and stakeholders in the field;
- Applying these approaches with farmers in the field and reviewing the process.

This was the second training of combined AfNet scientists in FPR methods and scaling up. The 39 participants in the 2-week training were AfNet NRM scientists from West Africa (Burkina Faso, Ghana, Niger, Nigeria and Senegal), Central Africa (DR Congo), East Africa (Kenya, Tanzania and Uganda), Southern Africa (Botswana, Malawi, South Africa and Zimbabwe) and Madagascar. There were 15 women and 24 men scientists, both Anglophones and Francophones, whose individual disciplines included rangeland ecology, soil science, anthropology, agroforestry, sociology and economics. The training covered key concepts and tools for applying farmer participatory methods and approaches to NRM research. Participants applied the learning of participatory approaches directly with farmers in the Meru District of Kenya, during a field trip at the end of the first week.

**ASARECA workshop on Strategic Planning for Gender Analysis and Organization Change:** This workshop was the second in a series of workshops for members from eight country NARS in the ASARECA (Association for Strengthening Agricultural Research in Eastern and Central Africa) region, who are involved as change agents for mainstreaming gender analysis in their respective organizations under the PRGA-ASARECA project "Building Capacity in Gender Analysis and Mainstreaming in the NARS of ASARECA."

The first workshop was held in Nairobi in November 2004 (and is reported in the *PRGA Annual Report 2003-04*). Seventeen participants attended this second workshop, which was held at the campus of ILRI (International Livestock Research Institute), Addis Ababa, Ethiopia, July 4-15, 2005. The participants were from DR Congo, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. There will be a final Training for Trainers workshop in June 2006.

The workshop objectives were to:

- Assess existing gaps in ongoing research activities;
- Design strategies on how to move forward on:
  - (a) gender analysis,
  - (b) organization development for mainstreaming;
- Develop monitoring and evaluation indicators for mainstreaming;
- Develop an action plan for implementing organizational development.

The content and outcomes of the workshop are summarized in Appendix 8.

**Participatory plant breeding book:** One of the main activities suggested to achieve some of the objectives of the Participatory Plant Breeding (PPB) Working Group was to

publish a book on plant breeding with an emphasis on participatory methodology; this was also one of the PPB Working Group recommendations from the Rome consultation (2002). The various initiatives have been lumped together and a draft outline has been circulated. The book will be (co-)published by (with) FAO and is being edited by Salvatore Ceccarelli, Elcio Guimares, Eva Weltzien and P. Rajendran. By the end of 2005, some 18 of the projected 27 contributions had been received. The book is scheduled for publication during the second half of 2006. More details on the contents of the book are provided in Appendix 9.

**Other training activities (participatory plant breeding):** The PPB Working Group Facilitator visited to Eritrea in the first quarter of 2005, to support the participatory breeding program in that country, to train Eritrean scientists in interacting with farmers, and to contribute to the In-country Short-term Training Course on various technical aspects of PPB.

In June, 9 hours of lectures on PPB were given at the course “Exploiting Plant Adaptation and Biodiversity for Higher and More Stable Yields” organized jointly by the *Ministero Degli Affari Esteri – Istituto Agronomico per L’Oltremare* and the Crop and Grassland Service of FAO.

This was followed by a further visit to Eritrea to provide technical support visit to the National Agricultural Research Institute and the College of Agriculture of the University of Asmara, both of which are involved in a participatory breeding program on barley, wheat, *hanfets* and food legumes such as lentil, faba bean and chickpea.

In August, a workshop on “Recognition, Access, and Benefit Sharing in Participatory Plant Breeding” was held in Amman, Jordan, with the participation of 81 farmers (63 men and 18 women) and 28 scientists.

In the third quarter of the year, the PPB Working Group Facilitator presented a lecture on PPB at the training course on “Changes Agent in Rural Development” in Obregón, Sonora, Mexico. During that trip, he also visited and discussed future collaboration on PPB with Dr Fernando Galván Castillo, Director General de Agricultura, Gobierno de Guanajuato.

**Raising awareness of participatory plant breeding:** In the second quarter of 2005, a Consultative Workshop on Participatory Plant Breeding was conducted in Aleppo, Syria, with participants from 6 countries, who all joined the PPB mail list.

In July, the PPB Working Group Facilitator presented a lecture on PPB at a Workshop on “Barley research in Iran: priorities and strategies,” held at the Seed and Plant Improvement Institute (SPII) in Karaj, Iran.

### **Collaborative action research**

The PRGA Program, in collaboration with various partner institutions in the CGIAR and NARS, and NGOs, conducted several studies aimed at understanding organizational opportunities and constraints for mainstreaming gender-sensitive participatory research.

## **CGIAR Centers**

### *ILRI: Institutional assessment to identify opportunities and constraints for mainstreaming gender analysis in ILRI*

The concept of gender analysis is not new to ILRI. However, a strategy that ensures an engendered research agenda is weak or non-existent in the Center. A collaborative initiative between PRGA and ILRI was established with a view to making an inventory of past experiences, synthesizing lessons learned and assessing the capacity for GA. The collaboration is divided into two phases: phase one consists of the institutional assessment; phase two will comprise the development and implementation of an action plan to mainstream GA.

The specific targeted outputs (some already achieved) of the collaboration are:

- Development of a comprehensive survey questionnaire for institutional analysis
- Development of an action plan for implementation with support from ILRI management and senior leadership.

The proposed activities (in progress) for phase 1 are:

- Institutional diagnosis:
  - the analysis should focus on identifying the opportunities and constraints for mainstreaming GA;
  - assess the status of GA in the institute—includes emphasizing changes since the 1997 review (review of reports, survey, discussions with project leaders and key staff);
  - carry out a SWOT analysis—with a focus on why recommendations in 1997 were not adopted—and using the results to develop a draft work plan.
- Conduct a planning workshop in collaboration with the PRGA Program. The purpose of the workshop is to report research findings, which will form the basis of a plan of action to be developed.

A meeting was held in March 2005 with representatives of all ILRI research Themes to reflect on the role of PR and GA within ILRI. Methods for mainstreaming PR and GA were presented by the PRGA Program Coordinator. This was followed by an e-mail discussion among key ILRI scientists and PRGA on strategies for an institutional assessment of PR and GA. It was concluded that ILRI would commit one or two staff to implement the institutional analysis rather than a big team of scientists, due to scarcity of staff time. A communication strategy was developed ensuring engagement of a wide ILRI audience. A protocol for a gender audit and action plan for mainstreaming within ILRI was designed and an Memorandum of Understanding (MoU) signed between ILRI and PRGA.

### *ICRAF: The quality of participatory research and gender analysis at ICRAF*

Participatory research and farmer involvement are an integral part of ICRAF's work. The staff at ICRAF have a very positive attitude towards participatory research and farmer involvement in R&D. Most researchers have a strong commitment to involving farmers, making research relevant to their needs and achieving impact on the ground. This situation developed without a formal policy, strategy or conceptual model for participatory research.

ICRAF is rightly putting a great deal of emphasis on working with and through partners in order to ensure impacts and long-term sustainability, while staying focused on its relative strengths as an international research organization.

The implementation of participatory research and farmer involvement has been diverse in terms of methods, quality and outputs, mainly due to ICRAF's highly decentralized mode of working in conjunction with its somewhat weak internal learning and exchange mechanisms.

Participatory research has greatly contributed to an increased relevance and usefulness of research at ICRAF and, in some places, to empowering users to co-develop integrated resource management approaches, including the necessary policy changes.

Although staff generally have a similarly positive attitude towards gender issues, commitment and capabilities for a deeper integration into ICRAF's work are more variable than for participatory research.

Research with a more strategic use of participatory research and gender issues, aimed at the integration of local-level learning and the development of international public goods (IPGs) on a higher level, is rare at ICRAF. ICRAF should explore ways to more formally involve farmers in decision-making in the research process in order to ensure its institutional continuity and to increase its demand orientation. Currently, farmers' perspectives and needs play an important role in guiding ICRAF's work, but only informally through researchers who incorporate them into R&D design and implementation.

The success indicators being used by ICRAF only reflect the traditional scientific paradigm. Success indicators for ICRAF's wider goals—like relevance of research, usefulness for the target groups, empowerment of partners and target groups, policy dialog and poverty reduction—do not exist. Knowledge management, internal learning and exchange, and the development of IPGs through better systematization and synthesis of approaches seem to be the main challenges for ICRAF. To better capitalize on the various experiences made in the regions and in the Systemwide Programs it hosts, more and better mechanisms that foster sharing of experiences and learning processes should be developed.

Also on the strategic level, there was an absence of a conceptual framework for R&D which integrates local learning, participatory research, action research, empirical research, development and scaling up. This would be the basis for the development of a widely agreed policy and strategy which would clarify roles and priorities.

Social science capacity is becoming increasingly important in approaches to integrated NRM (INRM) and elsewhere. ICRAF should consider substantially increasing its limited capacity especially in the field of qualitative methods. This would enhance the depth of participatory research and of the use of gender-relevant information for project design and implementation. Increased social-science capacity would also be instrumental in better understanding of the social, institutional and political dimension of INRM and strengthen ICRAF's ability to develop IPGs through cross-country comparisons of different approaches.

*Urban Harvest/Sub-Saharan Africa Programme/International Potato Centre (CIP):  
mainstreaming gender analysis in the research process in CIP*

This activity is a follow up to an earlier collaboration between PRGA Program and Urban Harvest (CIP) in 2004, which resulted in an international workshop on "Women Feeding Cities: Gender Mainstreaming in Urban Agriculture and Urban Food Security" in Accra, Ghana. The proposed activity allows the opportunity for Urban Harvest and PRGA to develop capacity of mutual NARS partner institutions in Kenya (KARI), Uganda (NARO) and Ethiopia (EARO). Finally, the opportunity to integrate the learning into the research and policy-setting activities of CIP is enhanced through the coordination by the CIP Gender focal person, who is a principal investigator in the proposed project.

*Objectives:* The overall objective is to initiate a process of gender mainstreaming in CIP through institutional mechanisms as well as by piloting the approach in Sub-Saharan Africa through Urban Harvest, other CIP Divisions, and at least one NARI partner. The specific objectives are to:

1. Initiate institution-wide adoption of an approach to gender mainstreaming through internal e-debate and management support;
2. Complete pilot testing of the Urban Harvest Strategy for Gender Mainstreaming developed under the previous PRGA grant in 2004;
3. Complement the capacity-development activities of PRGA by working with selected officers of at least one Eastern African NARI on Urban Harvest and other CIP project activities dealing with PR and GA;
4. Strengthen the capacity of Urban Harvest and other CIP staff to support the work of partners on PR and GA activities, as a basis for a later internal capacity-building program in CIP.

*Outputs:*

1. At least two PR and GA field activities involving selected NARI personnel, Urban Harvest and CIP staff.
2. Prototype guidelines on application of PR and GA activities on urban and peri-urban agriculture and other CIP projects in Sub-Saharan Africa, based on the project activities.
3. Framework for application of GA in CIP's research program, based on CIP staff involvement in the development of prototype guidelines.

*Activities:*

1. Introduction of intention to undertake an institutional gender-mainstreaming approach by the Director General at the CIP Annual Meeting in 2005.
2. Selection of at least two PR and GA activities (at least one in the Urban Harvest program) in consultation with relevant partners including PRGA, the selected NARI and CIP staff.
3. Identification of the methods and tools to be employed, using available sources including CIP, RUAF and PRGA.
4. Adaptive testing of methods and tools in the field.
5. Incorporation of adapted PR and GA methods and approaches into the NARI and CIP-Urban Harvest country agendas through workshops and other meetings.
6. Reporting on field testing and workshop.
7. Drafting of guidelines by Urban Harvest, CIP and NARI participants.

8. Dissemination of guidelines to partners through electronic means, including through the CIP gender and diversity internal e-debate, and by posting presentation on the CIP, Urban Harvest and partners' websites.
9. Presentation of guidelines in CIP forums and recommendations for action.

*ICARDA: Assessment of capacity development for participatory research and gender analysis among ICARDA and its partner institutions*

Two main views of PR and GA approaches were apparent among ICARDA researchers and in the national programs visited. The first is a functional view, which perceives the main value of these approaches as related to improved efficiency, effectiveness and impact of research. Within this functional view, a prominent perception in ICARDA and among some national researchers and programs is that participatory approaches are a tool for promoting researcher-generated technologies. The second view, which values PR and GA as means of empowerment, is less prominent. This view sees gender-sensitive and equitable participatory approaches as a means to bring about positive social change and democratization through sharing of knowledge, decision-making and power. Researchers holding this view tend to see technology development as a component in the wider process of developing sustainable livelihoods, and view themselves as contributing one form of knowledge to the process, while playing a role in *facilitating the integration of other sources of knowledge*. Among national researchers, the functional view was more associated with programs that have less experience and expertise with participatory approaches.

Among ICARDA researchers, two main views exist about researcher roles within teams involved in PR and GA. Some researchers prefer a multidisciplinary mode in which research is handled from a variety of disciplinary perspectives. In practice this translates into assigning responsibility for participatory research to the social scientists in a team. Others prefer an interdisciplinary mode in which teams purposefully integrate concepts and methodologies from different disciplines and perspectives into a common framework. In practice this translates into shared responsibility for PR and GA.

There was a strong recognition among ICARDA and national-program researchers that the incorporation of gender perspectives is important in current commodity-oriented and NRM work and that this is a weak area.

Concerns about PR and GA approaches were mainly focused on how these can be better supported and developed. Key issues included *the following*.

*Institutional:* Many researchers would like to see more support from ICARDA management to "raise the flag" of PR and GA at ICARDA. This would allow the Center to respond to emerging opportunities around the CWANA (Central and West Asia and North Africa) region to link with and help empower other organizations (including an emerging NGO presence) that apply participatory approaches, in order to improve the livelihoods of farmers and agropastoralists, conserve biodiversity and address other key NRM issues.

*Methodological:* Despite the development and use of community and INRM approaches in several projects, some researchers voiced concern about a perceived lack of clear methodologies, particularly for participatory research related to complex NRM issues. Approaches for data collection and analysis within participatory research frameworks and better documentation in general were identified as needs. There is also some concern about

how to move from the use of participatory approaches to promote the supply of existing technologies to a more demand-driven mode of participatory technology development.

*Integration:* Many researchers would like to see more integration occurring across disciplines, projects and with other actors, including national programs, NGOs and the private sector. Participatory research and GA approaches and joint proposal and project development are seen as going “hand in hand” with integration.

*Capacity:* Many researchers feel that ICARDA does not have enough in-house expertise in participatory research, that more gender expertise is also needed, and that more women researchers are needed in order to reach women farmers and agropastoralists. A number of scientists have developed their own expertise in participatory research and are recognized as innovators by colleagues. A common perception is that the innovators do not have the time to help others develop capacity in participatory research. There is recognition by some researchers that some NARS have significant expertise and experience in PR and GA—especially in Africa (e.g. Ethiopia, Kenya, Morocco, Tunisia).

*Capacity development:* Researchers in projects applying participatory approaches recognize a need for capacity-building and articulated a number of strategies for going about this including: (1) raising the visibility of participatory research at ICARDA as a way to attract resources for capacity-building; (2) increasing exposure to PR and GA experiences elsewhere; (3) combining formal and informal mechanisms of capacity-building and using innovative approaches; (4) addressing gender staffing issues; (5) making sure capacity-building is well targeted; (6) using pilot projects with positive results to demonstrate the value of participatory research.

*Demand and specific needs for capacity development:* About half of the projects identified the need for capacity development through stakeholder consultation processes. The other projects based their decisions on technology adoption rates and on perceptions that knowledge of participatory approaches needed to be increased.

Most of the effort in capacity-building is being directed at NARS researchers and research assistants. Farmers and extension workers are also included in some of the capacity-development plans.

Although the inventory asked specifically about capacity-building related to PR and GA, some of the objectives of the planned capacity-building relate to more conventional research skills, such as capacity to conduct household and community surveys, assessing the impact of technologies, improving disease diagnosis and control, and decreasing the gap between yield potential and production in wheat fields. Some of the objectives are very general, such as getting farmers involved in pest management, improving technology adoption, reducing poverty; while others are much more specific, such as formulating plans and strategies for implementing PPB in crops with strategic importance for drought-prone areas. The very general objectives do not provide a strong basis for formulating well-designed capacity-development interventions.

The formats and approaches for capacity-building are diverse and in most cases there are plans to combine workshops with fieldwork, on-the-job training and other modalities, such as cross visits, individual mentoring and action research.

The content of training, which specifically mentioned participatory research, included:

- Theory and principles of participatory research
- Livelihoods approaches
- Tools for participatory research
- Design of participatory field trials and analysis of data
- Organization of meetings with farmers, sharing data with farmers
- Needs-based technology design
- Participatory learning processes
- Encouraging farmers' experimentation
- Communication/listening skills
- Skills for integrating local/outsider knowledge
- Facilitation skills
- Gender
- The action-research cycle
- Joint planning and partnerships with rural communities.

Most of the planned capacity-building was designed and facilitated by small teams, usually with some support from external consultants.

At least 320 people were trained and at least 70 days of formal training conducted in 2005 (not counting season-long farmer field schools).

In addition, most projects have identified additional capacity-building needs, which are not yet included in proposals or work plans.

*Lessons learned from capacity-development experience:* The current capacity-building strategy involves significant reliance on external consultants as trainers, combined with on-the-job training and informal mentoring in project settings. There are also a number of self-motivated individuals in ICARDA and among partner organizations who gained competence in participatory approaches through independent study and learning from practical experiences. A few of these individuals have gained prominence in ICARDA and beyond as pioneers and methodological innovators, and have developed the capacity of others (individuals and teams) through a combination of hands-on experience, mentoring and formal training. Whether done by training consultants or internal innovators, formal capacity-building has been organized mainly on a project basis with insufficient cross-project collaboration or communication.

Since 2002, ICARDA's Natural Resource Management Program (NRMP) has played a role in organizing seven formal workshops on participatory approaches. The Socioeconomics of Production Systems Project has facilitated in the organization of most of these workshops. Other significant capacity-building has been conducted by the barley PPB project, by the IPM project on sunn pest, by the PRODESUD project led by INRAT in Tunisia and by the Agrobiodiversity project in West Asia, the IRDEN Project, the WANA Benchmark Project, the CP in Karkheh River Basin in Iran, and the Mountain and Tillage projects in Morocco.

*Lessons learned from these capacity-building experiences include the following.*

- Follow-up to formal capacity-building is perceived as a weak point in many projects. Without follow-up it will be difficult for participants to translate what they have learned into good quality gender-sensitive/equitable participatory research processes. Unless the need for follow-up is acknowledged from the beginning, adequate funding for it may not be factored into budgets.
- Capacity-building needs to be more practice oriented. Both training consultants and participatory research innovators in the ICARDA network recommend a programmed and iterative local approach where training and mentoring is built into projects, and opportunities to discuss and reflect on experiences are a frequent and regular element of the process.

Although significant progress has been made, there is still a great deal of work to be done to internalize participatory approaches in ICARDA and among its partners. In addition to inadequate follow-up, main constraints include (1) the top-down culture in the region; (2) limited knowledge about participatory approaches among managers, researchers and extension staff; (3) disinterest or resistance among researchers and research assistants; (4) a transfer-of-technology culture; and (5) compartmentalized organizational structures. It would be also be helpful if more researchers realized that improving the efficiency and effectiveness of research by increasing stakeholder participation is compatible with more development- and empowerment-oriented views of participatory approaches.

Current capacity-building approaches could be improved by the following.

- Bringing together innovators identified from the different projects and countries to brainstorm ways to move participatory approaches forward and to build capacity for them. These could be the core group of trainers. They could play a key role in designing capacity-development, training trainers, accessing external skills as needed, and in monitoring and evaluation of capacity-development processes.
- Integrating experience from the diversity of projects that ICARDA and its partners are involved in, as raw material for training. A benefit of this would be that more people would gain a "broader" picture of the diversity of participatory approaches, the skills, tools and processes and principles common to all of them, and how different approaches suit different contexts. More people would gain familiarity with PR and GA experiences from the region.

*Strategies for future capacity development:* Three complementary strategies emerge from the context, demand, needs, lessons learned and views on how capacity-building can be improved.

1. Each project undertaking PR and GA should integrate capacity-development into its project cycle and strengthen follow-up, mentoring and reflection processes in order to make the learning process iterative and practice oriented.
2. Projects and programs undertaking PR and GA should form a resource group or network to support capacity-development across the board. The resource group to be composed of methodological innovators and facilitators identified by each project. These innovators and facilitators could become a core group of trainers for the ICARDA network of projects.
3. The projects undertaking PR and GA could contribute core funds or collaborate in resource-mobilization to engage a resource person who could coordinate the network of innovators, facilitators-cum-core trainers, help raise the visibility of the

PR and GA work undertaken by the ICARDA network, and facilitate linkages to other networks and resources. In addition, this person could conduct research related to methodology development for PR and GA or to monitoring, evaluation and impact assessment. He or she could help stimulate and support discourse in ICARDA and regionally on key issues related to PR and GA approaches, such as multidisciplinary and interdisciplinary models of integration and the relationship between the functional and empowerment objectives or functions of participatory approaches.

### ***Regional networks, NARS, NGOs and universities***

#### *CARE/Laos: Mapping gender mainstreaming:<sup>1</sup>*

The PRGA Program provided a US\$10,000 grant for the institutional assessment of CARE/Laos in 2004–2005. The eight-month study documented the organizational “best practices” for mainstreaming gender; identified the opportunities and constraints for mainstreaming; and identified key areas for further input such as capacity-development reformulation of organizational policy and incentives for champions.

The following recommendations were made.

1. Development of a ‘Gender End-state’ and accompanying Gender Strategy. This should be linked to existing organizational and programmatic documents and map out responsibilities for gender mainstreaming throughout the organization.
2. Put recruitment strategy and procedures in writing.
3. Include gender-responsive responsibilities in generic terms of reference and Annual Performance Appraisal format.
4. Continue and diversify formal internal gender training; basic awareness, advanced sector specific, gender planning, gender analysis.
5. Utilize creative methodologies to facilitate ongoing learning and discussion about gender and diversity issues in informal and existing formal work settings.
6. Continue to monitor wage-representation levels. Ensure these findings are shared regularly with staff.
7. Couple the rolling out of the new staff policy with ongoing awareness raising and discussion around issues such as sexual harassment; giving staff the space and opportunity to discuss and debate these relevant themes and issues.
8. Conduct a climate survey to gauge how comfortable staff are in their workplace.
9. Continue to seek ways to sustainably fund the Gender Equity and Diversity (GED) Officer position.
10. Include male middle management more fully in gender-related activities. This will limit feelings of exclusion and suspicion and help to strengthen the effectiveness of gender-mainstreaming efforts; especially on the project level.

In the past few years, CARE Laos has gained considerable ground in relation to gender mainstreaming. At the beginning of 2002, the Country Director considered time and resources spent on GED to be a waste—her stance has changed considerably and fortunately she is not alone in her conviction. She is joined by a team of staff from all levels of the organization; some of whom are officially aligned with the gender work, others who

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1. Summarized from Sharp K, 2005. *Mapping gender mainstreaming. The CARE Laos experience.* Report for PRGA Program by CARE International in Lao PDR.

take it upon themselves to “try on the gender hat.” This personal-level support is the strength of the gender movement at CARE Laos now. The organization is making huge strides in capturing this momentum in tangible forms and needs to continue along this path. Staff also have to be given the time and space to contextualize theory and decide how they will integrate it into their lives and work. While firmness and accountability is needed in relation to the organization's position on gender equality, aggression will have limited success in bringing the message home.

*China Agricultural University: Assessing participatory learning and action in China*

The proposed activities were reported in the *PRGA Annual Report 2003–04*. However, due to a requested extension from the China Agricultural University (CAU), the final Learning Workshop was postponed and is planned for February 2006. Hence, a more comprehensive assessment of the outcome of the activities, particularly the plan of action that will emerge from the learning workshop will be included in the next annual report.

The objectives of this research project were to:

- Develop a viable framework to accelerate learning
- Identify key areas for capacity-development
- Establish a network of innovators from the learning communities
- Develop a high-level community of partners that can support the network of innovators and enhance the learning alliance.

Five-step proposed activities:

- Step 1. Conduct survey to assess the quality of participation among existing members of the College of Rural Development (CORD) Network, May–June 2004
- Step 2. Analysis of survey results, July 2004
- Step 3. Conduct an institutional assessment of CORD to assess the opportunities and constraints for mainstreaming gender-sensitive participatory approaches, August–October 2004
- Step 4. Analysis of the institutional assessment, October–November 2004
- Step 5. Learning Workshop to develop a plan of action for mainstreaming participatory research in CAU and its partner institutions, February 2006.

*Eastern Himalayan Network: Institutionalizing gender-responsive R&D in agriculture and NRM through women's networks*

This is an ongoing collaboration between PRGA and NARS and NGOs from Bhutan, northeastern India (Sikkim, Nagaland, Meghalaya), Laos and Nepal. The project is based on action research to generate and document experiences from learning and change processes surrounding efforts to institutionalize participatory research and social/gender analysis (SA/GA) approaches. Action research will be conducted by highly motivated and committed organizational insiders identified as potential change agents. They will participate in a common action-research framework and form a cadre of researchers conducting analyses of their own organizations and those of national partners to assess various factors that either facilitate or hinder mainstreaming of participatory research and SA/GA approaches. Capacity-building to apply the research methodology is a central component of the project.

The development goal of this project is to use the knowledge generated through this research to assist poor rural women emerge from poverty by (a) more effectively managing

their own agricultural assets, i.e. labor, knowledge and other assets; (b) gaining access to agricultural and NRM technologies, services, inputs and markets; and (c) having more effective input into decision-making processes of agricultural and NRM organizations that can affect their livelihoods.

The specific objectives of the project are:

1. To build the capacities of rural women to meet their needs for food security and income-generating opportunities through local organizations and agro-enterprise development;
2. To support partner agricultural and NRM organizations to institutionalize a planning and delivery process that is more responsive to the needs of rural women through facilitating organizational change;
3. To generate a viable set of "good practices" for mainstreaming gender-sensitive participatory R&D approaches within selected organizations through action research and assessing the impacts of these methodologies for learning and change.

Research questions:

- What types of changes are required, or are sufficient, to mainstream participatory research and SA/GA approaches?
- What are the practices that are most effective for driving the process of organizational change from within and externally?
- What are the principle factors that motivate organizational management and members to change?
- How can a client group, such as that of rural women, affect the process of change within an organization?
- What will those changes entail? What would an organization that has institutionalized participatory research and SA/GA look like?
- What are the links between organizational change and poverty alleviation? Can organizational change engender positive outcomes for poor rural women in relation to increasing their access to and control over agriculture and natural resources?

A comprehensive planning workshop was conducted in October 2005 (details in Appendix 10) and a second workshop is planned for February 2006 in Nepal.

## **Output 2: Impact Assessment—Evidence of the Impact of Participatory Research and Gender Analysis Methods Assessed, and Methods Developed to Permit Impact-assessment Results to Be Effectively Integrated into Research-for-development Decision-making**

The PRGA Program's impact-assessment (IA) activities are typically conducted by establishing teams with one or more CG Centers in order to develop impact-assessment methods and tools, conduct empirical cases studies, and promote cross-Center learning through impact-assessment results.

### **Output targets**

1. Empirical studies on participatory research methods in plant breeding and natural-resource management assessed.
2. Tools and methods developed and disseminated to enable scientists to capture impact of products (i.e. crop technologies and management practices) and innovation processes, and integrate learning from impact assessment into research planning and research priority-setting.

### ***Empirical studies***

Providing compelling empirical evidence of the impacts of participatory research has been a major goal of the PRGA Program since its initiation. The number of IA documents that the Program has published over the past 5 years supports the conclusion that the Program and its partners have built a considerable body of evidence on impacts of participatory research and gender analysis. This year, five empirical impact studies were completed:

- a study covering 19 PR projects at CIMMYT
- a study on local farmer innovation committees (CIALs) in Colombia
- an assessment of farmer participatory cassava breeding in Brazil
- a study of 10 years of cassava-based natural-resource management (NRM) projects in Vietnam and Thailand
- a study of the institutional impact of the Asian Cassava Participatory Research and Extension Project.

***Participatory research projects at the International Maize and Wheat Improvement Center (CIMMYT)<sup>2</sup>:*** CIMMYT is an organization devoted to the development of improved maize and wheat germplasm for the developing world, with a increasing emphasis on addressing the needs of the poor. CIMMYT is increasingly using participatory research as a component of its research portfolio. However, there had not been any systematic assessment of the extent to which participatory research, its methods and approaches have been used, and how they are perceived by the scientists who rely on them—both in terms of their benefits and limitations—with a view to critically reflecting on how participatory research can make an even better contribution to CIMMYT's mission. Thus, a study was

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2. Summarized from: Lilja N; Bellon M, *in press. Participatory Research Projects at the International Maize and Wheat Improvement Center (CIMMYT)*. PRGA Program, Cali, Colombia, and CIMMYT, Mexico, DF. 43p. *In press*.

made of the use of participatory methods and approaches in the research process from the perspective of the CIMMYT scientists who use them.

The purpose of the study was to take a "broad look" at these issues and to record: (1) what is considered participatory research; (2) how it is implemented across CIMMYT projects; and (3) some of the lessons learned by scientists involved in these projects. The study had five broad research questions formulated after a review of the relevant literature:

1. What are the main characteristics of the projects using participatory research approaches?
2. What types of participatory research approach do the projects use?
3. What are the researchers' opinions about the usefulness of participatory research methods and what are their skills in participatory methods?
4. Is the institutional and external environment supporting or constraining participatory research at CIMMYT?
5. What are the benefits and costs of participatory research?

Eighteen CIMMYT scientists were surveyed, who reported on 19 projects that they considered to have at least a participatory component. Thus, the projects included in the study were self-selected. The range of the study was broad, since there was great variation in the characteristics and types of participatory research among the projects reported. The survey instrument allowed characterization of the self-defined participatory research projects, but did not allow further critical analysis of the quality or the appropriateness of the research methods applied. Neither did it provide an objective impact assessment of their use. Although ideally one might want to link the use of participatory research to specific impacts on the livelihoods of farmers, this process is complex and requires intermediate steps. One fundamental step is to understand and document how participatory research is perceived and used by scientists within the organizational context in which they work, and this was the scope of the present study. Thus, the main use of these results is for institutional review and learning purposes. The main findings of the study are summarized below.

#### *Characteristics of participatory projects*

Among the CIMMYT projects with participatory components, the most commonly cited goal was that of increasing productivity (broadly defined, but especially aiming for improved performance under various stresses). The main motivation for using participatory methods was to understand farmers' preferences better. Primary beneficiaries of CIMMYT participatory research projects are marginal farmers, but beneficiaries are not generally differentiated by gender. An "average" CIMMYT participatory research project lasts for less than 5 years, has an annual budget of less than US\$100,000, works in Asia or Africa, and has six project sites, involving 400 farmers and eight scientists. That said, there is a great range and diversity in the self-defined participatory projects at CIMMYT.

CIMMYT participatory research projects can be viewed as collaborative activities that bring together the scientific and local knowledge and efforts of all stakeholders to improve upon the status quo. The biggest obstacle to participatory research is that beneficiaries are frequently thought of as objects of research and not as actors. Of the 19 projects surveyed, 15 targeted farmers, but only one specified multiple beneficiaries. Given that nearly three-quarters of the projects stated that the motivation for stakeholder participation was to understand farmers' preferences and constraints better, this lack of recognition of multiple beneficiaries (especially the scientists) may be due to the conventional notion of "project

beneficiaries" seen as synonymous with "end-users of the technology," with less emphasis placed on benefits to scientists.

It is a well-documented fact in many empirical studies that most agricultural innovations affect men and women differently. There was a noticeable absence of specific gender focus in the survey results. This does not necessarily imply exclusion of gender concerns by the projects in actual research activities, only the lack of disaggregation of beneficiaries by gender. Only one project targeted women and children specifically. One other project had used a "whole family training" approach, which included wife and another adult female member access to project activities.

#### *Type of participatory research approach used*

The type of participatory research conducted influences the outcome of the participatory research process. The type of participatory research is shaped by the stage at which stakeholder involvement takes place and the types of activities stakeholders are involved in. The type of participatory research used is a direct result of the motivation to involve (or the objective of involving) stakeholders in the research—that is, whether the project has primarily functional or empowering objectives.

Functional and empowering objectives are not mutually exclusive, but (in any particular project) emphasis is typically placed more on one or the other. In relation to the development of agricultural technologies and information, empowering can mean giving farmers the ability to take more control of the technology options available to them and make informed decisions about their farming practices. Participatory *approaches* with either functional or empowering objectives can have both functional and empowering types of *outcomes* associated with them. In economic development, the empowering approach focuses on mobilizing the self-help efforts of the poor and is less often associated with the use of a single type of participatory activity or tool.

In this survey, half of the projects applied participatory tools either in priority-setting only or in technology testing alone, while the other half used participatory tools in more than one stage of the research process. The majority of the projects (15 out of 19) used a single participatory tool. These two facts combined (stage and methods) can be used to characterize the types of participatory research that the projects applied, which will affect the outcomes of the research processes. The majority of CIMMYT projects surveyed appeared to be associated with functional types of participatory methods, but we do not have the necessary information to directly link the use of methods to types of outcomes.

The majority (three-quarters) of the projects said that their primary reason for involving stakeholder participation was to increase the relevance of research and to bring about more demand-driven research and extension by better understanding of farmer preferences and constraints, and to use farmer knowledge in technology evaluation and development. This can be interpreted as a functional approach with emphasis on co-learning. A small proportion (one-quarter) of the projects said that their main motivation for including participatory approaches was to involve stakeholders in technology dissemination and to improve awareness and hence the reach of technology. Our interpretation is that these projects also have a functional, but more action-oriented approach, where emphasis is placed on translating new knowledge into improved farmer practice through improved participatory dissemination. Both of these functionally motivated approaches may also lead to greater farmer empowerment.

### *Quality of science in participatory research*

In understanding the potential advantages of participatory approaches, there are also methodological issues in blending scientific and local knowledge that need to be carefully considered. Rather surprisingly, none of the scientists in the survey said that participatory research would be best suited for all aspects of the research continuum; about two-thirds said it was best suited for technology evaluation, testing and dissemination, and one-third said the participatory research approach was best suited for *priority-setting* activities. The answers may reflect two opposing attitudes and situations: one in which research has identified what is believed to be a set of suitable technology options and interaction with farmers is believed to increase adoption (farmers play a role in selecting the best technology options from those offered and, in addition, farmers need to learn about the options through *experimental learning* and through farmer-to-farmer dissemination); the other situation may reflect the opinion that farmers have a key role in identifying and defining the research priorities (for example, the types of crops and stresses that varietal improvement should address), but a lesser role in developing the technology options.

Most participatory research at CIMMYT has a functional objective, aimed basically at either increasing the efficiency of the research process in terms of generating “better” research products, or at fostering the diffusion of these products by enhancing the awareness and knowledge of potential beneficiaries about them. For example, as the physical and economic resource bases of different groups necessitate tailored research, the functional approaches allow scientists to direct their research according to the needs of the specific groups of farmers and specific environments. Farmers can assure scientists that they are assessing trade-offs among variety traits and management practices “correctly and under real-life conditions,” which ensures greater success of adoption of innovation by the farmers.

More empowering objectives to participatory research would aim at increasing farmer knowledge and skills so that farmers can participate more fully in the collaborative breeding efforts and be better at their own personal efforts. Empowering approaches to participatory research are not merely about increasing farmers' awareness. As most CIMMYT projects are concerned with understanding farmer preferences, there is less focus on targeting equity concerns and skill-building of participants. For example, many scientists felt at the onset of the project that farmers needed to learn information about new varieties and management practices. The apparent emphasis on building farmers' awareness about new varieties and management practices is understandable if we think that the limiting factor in scientist-farmer exchange is the farmers' (limited) knowledge base. Thus, in situations such as marginal areas and in small-holder farming, exposure to new genotypes and best-bet management options would be a first requirement for effective interactions.

The fact that the majority of the respondents said that farmers needed to learn more information could be viewed in two different contexts. On one hand, it may reflect the prior understanding of the farmers' specific needs and constraints for improved varieties, and management and resource-conservation techniques. On the other hand, it may reflect some biases on the scientists' behalf about how the formal-sector research already has fully identified solutions to the specific farmer problems and constraints—four-fifths of the respondents said that it was determined by the start of the projects that farmers needed more information.

Participatory research has its origins in qualitative methods, and the use of these methods is most often associated with social scientists. Interestingly, the majority (13 out of

18) of the respondents who answered the survey were biophysical scientists. The survey method did not include assessment of scientists' competence in participatory methods, as doing so would have required more detailed individual interviews and field observations. Instead, we asked about their "comfort level" in using the participatory methods—this should not be understood as a proxy for competence in the use of participatory methods. There was a very high confidence level in the use of participatory methods, yet hardly any of the respondents had any training in participatory research. Some of the answers reflected the common attitude that the use of participatory methods is "common sense," requires little or no formal training, and that the use of participatory methods is easy for "people-oriented" researchers.

There seems to be a positive perception of participatory research among the majority of its practitioners across the Center. The majority considered participatory methods most appropriate for technology and varietal evaluation and testing. Rather surprisingly, although there is apparent comfort in extending the methods combined with a perception that colleagues at CIMMYT appreciate participatory research, the majority of scientists said that they had never been asked to advise on participatory research. This suggests that there is a lack of communication and sharing of knowledge and experience among them. This may be problematic since most scientists are self-taught in participatory research methodology, and even though they feel comfortable using the methods after one year, and with extending the methods to others after two years, they do not seem to have any formal training on the methods and approaches of participatory research, hence in many cases they may be "reinventing the wheel," or their work may not be as efficient as it could be. Furthermore, this suggests a lack of institutional space to share and learn from the extensive and valuable experience being generated by CIMMYT scientists in this respect.

Three facets of CIMMYT participatory research are expected to further foster and promote peer acceptance of new approaches and to allow for faster scaling up in research efforts, namely, that biophysical scientists (and not just social scientists) are involved in participatory projects, that there seems to be an interdisciplinary approach in most projects, and because these projects seem rather well connected to the pre-existing network of scientists and other projects.

#### *Institutional issues*

In agricultural research, participatory methods are used to enhance ongoing activities. They establish research partnerships to develop more relevant technology by complementing existing farmer experimentation and enhancing farmers' ability to use and understand experimental methods used by professional researchers. The cornerstone of participatory research is that farmers actively search for and evaluate ideas and options. Limitations and challenges to these objectives are: (1) most programs are largely concerned with evaluating, adapting and extending technologies developed previously by the formal research system—this is what our results show too; and (2) perceived problems associated with reduced researcher control and most evident in on-farm trial activities. There is no clear, broad trend towards client participation in the testing stages of the research process.

This model of participation (i.e. farmers actively involved in research) is often set as an "ideal type." The evidence from this study suggests that while information flows go both ways between scientists and farmers, the dominant information flow is still top-down or researcher directed. This implies that participatory research (with its two-way information

flows) conducted within a linear, "pipeline" model of innovation still has a predominantly supply-driven agenda.

In short, it is unrealistic to think that these two-way information flows will occur without structural adjustments in the institution. If they do, they will most likely be limited to an individual research experience (in the field) where the researcher has capacity or experience in participatory approaches to facilitate such a process. Additionally, any research process can stimulate some sort of information feedback from end-users, but that in itself does not constitute "participation" in the sense implied by participatory research.

The survey results show limited interaction among CIMMYT participatory projects. One can speculate on reasons for limited advice-seeking by colleagues: one possible explanation is that there is sometimes a tendency for individual scientists or projects to "trademark" their participatory methodology with an excessive focus on participatory terminology. This is of course good as it shows a sense of ownership regarding the production of participatory research methodologies that project scientists have developed, but it can be problematic if it leads to technical solutions being seen as a separate, isolated research effort.

#### *Benefits and costs*

The scientists' perceptions of what differences participation made in the research process or outputs are rather "outcomes," and these are compared with the expected outcomes had participation not been used. At least conceptually, these perceptions provide a sort of counterfactual regarding participation. Box 1 presents a synthesis of the outcomes derived from these perceptions—these clearly are not impacts, since the links to changes in the beneficiaries' livelihoods have not been documented or measured; however, they are fundamental, being a necessary but not sufficient condition for impact.

#### **Box 1: Outcomes associated with participatory research at CIMMYT**

- Increased diversity
- Demonstrated the value of diverse maize landraces to farmers
- Demonstrated the farmers' preference for open-pollinated varieties over hybrids, particularly under stress conditions
- Provided farmers with access to seed and promoted faster adoption
- Made farmers aware of new varieties and fostered faster adoption
- Provided farmers with varieties with valued traits
- Increased the ability of farmers to evaluate resource-conserving technologies and assess their benefits
- Minimized the error of developing varieties that farmers do not want (or with traits they do not value) or are not relevant for their preferences and circumstances
- Developed research products (varieties) that are relevant for users that value multiple characteristics
- Understood the constraints faced by farmers; established baselines to assess impacts
- Made the research process more efficient by identifying pathways to reach farmers
- Understood the context in which new technology has to operate
- Allocated technologies to appropriate niches in the farming system
- Provided farmers with information from other stakeholders that have impact on their lives.

The identified outcomes can also be the subject of a more rigorous study and of monitoring, but this would be a next step. Furthermore, since the outcomes have been identified, it may be easier to make predictions about the potential impacts that may be associated with them. These predictions could then form the basis for more rigorous impact analyses that link research process and outputs to livelihood changes. This in turn could be the basis for a more in-depth quantitative study on the impact of participatory research at CIMMYT. Most importantly, such a study would also have to address the perceptions of the outcome of participation from the perspectives of the beneficiaries and other stakeholders, and would require additional work and funds.

The benefits of the research project are evaluated in comparison to the costs of the research. The survey results show that there is also a diversity of views about the costs among practitioners: some considered that there were additional costs, while others did not. Furthermore, it is clear that in many cases comparing the costs of participatory research with those of more conventional research is difficult, because both approaches may be so different that it is not really meaningful to compare them. In any case, it seems that from the perspectives of CIMMYT practitioners, participatory research may not entail additional costs or, if it does, the results justify the expense.

It is also difficult to compare the costs of participatory research with those of “conventional” research, because a research process is often shaped by both conventional and participatory activities. It would be erroneous simply to conclude that participatory research is more costly than conventional research. In reality, the share of the overhead and personnel costs often remains fixed, and operations are adjusted according to the availability of funds. Participatory research usually affects the operational costs the most—and not always by increasing them, especially if it replaces some other activities. If participatory research is implemented as an add-on activity, then the research costs are likely to increase.

Nearly half of the survey responses on the impact of participatory research provided examples of impact of variety and technology evaluation and showed the improvement in understanding of farmers’ preferences, experiences, needs, social and production constraints, as well as solutions they may offer to the collaborative research process. The results imply success in shortening the time-lag between technology development and its adoption, which has important implications to overall returns to research investment.

Examples of the impact of surveys (11 out of 27) (elicitation of farmer preferences and knowledge), and diagnostic needs assessment show the benefits of broader socio-economic information, and how it can help determine who the actual beneficiaries will be in the various social strata or resource-dependent groups, and what the specific preferences and constraints are for each. Such information can also help reveal, in advance, the potential unintended (negative and positive) impacts of a project on different groups within the project area.

### *Conclusions*

The amount of financial resources associated with what is claimed to be participatory research is rather surprising, approximately US\$9 million per year. While this amount refers to the research that has participatory components and may not reflect the specific resources invested in participatory research activities, this level of investment clearly indicates that participatory research is more than just a marginal activity in the Center. CIMMYT may need to consider investing additional resources to create a more conducive environment for its

scientists to share their experiences and learn from each other, and in doing so add value to this research endeavor, or else participatory research may become a meaningless, catch-all term used for data collection or the analytical phase of research. Furthermore, this may also require more investment in documenting the outcomes and impacts of participatory research at CIMMYT. We believe that, by identifying the projects and the outcomes associated with participation, the research reported here is laying the groundwork for further advances in this area.

**Assessing impacts of farmer participatory research approaches: A case study of local agricultural research committees in Colombia<sup>3</sup>:** Because they incorporate user perspectives in the research process, it is often claimed that farmer participatory research (FPR) approaches make research more oriented towards the needs of the poor, therefore leading to greater impact on poverty alleviation. The premise is that user participation will lead to more efficient and effective design and targeting of technologies. This may reduce diffusion time, increase adoption and help to ensure that the intended beneficiaries are reached with technologies that are appropriate to their particular circumstances, needs and priorities. However, within the area of participatory research there are many types and degrees of participation with very different implications for the benefits and costs of research. Whether FPR makes research more pro-poor is essentially an empirical question. Therefore, to understand the relationship between FPR and poverty alleviation better, empirical evidence is needed on what impacts participatory methods have had on poverty in the context of specific projects and participatory methodologies. Here we present preliminary results from a study aimed at beginning to fill this gap by examining the impact of one particular method of incorporating farmer participation: Local Agricultural Research Committees.

Since 1992, the Participatory Research in Agriculture (IPRA) Project at the International Centre for Tropical Agriculture (CIAT) has promoted the formation of community-based research services called Local Agricultural Research Committees (CIALs). Our study sought to evaluate the changes in the livelihoods of the farmers, and their communities, that are attributable to the CIAL methodology. The CIAL methodology was developed at CIAT with the goal of increasing the efficiency of the agricultural research and technology development system by integrating farmers better into the process. The study assessed the effectiveness of the CIAL methodology, the extent to which the problems addressed by the CIALs are relevant to the communities, and the benefits of CIALs to their members as well as to the communities in terms of the development of appropriate technologies and who benefits from the innovations. It also examined how farmer participation in the agricultural research process affected the process itself, as well as the specific communities and individuals involved. Particular attention was paid to how CIALs as institutional innovations affect the human, social and other capital assets available to individuals and communities, and what implications these impacts have for livelihood outcomes. The study involved 13 CIALs: focus-group discussions were held in all of them and formal interviews were conducted in six of them. In addition, four rural communities without CIALs (*comparative communities*) were also surveyed.

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3. Summarized from: Kaaria S; Lilja N; Sandoval V; Garcia J; Hincapié F; Sanchez F. Assessing impacts of farmer participatory research approaches: A case study of local agricultural research committees in Colombia. Paper presented at the Impact Assessment Workshop, October 19–21, 2005, CIMMYT, Mexico, DF.

Preliminary results showed that there are significant social and human capital benefits for CIAL members. CIAL members indicated that they had gained more knowledge about agriculture, were experimenting with new technology, and were seen as agricultural experts and advisors in the community. They had also improved their communication and leadership skills, and had increased relationships with neighbors and with outside institutions. CIAL members experimented more with new crops, had learned other new skills, and had higher levels of commitment to their communities, thereby leading to a higher level of community participation. In communities where the CIAL had identified new technology and converted into commercial seed producers, the communities benefited by having easy access to new technology (e.g. new varieties, such as early maturing maize and new bean varieties). The communities also consulted CIAL members when they had agricultural problems.

***Participatory cassava breeding in northeast Brazil: Who adopts and why?***<sup>4</sup>: This study examined the participatory research methodology implemented by a cassava-breeding project in four communities of northeast Brazil over an 8-year period. We assessed the soundness of the project methodology by testing whether participant farmers were representative of the farming communities in which the project was implemented. We also investigated the adoption potential of the cassava varieties developed in the project, benefits perceived to have accrued from adoption, and the time spent on project activities by the participating farmers.

A survey, conducted in April 2002, consisted of 30 questions grouped into four general areas of inquiry:

- farmer characteristics and household agricultural activities, production and income;
- uses of cassava, percentage of production used for consumption and for sale, varietal preferences, varieties grown, experimented with and those abandoned, planting material sources, willingness to pay for planting material of new varieties;
- involvement in participatory trials and other agricultural research, costs of participation;
- changes in production and income from new varieties.

Four communities were selected for this study: Lagoa do Barro and Tanquinho in the municipality of Maniacu, southwest Bahia; Cajuero dos Potes in the municipality of Simao Diaz, and Muniz in the municipality of Aquidabá, both in the state of Sergipe. All four communities are principally cassava producers. In each of the four communities, an average of 30 farmers was interviewed, with a total sample size of 122.

The results showed that the representativity was not a factor in the selection of the project participants at the initiation of the project. (This did not make much of a difference in the North Coast region of Colombia—where the participatory plant breeding approach was first implemented—because the different stakeholders who participated in the project happened to select the same varieties.) The wealth ranking of the four study communities showed that the project did not privilege any specific wealth category in any of the

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4. Summarized from: Saad N; Lilja N; Fukuda W, *in press*. Participatory cassava breeding in Northeast Brazil: Who adopts the new varieties and why? *Working Document No. 24*. PRGA Program, Cali, Colombia. 27p. *In press*.

communities or across most of the wealth categories—that is, both participant and non-participant poor, middle-income and wealthy were equally represented in proportion to the community's overall wealth distribution. Our results indicated that participant farmers were representative of their communities in most of the characteristics measured. The only significant differences between the two groups were that the participant farmers (as compared with non-participants) tended to plant more area to maize, to derive a greater percentage of their income from processed cassava, and to derive a larger share of income from the sale of crops other than cassava. However, the methodology overlooked women, who did not participate in the project and who were not represented in the survey, but who do play an important part in the selection of the cassava varieties that they use in the production of cassava dumplings. This is an important economic activity for women in the region, and is directly linked to cassava starch quality. Had they participated in the project, perhaps they would have selected a cassava variety that suited their specific needs for high-quality starch.

The results indicated a potentially high degree of adoption after 4 years of project activities: nearly half of the participating farmers initially adopted (tried and continued to cultivate) the experimental varieties they had seen in the participatory trials, and about 10% of the non-participant farmers did so. On the other hand, similar numbers of farmers tried some of the experimental varieties and discontinued their use. The interest in experimental varieties was also shown in the fact that many farmers (44%) were willing to pay for cassava planting material, which is not a typical practice in the region. Both the demonstrated willingness to experiment with varieties and the willingness to pay for the planting material highlight the acute need for new clean planting material for cassava in the region.

Despite the rather high adoption rate of the experimental cassava clones, farmers did not report large increases in cassava production or cassava revenue. These results should be viewed in the context of the historical trend of declining cassava yields in the region: the fact that most participants and non-participants reported no change in cassava yield may imply the success of adoption of new cassava clones in maintaining stable yields. The fact that participants also reported increased time spent on cassava production may be due to the area expansion of cassava caused by project influence or time spent on project activities—since the project did not introduce any labor-saving techniques, a rise in production necessarily means a rise in amount of time required to tend the crop.

#### ***Impact of participatory natural-resource management research in cassava-based cropping systems in Vietnam and Thailand <sup>5</sup>:***

##### *Background and research overview*

Between 1994 and 2003, CIAT, in collaboration with national agricultural research (NARS) partners in Thailand and Vietnam, implemented a Nippon Foundation-funded project entitled “Improving the Sustainability of Cassava-based Cropping Systems in Asia.” The purpose of the project was to address the problem of the observed widespread non-adoption of soil conservation and fertility management technologies in cassava production in Asia. In

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5. Summary taken from: Consultative Group on International Agricultural Research, Science Council, Standing Panel on Impact Assessment (SPIA), 2005. Natural Resources Management Research Impacts: Evidence from the CGIAR (Draft Report). CGIAR Science Council Secretariat, December 2005. Full report: Dalton T; Lilja N; Johnson N; Howeler R, 2005. Impact of participatory natural resource management research in cassava-based cropping systems in Vietnam and Thailand. Working Document No. 23 (revised). PRGA Program, Cali, Colombia. 27p.

addition to conservation technologies (such as contour lines and hedgerows) and management technologies (including intercropping, use of manure and mineral fertilizer), genetic improvement technologies (improved cassava varieties) were also included in the project. Hence, the project was conducting applied, adaptive research on existing NRM technologies and principles where adoption by farmers was low. The project was working with farmers in selected villages. The farmer participatory research (FPR) methodology included on-farm experiments to identify, test and adjust promising natural-resource conservation and cassava productivity enhancement technologies.

The impact study was conducted in 2003 in Vietnam and Thailand. Data were collected from a total of 800 farm households. In each country, eight villages were selected, i.e. four project and four control villages. In the project villages, CIAT and their (respective) NARS partner had implemented FPR activities. As control, nearby villages were chosen that had similar natural-resource and socio-economic conditions. In addition, the national extension services were engaged in promoting technology and advising farmers in the control villages according to their standard operating procedure. Thus, the control villages provided a counterfactual for the FPR component of the project. Data were collected following the focus-group methodology—focus-group participants completed survey forms that contained questions on wealth, socio-economic status and details of cassava production inputs, outputs and technologies. Cassava area and cassava yields were elicited through recall questions depicting the before and after project situation in terms of farmer performance.

#### *Impact assessment framework*

Household theory served as the general conceptual framework to measure impacts of technology adoption and knowledge. A household utility function with a multi-product production function including commodity and non-commodity outputs was formulated. Knowledge was included as a stock resource to be enhanced by project participation. Model estimation was only possible in a reduced form as the parameters of the equations are not directly observable: first, a participation dummy was used as a proxy for knowledge; second, the impact of participation on non-commodity outputs was captured through the adoption of soil-conservation practices; and third, the wage effect was measured by separating the productivity impact of technology variables from the knowledge variable, i.e. the participation dummy.

#### *Adoption and outcome*

Analysis showed that the overall level of adoption was high for varieties and fertilizer, but lower for soil-conservation practices including intercropping. Differences between participants and non-participants are more pronounced for conservation practices than for varieties and fertilizer. Adoption levels differed between Thailand and Vietnam, with the latter having lower levels of adoption. For example, only about half of the project participants in Vietnam adopt improved varieties, while there was 100% adoption by project participants in Thailand. Also the differences between participants and non-participants were smaller in Thailand.

Results of the impact analysis using simultaneous equations systems showed that the cassava technologies themselves and knowledge as measured by project participation significantly affected behavioral and productivity variables. In short, the following outcomes could be summarized:

- Adoption of improved cassava varieties significantly contributed to expansion of cassava area and increased cassava yields;
- Farmers with larger cassava areas tended to expand less than farmers with smaller areas;
- Adoption of contour-ridging led to smaller area expansions for both cassava and total farm land area;
- Female household heads tended to expand their area more than did males;
- Adoption of hedgerows positively affected cassava yields;
- There were significant positive spillover effects from participants to non-participants in project villages;
- Yield gains were significantly higher in Vietnam than in Thailand;
- Project participation had a significant effect on yield, indicating that participation in technology development and testing may improve managerial capacity, and knowledge can lead to more effective use of cassava technology, although the true relationship remains in a "black box."

#### *Welfare analysis and rate of return*

Costs included research-and-development (R&D) costs of CIAT and the NARS, as well as farmers' costs of technology adoption, including investment, variable material costs and labor. The total R&D and adoption costs of over the 10-year period from 1994 to 2003 were US\$3.96 million. Costs were spread evenly over the lifespan of the project.

The project benefits were derived from the total yield effects as estimated in the simultaneous equation system aggregating the technology and knowledge effects and weighted with adoption rates at village level. The resulting shift in cassava output was then valued at domestic market prices for the year 2003. To estimate the cumulative benefits over the 10-year project period, the usual logistic adoption curve was used, assuming that annual benefits are a fraction of the 2003 figure equivalent to the number of farmers trained by year. Based on these data, the internal rate of return (IRR) was calculated at 41.2%. Various scenario analyses revealed that the rate of return of the R&D investment was indeed a safe bet considering that the most conservative scenarios still yielded an IRR of 20%. Since the IRR does not include the environmental benefits attributable to the project from the abatement of soil degradation, the calculated IRR is most likely an underestimate.

#### *Lessons learned*

The CIAT case study is an example of an integrated NRM type of project that focused on the complementarities between NRM and genetic improvement research. The study is unique as it provides a methodology that can be applied to separate the technology effects from the knowledge effects to be assumed from FPR. Unfortunately, no knowledge data were collected (e.g. through knowledge tests) for participants and non-participants before and after project implementation. A baseline survey would have allowed using a classic difference-in-difference model. This would have provided a better understanding of the mechanisms through which FPR can change behavior and increase productivity. Finally, the rate of return was limited to a financial analysis, thus ignoring differences between domestic and world prices. Including an attempt to value the expected environmental effects of the CIAT project would have made the case more valuable.

Furthermore, the study leaves open the question of the economics of scaling up the FPR approach. Since the R&D investment is relatively small and the yield effects in project villages are high, we are getting a good rate of return. But does this justify recommending

that extension services in Thailand and Vietnam should adopt the FPR approach on a wide scale? We know little about the quality of the FPR method if there is no external project input, i.e. if CIAT support comes to an end.

Overall, the case study demonstrates the need to plan for *ex-post* impact assessment during the early phase of an R&D project in NRM.

***Institutional impacts of the Cassava Participatory Research and Extension Project in Thailand and Vietnam 1993–2004***<sup>6</sup>: This study undertook to trace, measure and test the significance of the benefits to the implementing research and extension institutions of the Cassava Farmer Participatory Research and Extension (CFPRE) project in Thailand and Vietnam from 1993 to 2004.

*Scope of the institutional impact assessment*

In addition to the primary objective of improving the sustainability of cassava-based cropping systems, the project also had three institutional objectives: (1) to support national institutions in conducting strategic and applied research; (2) to strengthen the farmer participatory research (FPR) capacity in national institutions and in selected farming communities; and (3) to improve institutional linkages and acceptance of an FPR approach in collaborating institutions, with persons trained in FPR methodologies.<sup>7</sup>

An assessment of the extent to which the institutional objectives were met by the project was conducted through focus-group discussions involving 10 of the 11 local institutions involved in the study. Because the assessment is based on focus-group discussions with the partner organizations, the results capture how researchers and extension personnel *perceive* that the structure, procedures, behavior, collegiality and efficacy of their home institution have changed as a result of involvement in the FPR.

The project's local partner organizations were:

- Government institutions involved primarily in *research*—the Department of Agriculture (DOA), the Land Development Department (LDD) and the Thailand Tapioca Development Institute (TTDI) in Thailand; and the Institute of Agricultural Sciences (IAS), the Vietnam Agricultural Sciences Institute (VASI), and the National Institute for Soils and Fertilizers (NISF) in Vietnam;
- Government institutions involved primarily in *extension*—the Department of Agricultural Extension (DOAE) in Thailand;
- Agricultural universities—Kasetsart University (KU) in Thailand; and University of Agriculture and Forestry II (UAF2), Hue Agricultural University and Thai Nguyen Agricultural University (TNAU) in Vietnam.

The different institutional structures of Vietnam and Thailand make strict comparison by institution type and region difficult. In Vietnam, multidisciplinary research and extension teams work in specific geographical localities. In contrast, cassava development in Thailand

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6. Summarized from: Calkins P; Thao V, 2005. Institutional impacts of the Cassava Farmer Participatory Research and Extension Project in Thailand and Vietnam, 1993–2004. PRGA Program, Cali, Colombia. 66p.

7. See Howeler R, 2004. End-of-project report: Second phase of the Nippon Foundation Cassava Project in Asia 1999–2003. CIAT, Cali, Colombia. 20p.

is organized into separate teams of researchers on the one hand and extension workers on the other, who either have national-level mandates or have worked in several parts of the country.

### *Methodology*

In order to collect information on the benefits and constraints of FPR, five focus-group discussions were conducted in 2004. In these groups, positive impacts and hindrances to greater success were collectively identified, and then ranked by vote. In each focus group, individual participants wrote down a list of responses to a given question (positive impacts, negative constraints). All answers were recorded on a whiteboard and then each participant voted for the five answers that she or he considered to be the most important, with the following ranking: 10 points for the single most important response, 7 for the next, 5 for the third, 3 for the fourth, and 1 for the fifth. The total score for each question was calculated, and the responses sorted by descending order of score. Responses were classified into five types of *benefits* (management work, scientific and professional knowledge, understanding of farmers and their environment, motivation, work efficiency) or five types of *constraints* (operating budget, government policies, internal management, external economic and market conditions, necessary knowledge or information). In cases where an answer seemed to straddle more than one of these categories, points were divided among them.

### *Benefits of farmer participatory research to partner institutions*

The classified responses regarding the institutional benefits of participatory research are summarized in panels A through E of Figure 1. The institutional benefits felt by each of the three geographical (Vietnam) and two disciplinary (Thailand) groups across the two countries were substantial and widely divergent.

*Thailand:* Two focus-group discussions were carried out in Thailand: an "extensionist group" and a "researcher group."

Both extension workers and researchers appreciated improved work management as one of the important institutional benefits of the FPR approach, allocating to it 22% and 28%, respectively, of the total scores of all ranked benefits. The improved management for extension workers meant the ability to apply FPR approaches to other crops, and transform the nature of their work from teaching to facilitation. In addition to improved ability to apply FPR in other projects, the researchers listed the principal management-related benefits as no longer working alone but in partnership with other researchers, extension workers from other institutions and farmers; and DOA acceptance of the FPR approach as new policy. Combining many institutions and ministries into one unified program makes it clearer for farmers and enhances planning for the future through better coordination among institutions.

Although both extension workers and researchers agreed on the improved management benefits from FPR, the two groups allocated the remaining three-quarters for the total scores quite differently. Thai extension workers perceived that more than half (62%) of the total institutional benefits from participatory research came from improved efficiency and motivation combined. The improved efficiency was defined in terms of easier work because project targets are clearly defined, approval from supervisors (who see the results), and more cooperation from farmers and officers. Increased motivation takes the form of (self-)satisfaction from the knowledge that living standards of farmers have improved, and the feeling that farmers are motivated.

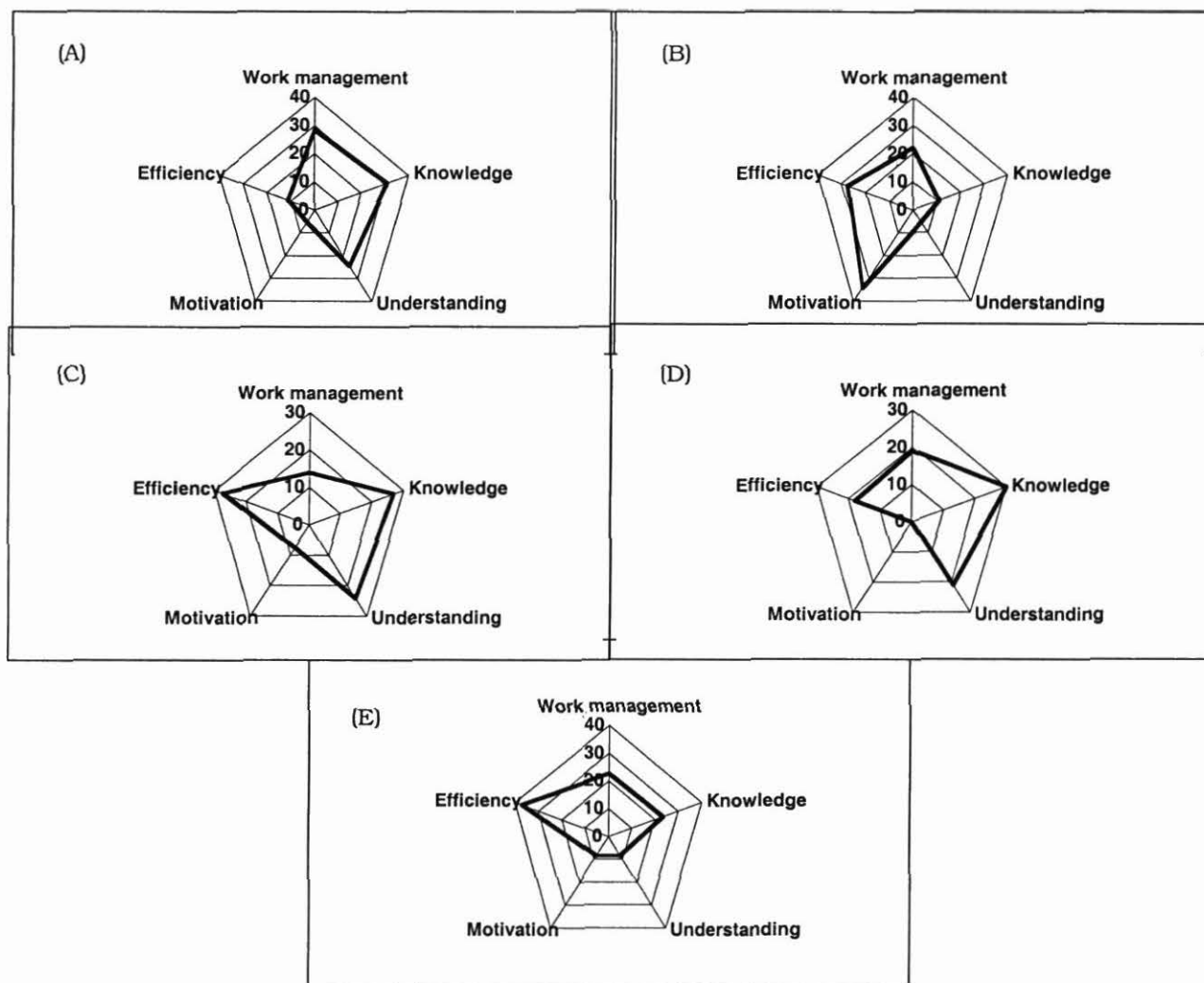


Figure 1. Contrasting patterns of perceived institutional benefits from the Cassava Farmer Participatory Research (FPR) project: (A) researchers, Bangkok, Thailand; (B) extension workers, Bangkok, Thailand; (C) Dong Nai, Vietnam; (D) Hanoi, Vietnam; and (E) Thai Nguyen, Vietnam.

In contrast, Thai researchers felt that increased scientific and professional knowledge and understanding of farmers and their environment combined (55% of total scores) constituted the most important institutional benefits from FPR. The benefit ranked highest by researchers was the new knowledge they learned from CIAT, for instance about soil fertilizers. This benefit obviously did not result from the FPR, but rather from partnership with the project-coordinating institution, CIAT. Other benefits related to increased knowledge included the confidence to extend FPR approaches to other projects because of having had an opportunity to experiment with the approach and see its merits.

The fact that Thai researchers allocated almost one-quarter of total scores to increased understanding of farmers and their environments, as compared to only 6% by extension workers, highlights one of the most often-cited impacts of the FPR approach: providing feedback to research on end-users' preferences. Since extensionists already work closely with farmers, FPR may have less impact on their understanding of farmer preferences, and more on their motivation, as they are not merely delivering finished technologies and

management options to farmers, but rather engaging them as partners in the process of developing those end-products.

*Vietnam:* Three focus-group discussions were held in Vietnam; the “Hanoi group” was attended by project participants from IAS, VASI and NISF. The “Dong Nai group” was attended by project participants from UAF2; and the “Thai Nguyen group” was attended by participants from TNAU.

For all three groups, the improved scientific and professional knowledge earned between 24 and 30% of the total scores for institutional benefits. In specific terms, this meant increased ability to teach and help students think better, thus raising the ability of students to apprehend conditions in the villages; ability to capture the role of farmers in the research-to-innovation-to-technology transfer process; and getting to know the needs, problems, advantages and disadvantages of cassava farmers, so as to propose solutions and target research more adequately.

The three groups further allocated between 14 and 23% of the total institutional benefit scores to improved management; in other words, gaining the scientific and experiential basis to be able to implement other FPR projects in the future.

The biggest difference between the three focus groups was in the relative share of scores relating to efficiency and understanding of farmers and their environments. Dong Nai and Hanoi allocated 28% and 18% to efficiency benefits and 24% and 21% to understanding of farmers and their environments, respectively. In marked contrast, the Thai Nguyen placed the highest weight of any allocation on a single category, improved efficiency (37%) and a relatively low allocation (8%) to understanding of farmers and their environments. All three focus groups in Vietnam allocated less than 8% of institutional benefit scores to improved motivation.

#### *Constraints to greater success*

The classified responses regarding the institutional constraints of participatory research are summarized in panels A through E in Figure 2.

*Thailand:* Both extension workers and researchers saw internal management issues as the single most important institutional constraint to greater success from the FPR approach, allocating 49% and 35% to them, respectively. Both groups perceived a similar, relatively low, level of constraint coming from either external economic and market conditions or the lack of necessary knowledge. The largest difference of opinion on institutional constraints to success of FPR concerned operating budgets and government policies. The researcher group gave government policies 29% of the total institutional constraints scores, as compared to 18% by the extension workers. Meanwhile, extension workers considered operating budget as one of the largest institutional constraints, allocating to that category 31% of their total score, as compared to only 2% by researchers.

*Vietnam:* Both groups involving universities (Dong Nai and Thai Nguyen) saw necessary knowledge and information as the most important category of factors constraining greater success from FPR, allocating 33% and 48% of their total scores, respectively, to such constraints.

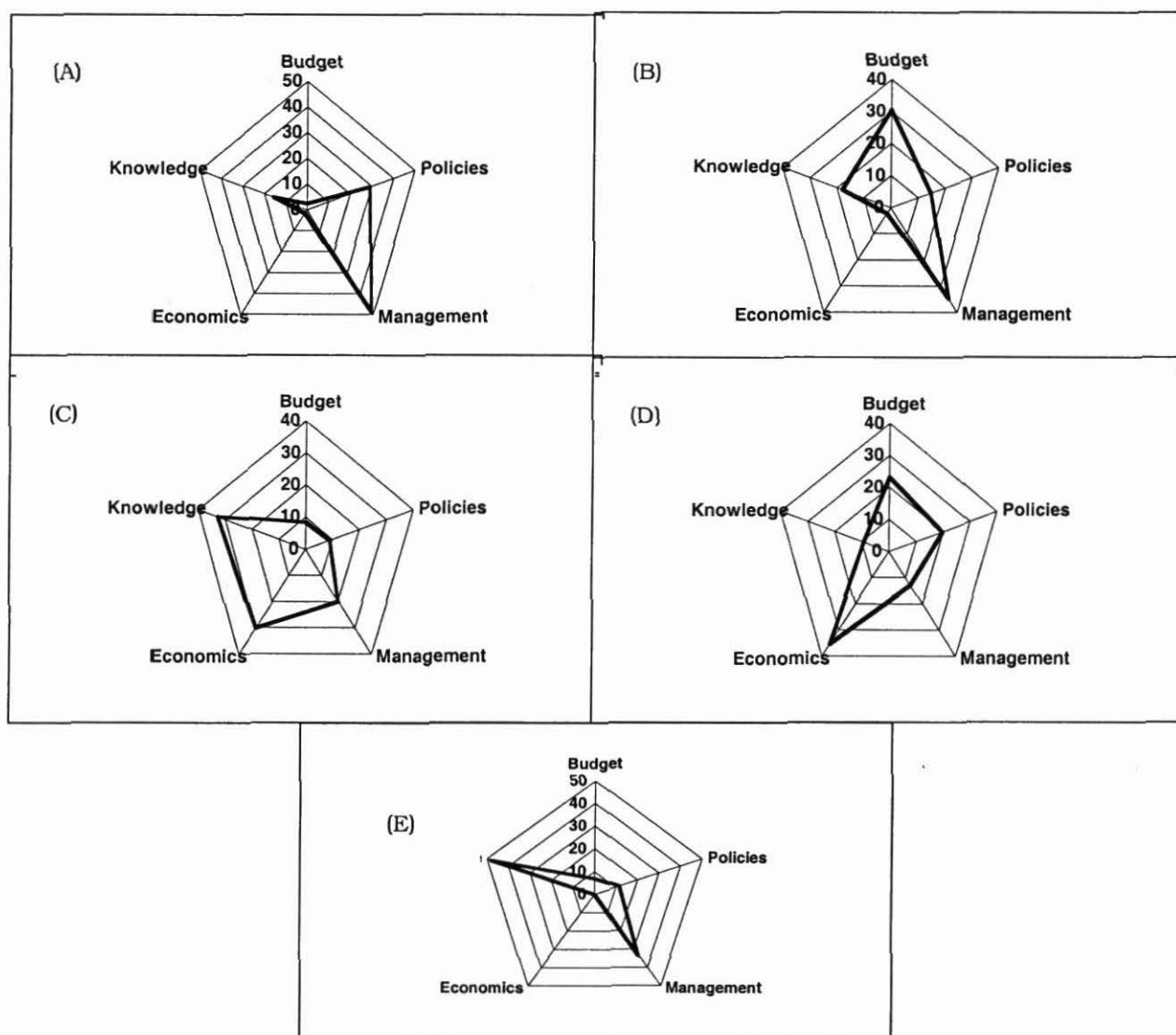


Figure 2. Contrasting patterns of perceived institutional constraints of achieving greater success from the Cassava Farmer Participatory Research (FPR) project: (A) researchers, Bangkok, Thailand; (B) extension workers, Bangkok, Thailand; (C) Dong Nai, Vietnam; (D) Hanoi, Vietnam; and (E) Thai Nguyen, Vietnam.

While the operating budget received a full 23% of the total constraint score from the Hanoi group, the Dong Nai and Thai Nguyen groups saw this category as far less constraining, allocating less than 8% of their total scores to it. The second most important factor constraining greater success, as perceived by the Dong Nai and Hanoi groups, was external economic and market conditions, receiving 30% and 35% of their total scores, respectively; but Thai Nguyen personnel did not see this category of constraints as important at all.

### ***Development and dissemination of tools and methods, capacity building***

Reaching the Program goals of enabling scientists to capture the impact of products (i.e. crop technologies and management practices) and innovation processes, and integrate learning from impact assessment into research planning and research priority-setting requires a

multitude of activities and approaches. During the Program's initiation phase, it sought to convince researchers of the value of trying to assess the impact of a participatory research approach (rather than focusing solely on the impact of the technologies involved) and formed a network of people interested in working together to accomplish this goal. Furthermore, reaching this goal has required developing frameworks for assessing the impacts of the participatory research and gender-analysis methods themselves as opposed to the impacts of technologies alone; developing and testing some specific tools and methodologies for such assessments; organizing workshops and international meetings to build the impact-assessment capacity in the CG System and to promote mutual leaning among the impact-assessors and keep them networked; and providing support and backstopping to the Centers and specific programs that conduct impact studies of participatory research.

Some of the specific activities related to developing tools and methods, as well as information dissemination, backstopping and capacity-building that were conducted this year are summarized below.

***Impact Assessment Workshop, website and electronic discussion group for impact-assessors:*** One the major activities towards the Program's impact-assessment goals this year was the Impact Assessment Workshop that we co-organized with CIMMYT in October.

Impact assessment has moved a long way from adoption and rate of return studies. Over the past 10–15 years, impact has been increasingly seen in terms of poverty alleviation—whether research and development projects deliver on improving the lives and livelihoods of the poor, including such issues as access to social services (e.g. healthcare and education) and their ability to participate in society in cultural, economic, political and social arenas.

Participatory research in particular has forced impact-assessors to adopt and adapt new methods of analysis that are not purely quantitative, but also qualitative. More recently, Robert Chambers and others have promoted the concept of “integrated impact assessment,” combining quantitative, qualitative and participatory impact-assessment methods, and proposing that participatory methods should in fact be the first choice of impact-assessors.

As a result of the workshop, 25 empirical impact-assessment studies from various CG Centers, using multiple impact-assessment methods and approaches, are now available in the public domain (via an Impact Assessment Workshop section of the PRGA website).<sup>8</sup>

The findings of the various research projects presented and the outcomes of various group discussions highlighted a number of important implications for the future of participatory research, gender analysis and impact assessment of projects using these methodologies, for the CG as a whole and the CG Centers, and for the PRGA Program itself. These are summarized in the following bullets.

- On a general level, participatory research should no longer be considered as something different from mainstream research-and-development activities. Individual projects should consider participatory methods alongside traditional ones as they seek the best ways of achieving their goals. There should be a

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8. See <http://www.prgaprogram.org/IAWFTP/IA%20WEB/index.htm>

continuum of research and development projects from the fully conventional to the full participatory, with conventional projects with participatory components and primarily participatory projects with some “pure science” components in between.

- It is clear that there is no one single approach to impact assessment. Rather, impact-assessors have a whole range of methods and techniques from which to choose those most suited to the needs of the project or community in question, taking into consideration the cultural, social, political and environmental realities of the project communities and the appropriateness of particular methods to the organizational structure of the research institution. Furthermore, it may not be so much the methodologies themselves that can be transferred from one setting to another, as the principles behind the methods. This then has direct consequences on the approach to scaling up and scaling out: as one seeks to take impact assessment from one project site to another project site, one has to recognize that each site has its own context—sociologically, politically and ecologically. Each of these domains has the potential to make the direct transfer of a method from one site to another inappropriate.
- Projects usually have three layers of stakeholders, and frequently many more. Each of these has different requirements from impact assessment. All too often, donors have demanded impact data and then either they or the chosen impact-assessors have set the indicators without consultation with either the researchers or the farmers. This has led researchers and farmers alike to feel used. The answer to the differing needs is to involve the stakeholders in the planning as well as the conduct of impact assessment. In this way, each of the stakeholder groups has the opportunity to bring in their perceptions and identify relevant indicators to provide the information that they require. Moreover, the active participation of (representatives of) all stakeholders in the assessment itself should ensure that each one's needs are addressed during the process. This of course makes impact assessment more complicated and most likely more costly, but re-emphasizes the need to include impact assessment when planning the project—before the project even starts.
- Impact-assessors need time to reflect on their results. All too often, simply because indicators were determined with the project effects in mind, insufficient time is allocated to enable the evaluators to study and think about the results. As Andrew Bartlett said at the workshop, “I'd like to know if there are any possible alternative explanations for the results.” Researchers also need to reflect on how the organizational structure of their research institution affects the research process and its outcomes.
- There is a whole range of ethical issues associated with participatory research and assessment of its impact. As already mentioned, there is often a feeling of being used among farmers involved in participatory research. There should be a moral obligation on researchers and impact-assessors to take their results back to those involved in their work, be that farmers who provided indigenous knowledge or feedback on the impact that a project has had on their lives, families and communities, or local government officials who have provided information and feedback to the project. Then there is the whole issue of data-manipulation, especially within cost-benefit analyses—it is important that realistic values be attached to such things as indigenous knowledge (accumulated through generations of working the same land), researchers' education, and farmers'

opportunity costs (costs of participating in the research compared to doing other things).

- Researchers need to understand farmers' perception of risk—for many there is an element (sometimes a large element) of perceived risk in participating in something that taps their indigenous knowledge. Overall, ethical issues are usually best addressed by adopting the “do no harm” principle.
- One of the most important roles highlighted for the CG at the workshop was that of helping those whose understanding of impact assessment is limited to grasp the new directions and concepts of agricultural impact on poverty. All stakeholders need to understand that real impact is primarily long term, usually occurring well after a project has been completed—this is frequently true of adoption rates, so the benefits in terms of poverty alleviation are hardly likely to be short term. In the shorter term, project monitoring and evaluation are related to impact assessment, enabling projects to be steered in the most productive directions rather than simply maintaining a course that is likely to be less productive. Flexibility is therefore the order of the day. It is clearly far better for a project to pursue a sideline activity that has direct impact on farmers' welfare than sticking rigidly to a project work-plan that is not delivering anything. Project monitoring and evaluation need to be built in from the start, rather than being added on at a later date; ideally, monitoring and evaluation should be done with the full participation of all the stakeholders.
- Donors do not always appreciate the impact-assessment results that Centers provide. It is therefore advisable that donors be involved in the impact-assessment planning process. What is more, all stakeholders (but especially donors) need to accept the occasional failure. It is more important to see *every* experience as a learning experience: we learn from our successes, but also from our failures.
- The CG Centers need to communicate their findings effectively, especially to donors. In the light of the strong donor demand for impact assessment, but the apparent minimal application of that data in funding decisions, it is vital that the CG finds alternative ways of getting its messages through. Typical research reports are lengthy documents, and donors are decision-makers with limited time at their disposal. Full-blown impact-assessment reports are therefore *going to* have minimal impact on their intended target audiences. One potentially valuable avenue is external review panels—groups of people that spend a significant amount of time reviewing research programs and often do have the time to read detailed reports. If positive impact-assessment results are picked up by external reviewers, then they will reach donors' desks in a form that they will take notice of. Another potential outlet suggested at the workshop was the production of briefs—short documents summarizing the salient points of impact assessments. The danger here is that in an effort to provide simple documents, one's interpretation becomes simplistic.
- Despite over 30 years of gender research related to agricultural R&D, gender analysis is still viewed by many as a sideline activity within the CGIAR. Those who are involved in gender work are motivated and excited researchers—as demonstrated by their keenness to devote extra time to discussing gender issues outside of that timetabled at the workshop—, but they do not necessarily find the space to promote their work and encourage all researchers to take them seriously. There is, therefore, a continuing need to raise awareness among biophysical researchers of the value of gender analysis and gender-sensitive approaches to research, particularly participatory research. Above and beyond simple

awareness-raising, there is continued perception of a need to mainstream gender analysis at the Center level—a task that the PRGA Program aims to facilitate.

- For many, the primary objective of the CGIAR is the production of international public goods. Historically, this has been viewed in the biophysical arena as the production of technologies, be they varieties or management practices. There is a need to promote the concept of research methods and principles arising out of participatory research and impact assessment as equally valid international public goods.

The workshop should be considered the Program's most important impact-assessment achievement this year because it achieved two objectives: (a) it brought to fruition several years of Program efforts to bring to public domain a significant body of impact-assessment frameworks, methods and empirical case studies; and (b) it promoted cross-Center mutual learning among the scientists, which should result in increasing recognition of the value of involving the ultimate beneficiaries in research and development processes. Ultimately, this serves to promote the understanding of why impact assessment should move beyond simple project accountability and attribution to including learning about effective research processes, including the organizational changes necessary to reach the poor and to have sustainable impact on their livelihoods.

In addition, we established and are facilitating an electronic discussion group, membership of which has now expanded beyond the workshop participants. The purpose of the discussion group is to continue the mutual institutional learning (CG as well as non-CG), as it is not researchers in isolation who must learn, but the research-and-development organizations themselves need to learn from their experiences and change their own impact-assessment and research processes accordingly.

***Participatory research and gender analysis in agricultural and natural-resource management research: An annotated bibliography of selected literature:***

In order to synthesize the results from published works on the impact of participatory research and gender analysis, and to further facilitate institutional learning and change processes by sharing this information with the PRGA Program's stakeholders, we have prepared an annotated bibliography of participatory research and gender analysis in agricultural and natural-resource management research. At the end of 2005, there were 97 entries in the database, comprising refereed journal articles published in English that fit the established search parameters, namely:

- *Impact*: empirical studies (results) on impact of agricultural technologies that were developed via the use of participatory research and gender-analysis methods.
- *Practice*: articles that describe how projects implemented participatory research and gender analysis, together with some of their findings or outcomes, but they do not necessarily assess the impact of technologies on end-users.
- *Methodology*: articles that focus on evaluating and discussing the pros and cons of participatory research and gender-analysis methods, and talk about specific lessons learned on what works and where. The studies in the other two categories may also include descriptions of the methodology used, but they are not specific evaluations of the methodology. This category also has papers discussing or evaluating the use of participatory and gender-analysis methods in impact assessment, monitoring and evaluation, and project planning.

The publication of an annotated bibliography from the database was delayed in 2005, but it is expected to be available as PDF on the Program website in the first half of 2006. A small number of copies will be printed for those partners who cannot download large files from the Internet.

**Strengthening rural innovation ecologies: Participatory development of a methodology for strengthening social networks<sup>9</sup>:** Innovation is a social process of putting new ideas and technologies to work. A rural innovation ecology is a metaphor for the web of social communication and interactions that may foster or curtail rural innovation. This project researched and developed a participatory methodology to help make rural innovation ecologies visible, help identify interventions for strengthening social networks, and then help monitor and evaluate subsequent interventions. The research was carried out with two Committees for Local Agricultural Research (CIALs, their Spanish acronym): *Fortaleza Carpintereña* (Morales, Cauca) and *El Progreso* (Piendamó, Cauca). CIAL members participated actively in the development of the methodology. We conducted the following steps with each group:

- Exploring the nature and importance of social networks with participating groups
- Designing a social network questionnaire
- Mapping and participatory analysis of the networks
- Designing and implementing a strategic plan based on this analysis
- Participatory monitoring and evaluation based on re-drawing the networks.

This project is work in progress: the two groups are currently implementing their respective strategic plans. A prototype of the tool has been designed and implemented in two communities. It still remains to be seen how this prototype may apply (or not) in groups different from CIALs—groups that do not have such an advanced *previous* interest in participatory research and monitoring techniques, and if the insights gained by the groups will translate into measurable interventions in the future. For now, the maps generated are being used as communication and fund-raising tools by the groups. Additionally, given the importance of social capital and networks for these small rural communities, any insight into the concept and even a partial approximation of the status of these in the community is bound to be of help. Periodical remapping is the longer-term objective of this study.

For now, this prototype will be further developed and honed for application in other cases, and presented to NGOs, so it can hopefully go into a further stage of collaborative research (between NGOs themselves and with communities).

**Generations Challenge Program:** The Generations Challenge Program (GCP) aims to capitalize on the fruits of the genomics revolution to solve the agricultural constraints of farmers in the world's poorest countries. An important success factor is the GCP's ability to ensure that the products of GCP research can and will be adopted, adapted and applied for the ultimate benefit of resource-poor farmers. In July 2005, Sub-program 5 of the GCP organized an expert consultation to draft a delivery strategy document. A PRGA Program

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9. Summarized from Douthwaite B; Hernández LA; Claros E; Alvarez S; Carvajal A. Strengthening rural innovation ecologies: Participatory development of a methodology for strengthening social networks. Unpublished report. CIAT, Cali, Colombia.

representative (N. Lilja) attended the meeting and provided input into the development of GCP's delivery strategy document.<sup>10</sup>

**Water Challenge Program:** The PRGA Program is a partner in the ICARDA-led Water Challenge Program project "Improving Water Productivity of Cereals and Food Legumes in the Atbara River Basin of Eritrea." The project initiation meeting was held in Eritrea in May 2004. The project will produce, in partnership with farmers, new varieties of cereals and food legumes, with associated management practices, which have proven farmer acceptability; establish seed systems to supply farmers with quality seed in a sustainable manner; enhance farmers' skills in participatory research and in community-based seed production; strengthen the capacity of national institutions to carry out participatory research and technology transfer, and to monitor and assess the impact of their research; and strengthen linkages between research, seed and extension departments by working together in cooperation with farmers and farming communities. The role of the PRGA Program is to provide social-science backstopping support to the NARS, especially in setting up an impact-assessment plan and assisting in the implementation of the impact-assessment plan over the next 5 years. The impact-assessment work has been slow to start owing to a lack of local social-science support at the field level. Plans have now been made to engage social scientists from Asmara University and to establish a longer-term partnership to carry out these activities.

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10. A copy of the detailed delivery strategy document can be obtained from Dr M. Carmen de Vicente [c.devicente@cgiar.org](mailto:c.devicente@cgiar.org)

## **Output 3: Communications—Communication Strategies for Learning and Change with Partners**

### **Output targets**

1. PRGA Program's interactive website launched and attracts a large and diverse range of users who not only read, but also contribute to the site's contents.
2. Awareness of PRGA research results and other publications is considerably heightened, particularly among agricultural scientists.
3. Research results published in media favored by non-academic audiences and researchers not well acquainted with the PRGA field.

### **Website**

The Program's website (<http://www.prgaprogram.org>) was launched back in December 2003 (see *PRGA Program Annual Report 2003–04*). Several spot-checks of website use showed a peak in simultaneous access at 158 users on 3 November 2005; other website statistics are being compiled. However, to date, users' contributions to the site have been few.

During 2005, a large number of new resources were added to the site. All new PRGA publications are routinely uploaded, and we are in the process of locating as many staff publications as possible for upload as PDF files. Of particular note is the new sub-website established after the Impact Assessment Workshop in October 2005, via which users may access draft papers, presentations, abstracts and notes from discussions held at the Workshop.

The issue of website access from sites with slow connections was addressed in a questionnaire sent out on the PRGA Info listserv in December 2005, asking for feedback on users' experiences. Results from this exercise will feed into decisions about the future of the website.

### **Dissemination of research results to peers**

A list of PRGA Program and staff publications for the reporting period is given in Appendix 1.

New PRGA publications are routinely uploaded to the website, and frequently publicized via a "News item" on the homepage. During the latter part of 2005, we started to "hunt down" Program and staff publications that were not available on line (see *above under "1. Website"*).

The monthly *PRGA Newsletter* was relaunched in September 2005, providing information on new publications, new web-based resources and other news items. It is currently being produced in electronic format only and sent out on the PRGA Info listserv.

Our mailing list for printed copies of PRGA publications currently comprises only donors and Advisory Board members. This is an issue that will be addressed from 2006 onwards. However, a communications strategy drafted during 2005 proposes that publications be made available to partners in areas with poor Internet connection as PDF files on CD-ROMs.

During the year, it was proposed that all subscribers to PRGA's specialist (GWG, PBG and PNRM) and project-based (ASARECA project) listservs should be subscribed to PRGA Info. The idea was that the specialist and project-based listservs would act as the discussion forums, while PRGA Info would become PRGA's electronic mailing list. However, this proposal has not gone exactly to plan! First, several subscribers were unhappy with the increased e-mail traffic and withdrew their subscriptions (this was mostly a regrettable result of several subscribers sending their responses to a questionnaire sent out on PRGA Info to the listserv as a whole). Second, the most active e-mail discussion of the year started and ran its course on PRGA Info rather than on one of the specialist listservs. The PRGA Info listserv had 600 members by the end of 2005.

Various presentations were made on the work of, and research results from, the PRGA Program by senior staff and others throughout the year (see Appendix 1, section "Workshop and conference papers, presentations and posters").

An article on participatory plant breeding was published in the electronic newsletter, *Plant Breeding News*, and a brochure on participatory plant breeding was published by ICARDA.

### ***Dissemination of research results to non-specialist audiences***

A four-page summary of the Impact Assessment Workshop, and a half-page piece on the Program's role in mainstreaming participatory research and gender analysis were prepared for the CGIAR Annual General Meeting in December 2005. Work on producing a specific series of *Research Briefs* is expected to start in 2006.

During the second half of the 2005, we started a process of updating our mailing list (PRGA Info listserv) subscriber information so as to provide a breakdown of institutional types (e.g. IARC, NARS, NGO, civil society, policy-maker). This data should be available during 2006.

## **Appendix 1: Program and staff publications**

### ***Refereed journal articles***

Mangione D; Senni S; Puccioni M; Grando S; Ceccarelli S, *in press*. The cost of participatory barley breeding. *Euphytica*, *in press*.

Westermann O; Ashby JA; Pretty J, 2005. Gender and social capital: The importance of gender differences for the maturity and effectiveness of natural resource management groups. *World Development* 33(11): 1783–1799.

### ***Book chapters and books***

Averill D; Lilja N; Manners G, *in prep*. *Participatory Research and Gender Analysis in Agricultural and Natural Resource Management Research: An Annotated Bibliography of Selected Literature*. PRGA Program, Cali, Colombia, *in prep*.

Braun AR, 2005. Beyond the problem-solving approach to sustainable rural development. In: Gonsalves J; Becker T; Braun A; Campilan D; De Chavez H; Fajber E; Kapiriri M; Rivaca-Caminade J; Vernooy R (ed.) *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Volume 1: Understanding Participatory Research and Development*. International Potato Center – Users' Perspectives With Agricultural Research and Development (CIP-UPWARD), Laguna, The Philippines and International Development Research Centre (IDRC), Ottawa, Canada. Pp. 129–134.

Ceccarelli S; Grando S, 2005. Decentralized participatory plant breeding: A case from Syria. In: Gonsalves J; Becker T; Braun A; Campilan D; De Chavez H; Fajber E; Kapiriri M; Rivaca-Caminade J; Vernooy R (ed.) *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Volume 1: Understanding Participatory Research and Development*. International Potato Center – Users' Perspectives With Agricultural Research and Development (CIP-UPWARD), Laguna, The Philippines and International Development Research Centre (IDRC), Ottawa, Canada. Pp. 193–199.

Dalton T; Lilja N; Johnson N; Howeler R, *in press*. Impact of participatory natural resource management research in cassava-based cropping systems in Vietnam and Thailand. In: Zilberman D; Waibel H (ed.) *The Impact of Natural Resource Management Research in the CGIAR*. CAB International, Wallingford, UK. *In press*.

Gonsalves J; Becker T; Braun A; Campilan D; De Chavez H; Fajber E; Kapiriri M; Rivaca-Caminade J; Vernooy R (ed.), 2005. *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Volume 1: Understanding Participatory Research and Development. Volume 2: Enabling Participatory Research and Development. Volume 3: Doing Participatory Research and Development*. International Potato Center – Users' Perspectives With Agricultural Research and Development (CIP-UPWARD), Laguna, The Philippines and International Development Research Centre (IDRC), Ottawa, Canada.

- Gurung B, 2005. Organizational implications for mainstreaming participatory research and gender analysis. In: Gonsalves J; Becker T; Braun A; Campilan D; De Chavez H; Fajber E; Kapiriri M; Rivaca-Caminade J; Vernooy R (ed.), 2005. *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Volume 2: Enabling Participatory Research and Development*. International Potato Center – Users' Perspectives With Agricultural Research and Development (CIP-UPWARD), Laguna, The Philippines and International Development Research Centre (IDRC), Ottawa, Canada. Pp. 133–138.
- Roothaert R; Kerridge P, 2005. Adoption and scaling out – experiences of the Forages for Smallholders Project in South-east Asia. In: C. Conroy (ed.) *Participatory Livestock Research: A Guide*. Intermediate Technology Development Group (ITDG), Warwickshire, UK. Pp. 225–236.
- Roothaert R; Kaaria S, 2004. Issues and strategies for going to scale: A case study of the forages for smallholders project in the Philippines. In: D. Pachico (ed.) *Scaling Up and Out: Achieving Widespread Impact Through Agricultural Research*. CIAT, Cali, Colombia.
- Thiele G; Braun A; Edson Gandarillas E, 2005. Farmer field schools and local agricultural research committees as complementary platforms: New challenges and opportunities. In: Gonsalves J; Becker T; Braun A; Campilan D; De Chavez H; Fajber E; Kapiriri M; Rivaca-Caminade J; Vernooy R (ed.) *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Volume 3: Doing Participatory Research and Development*. International Potato Center – Users' Perspectives With Agricultural Research and Development (CIP-UPWARD), Laguna, The Philippines and International Development Research Centre (IDRC), Ottawa, Canada. Pp. 142–152.
- Van Mele P; Braun AR, 2005. Importance of Methodological Diversity in Research and Development Innovation Systems. In: Gonsalves J; Becker T; Braun A; Campilan D; De Chavez H; Fajber E; Kapiriri M; Rivaca-Caminade J; Vernooy R (ed.) *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook. Volume 1: Understanding Participatory Research and Development*. International Potato Center – Users' Perspectives With Agricultural Research and Development (CIP-UPWARD), Laguna, The Philippines and International Development Research Centre (IDRC), Ottawa, Canada. Pp. 151–156.

### **Workshop and conference papers, presentations and posters**

- Amede T; Mengistu S; Roothaert R. Intensification of livestock feed production in Ethiopian highlands: Potential and experiences of the African Highlands Initiative. Paper presented at the 19th Ethiopian Veterinary Association Annual conference, June 8, 2005, Economic Commission for Africa, Addis Ababa, Ethiopia.
- Aw-Hassan A. Participatory research. Lecture at the Consultative Workshop on Participatory Plant Breeding (CONPAB) a Specific Support Action funded by the European Commission (Contract no. INCO-CT-2003-502444), April–May 2005, Aleppo, Syria.

- Ceccarelli S. Participatory plant breeding. Lecture presented at the Workshop on "Barley research in Iran: Priorities and strategies," July 2005, Seed and Plant Improvement Institute (SPII), Karaj, Iran.
- Ceccarelli S. Participatory plant breeding. Lecture at the Changes Agent in Rural Development training course, August 2005, C. Obregón, Sonora, Mexico.
- Ceccarelli S. Participatory plant breeding and drought resistance. Seminar presented at Cornell University, USA, November 2005.
- Ceccarelli S. Participatory plant breeding—An example of demand-driven research. Lecture at the European Seminar on "Seeds Liberate Diversity," November 24–25, 2005, Poitiers, France.
- Ceccarelli S; Grando S. Participatory plant breeding. Lectures at the Consultative Workshop on Participatory Plant Breeding (CONPAB) a Specific Support Action funded by the European Commission (Contract no. INCO-CT-2003-502444), April–May 2005, Aleppo, Syria.
- Ceccarelli S; Grando S. Workshop on "Recognition, Access, and Benefit Sharing in Participatory Plant Breeding," August 2005, Amman, Jordan. (Supported by IDRC.)
- Ceccarelli S; Grando S, 2005. Decentralized-participatory plant breeding. In: Tuberosa R; Phillips RL; Gale M (ed.) *Proceedings of the International Congress "In the Wake of the Double Helix: From the Green Revolution to the Gene Revolution,"* May 27–31, 2003, Bologna, Italy. Avenue Media, Bologna. Pp. 145–156.
- Ceccarelli S; Grando S. Participatory plant breeding: A fast track to variety development. Paper presented at the American Society of Agronomy (ASA) Meeting, November 2005, Salt Lake City, Utah, USA.
- Ceccarelli S; Grando S; Baum M. Participatory plant breeding in water-limited environments. Paper presented at the 2nd International Conference on Integrated Approaches to Sustain and Improve Plant Production under Drought Stress (INTERDROUGHT II), September 24–28, 2005, Rome, Italy.
- Dalton T; Lilja N; Johnson N; Howeler R. Impact of participatory natural resource management research in cassava-based cropping systems in Vietnam and Thailand. Paper presented at the joint meeting of the Integrated Natural Resource Management Group (INRM) and CGIAR Standing Panel on Impact Assessment (SPIA), June 13–19, 2005, International Rice Research Institute (IRRI), Los Baños, The Philippines.
- Dalton T; Lilja N; Johnson N; Howeler R. Human capital accumulation and productivity improvements in Asian cassava systems: Are participatory research approaches beneficial? Paper presented at the American Agricultural Economics Association meeting, July 24–27, 2005, Providence, Rhode Island, USA.
- Dalton T; Lilja N; Johnson N; Howeler R. Impact of participatory natural resource management research in cassava-based cropping systems in Vietnam and Thailand. Paper presented at CIAT, Cali, Colombia, November 16, 2005.

- Delve J; Roothaert R. How can smallholder farmer–market linkages enhance improved technology options and natural resource management strategies? Paper presented at NARO conference, September 2004, Kampala, Uganda.
- Feldstein HS. Gender differences in production and supply elasticities. Paper presented at the IFPRI Gender Impact Seminar, November 2–3, 2004, IFPRI, Washington, DC, USA.
- Joachim V; Gurung B. Escaping the rural poverty trap: What do private sector and gender have to do with it? The contributions of gender-based approaches and private-public partnerships in rural enterprises to reduce poverty. Paper presented at the Canadian International Development Agency (CIDA), Canada, September 14, 2005.
- Kaaria S; Lilja N; Sandoval V; Garcia J; Hincapié F. Assessing impacts of farmer participatory research approaches: A case study of local agricultural research committees in Colombia. Paper presented at Impact Assessment Workshop, October 19–21, 2005, CIMMYT, Mexico, DF.
- Lilja N. Reframing impact assessment and evaluation. Keynote presentation at Impact Assessment Workshop, October 19–21, 2005, CIMMYT, Mexico, DF.
- Maatougui M. Workshop on “Participatory Plant Breeding,” Algiers, Algeria, December 24, 2005. Supported by the European Commission (Contract no. INCO-CT-2003-502444) as Specific Support Action.
- Mustafa Y; Grando S; Ceccarelli S. Benefit–cost analysis of a participatory breeding program in Syria. Paper presented at Impact Assessment Workshop, October 19–21, 2005, CIMMYT, Mexico, DF.
- Roothaert R. Forage utilisation in smallholder systems – African and S.E. Asian perspectives. Paper presented at a Workshop on strategies for ensuring clean germplasm for distribution and use, October 3, 2005, ILRI, Addis Ababa, Ethiopia.
- Roothaert R; Binh L; Magboo E; Yen V; Saguinhon J, 2005. Participatory forage technology development in Southeast Asia. In: Yimegnuehal A; Degefa T (ed.) *Participatory Innovation and Research: Lessons for Livestock Development*. Proceedings of the 12th Annual conference of the Ethiopian Society of Animal Production (ESAP) held in Addis Ababa, Ethiopia, August 12–14, 2004, vol. 1: Plenary Session. Ethiopian Society of Animal Production, Addis Ababa. Pp. 21–30.

### **Working documents**

- Dalton T; Lilja N; Johnson N; Howeler R, 2005. Impact of participatory natural resource management research in cassava-based cropping systems in Vietnam and Thailand. *Working Document No. 23* (revised). PRGA Program, Cali, Colombia. 27p.
- Gabriel J; Herbas J; Salazar M; Ruiz J; López J; Villarroel J; Cossio D, 2004. Participatory plant breeding: A new challenge in the generation and appropriation of potato varieties by farmers in Bolivia. *Working Document No. 22*. PRGA Program, Cali, Colombia. 22p.

Saad N; Lilja N; Fukuda W, *in press*. Participatory cassava breeding in Northeast Brazil: Who adopts the new varieties and why? *Working Document No. 24*. PRGA Program, Cali, Colombia. 27p. *In press*.

### **Reports**

Braun A, 2005. Assessment of capacity development for participatory research and gender analysis among ICARDA and partner institutions. Report for PRGA Program by PAIDEIA Resources, Nelson, New Zealand. 63p.

Calkins P; Thao VT, 2005. Institutional impacts of the Cassava Farmer Participatory Research and Extension Project in Thailand and Vietnam, 1993–2004. PRGA Program, Cali, Colombia. 66p.

Lilja N; Bellon M, *in press*. Participatory research projects at the International Maize and Wheat Improvement Center (CIMMYT). PRGA Program, Cali, Columbia, and CIMMYT, Mexico, DF. 43p. *In press*.

### **Other publications**

Ceccarelli S, 2005. Participatory plant breeding: A fast track to variety development. *Plant Breeding News* 156 (2 May 2005): 1.09. (An Electronic Newsletter of Applied Plant Breeding.)

Ceccarelli S; Grando S, 2004. *Decentralized-Participatory Plant Breeding* [brochure]. ICARDA, Aleppo, Syria. 6p.

## **Appendix 2: Special project funding approved in 2004 and 2005**

- *Institutionalizing Social and Gender Analysis for Poverty Alleviation in Agricultural Research and Development in the Eastern Himalayas Region*, funded by IDRC, 2005–2008. US\$162,710.

### **Appendix 3: Staff list**

To provide a core of outstanding scientific capacity that can be deployed to work with individual IARCs or inter-Center initiatives and programs, the PRGA Program maintains a nucleus of internationally recruited specialists who support collaborative research and capacity-building. PRGA Program staff facilitate the identification of research opportunities and needs, conduct research, contribute to training, support the synthesis and international exchange of lessons learned among the various participants, and promote the dissemination of results.

Staff are being recruited as funding permits and outposted to partner institutions to reinforce the research of IARCs and our partners, as well as to carry out capacity-building.

#### ***Principal staff***

Barun Gurung, PhD Anthropology, Senior Scientist  
Coordinator, PRGA Program (100% PRGA)

Nina Lilja, PhD Agricultural Economics, Senior Scientist  
Impact Assessment (100% PRGA)

Ralph Roothaert, PhD Crop and Weed Ecology, Senior Scientist  
Forages for Smallholders Project, Joint appointment PRGA Program and ILRI,  
Addis Ababa, Ethiopia (50% PRGA)

Ann Braun,\*\* PhD Ecology  
Facilitator, PRGA Participatory Natural Resource Management Working Group (50% PRGA)

Salvatore Ceccarelli, PhD Plant Breeding  
Facilitator, PRGA Participatory Plant Breeding Working Group (50% PRGA)

Hilary Sims Feldstein, MPA  
Facilitator, PRGA Gender Analysis Working Group (50% PRGA)

Guy Manners,\* BSc Zoology  
Communications Consultant (50% PRGA)  
Acting Facilitator, PRGA Participatory Natural Resource Management Working Group

#### ***Administrative staff***

Juliana Aristizábal,\* Bachelor's in Social Communication and Journalism  
PRGA Communications Assistant (100% PRGA)

Freddy Escobar  
Assistant/Driver (50% PRGA)

Claudia García, BA Production Engineering  
PRGA Administrative Assistant (100% PRGA)

Jorge Mario Quiceno,\*\* MBA  
PRGA Administrative Assistant (100% PRGA)

**Note:** \* Staff joined PRGA in 2004–05;  
\*\* Staff left PRGA in 2004–05.

## **Appendix 4: Advisory Board**

### ***Current Board members (31 December 2005)***

Jacqueline A. Ashby  
Convening Center representative  
Director, Rural Innovation Institute  
CIAT, Cali, Colombia

Aden A. Aw-Hassan  
PNRM representative  
Coordinator, Dry Land Resources Management Project

Janice Jiggins  
Gender representative

Monica Kapingiri  
NGO representative  
Kampala, Uganda

Andrés Laignelet Sierra  
NARS representative  
CORPOICA

Annina Lubbock  
IFAD, Technical Advisory Division  
Donor Representative

Gordon Prain  
CGIAR representative  
CGIAR/SIUPA  
CIP

Bhuwon Sthapit  
PPB representative  
IPGRI/Nepal

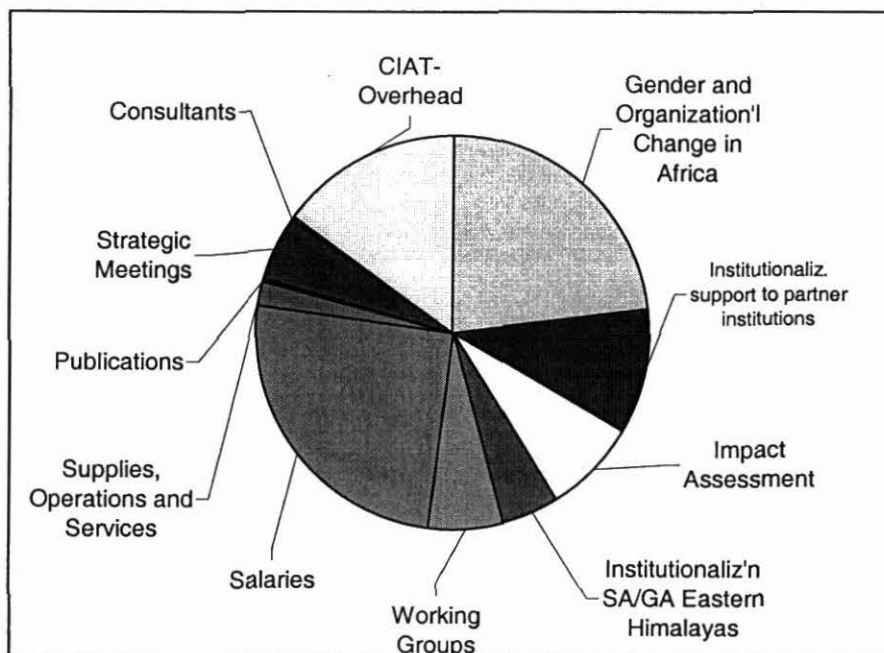
*Position vacant*  
Farmer representative

## Appendix 5: Budget 2005

<b>Contributions</b>	<b>US\$</b>
CIDA	338,300
IDRC	53,893
Italy	185,000
Netherlands	100,000
New Zealand	50,000
Norway	234,354
Switzerland	70,000
Others	501,862
<b>Total</b>	<b>1,533,409</b>

<b>Expenditures</b>	<b>US\$</b>
CIDA	256,641
IDRC	44,101
Italy	185,000
Netherlands	100,000
New Zealand	0
Norway	234,354
Switzerland	70,000
Others	52,412
<b>Total</b>	<b>942,508</b>

## 2005 Funds Allocation



Allocation of Funds	US\$
<b>Main budget items</b>	<b>490,724</b>
Gender and Organizational Change in Africa	216,841
Institutionalization, support to partner institutions	97,889
Impact Assessment	73,495
Institutionaliz'n SA/GA Eastern Himalayas	44,101
Working Group Facilitators	58,399

<b>Other budget items</b>	<b>451,783</b>
Salaries	237,253
Supplies, Operations and Services	18,195
Publications	2,863
Strategic Meetings (AGM, CIAT Review, ABM, etc.)	48,786
Consultants	3,687
CIAT-Overhead	141,000

<b>Total</b>	<b>942,508</b>
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\* Carryover is already committed in 2005 for 2006 activities

590,901

<b><i>Breakdown of institutionalization support to partner institutions</i></b>	
AfNet	10,000
CARE International in Laos	2,500
CIP – Mainstreaming GA in the research process	7,750
CIP – Women Feeding Cities Workshop	5,000
ICARDA	5,000
IFPRI	2,000
ILRI	7,000
Supporting ILRI staff – forages	43,353
Supporting IPRA staff	2,486
PROINPA	12,800
<b>Total</b>	<b>97,889</b>

## Appendix 6: PRGA Program Logical Framework 2006–2008

	Outputs	Intended users	Outcome	Impact
<b>Output 1</b>	Capacity developed for mainstreaming gender analysis and equitable participatory research—Improved competencies of the CG System and collaborating institutions to mainstream the use of gender-sensitive participatory approaches in plant breeding, and natural-resource management research	Selected CG Centers and NARS	CG System and collaborating institutions routinely use gender-sensitive participatory approaches in plant breeding, and natural-resource management research	Better-targeted R&D that benefits all end-users, especially poor women (gender groups), in target communities and regions
Output Targets 2006	<ul style="list-style-type: none"> <li>Team of 8 trainers, trained in a variety of 'best practice' approaches, established and enabled to provide training and technical support on participatory research (PR) and gender analysis (GA), and impact assessment (IA) of institutional learning and change (ILAC), to scientists in their institutes; At least 10 collaborative action-research activities undertaken through strategic partnerships</li> </ul>	NARS, NGOs, regional networks	<ul style="list-style-type: none"> <li>Collaborating institutions hold their own workshops on PR and GA, and IA of ILAC using their own trainers</li> <li>An internal working group is formed to spearhead and facilitate organizational change and mainstream PR and GA in each participating institution</li> </ul>	
Output Targets 2007	<ul style="list-style-type: none"> <li>Field training manual for PR and GA, IA of ILAC, and organizational development (OD) developed and widely disseminated, including a brief review of existing PR and GA, IA, and OD methods, drawing on best practices in developing guidelines</li> </ul>	CGIAR, NARS, NGOs, regional networks	<ul style="list-style-type: none"> <li>Scaling up and scaling out effects of publication reaching new audiences</li> </ul>	
Output Targets 2008	<ul style="list-style-type: none"> <li>Research results published and disseminated on the process of mainstreaming through organizational change</li> </ul>	Other CG Centers, IARCs and NARS; other institutions interested in mainstreaming PR&GA	<ul style="list-style-type: none"> <li>Scaling up and scaling out effects of publication reaching new audiences</li> </ul>	

	Outputs	Intended users	Outcome	Impact
<b>Output 2</b>	Evidence of the impact of PR and GA methods assessed, and methods developed to permit IA results to be effectively integrated into research for development decision-making	CG Centers, other IARCs, NARS, NGOs	R&D decision-making integrates IA results of PR and GA methods	Better-targeted R&D that benefits all end-users, especially poor women (gender groups), in target communities and regions
Output Targets 2006	<ul style="list-style-type: none"> <li>Results of empirical impact studies and of the impact-assessment workshop are published and disseminated; PowerPoint presentations are prepared to highlight the recent evidence on IA of PR and GA in general, and they are widely disseminated to Program collaborators and via website</li> </ul>		<ul style="list-style-type: none"> <li>Researchers understand the use of PR and GA methods and have evidence available concerning their impact</li> </ul>	
Output Targets 2007	<ul style="list-style-type: none"> <li>Collaborative action-research conducted with CG and NARS partners to develop, test, and assess methods for improving information resulting from IA (product and process impacts), and methods for assessing the contribution of IA to ILAC; Results of empirical impact studies are published as working documents and in professional journals</li> </ul>		<ul style="list-style-type: none"> <li>The impact of participatory research, as well as how well R&amp;D organizations have been able to learn and change as a result of their experiences in PR and GA is documented and available to researchers</li> </ul>	
Output Targets 2008	<ul style="list-style-type: none"> <li>Discussion paper on methods of IA for ILAC is published and disseminated to Program partners and collaborators; Results of empirical studies on IA for ILAC are analyzed and published as working documents and in professional journals</li> </ul>		<ul style="list-style-type: none"> <li>Researchers have tools and methods available to enable them to assess the impact of gender-sensitive participatory research process, and which contributes to enhanced ILAC</li> </ul>	

	Outputs	Intended users	Outcome	Impact
<b>Output 3</b>	Communication strategies for learning and change with partners—PRGA Program communicates effectively with partners, donors, and other interested parties	CGIAR, IARCs, NARS, donors, anyone interested in PR and GA	Agricultural R&D practitioners utilize appropriate elements of PR and GA in their work, thereby generating gender-sensitive results for equitable development	Better-targeted R&D that benefits all end-users, especially poor women (gender groups), in target communities and regions
Output Targets 2006	<ul style="list-style-type: none"> <li>Program communications strategy is up and running; International workshop held on integrating gender-sensitive participatory research through organizational change</li> </ul>		<ul style="list-style-type: none"> <li>Partners and web-users are kept abreast of developments in all aspects of PR and GA</li> </ul>	
Output Targets 2007	<ul style="list-style-type: none"> <li>Membership of PRGA-Info Listserv reaches 800; Mailing list built</li> <li>Research results packaged into 1- to 2-page brief forms, and disseminated both as hard copy and in electronic form</li> <li>Report on feasibility of PRGA Program acting as 'information hub' on global agricultural PR and GA</li> </ul>	IARC and NARS scientists, NGO practitioners, civil society organizations, policy-makers		
Output Targets 2008	<ul style="list-style-type: none"> <li>Mechanism set up for PRGA Program to source and redistribute 50% of relevant global agricultural PR and GA results (primarily through listservs and website; bibliographic database)—if deemed feasible</li> </ul>	All agricultural R&D practitioners	<ul style="list-style-type: none"> <li>PRGA Program acts as a source for all relevant information on PR and GA for members, partners and other interested parties, particularly through its website</li> </ul>	

## Appendix 7: Program strategy for participatory research

### *Definition*

Participatory research for agriculture is an approach to involve end-users and other stakeholders in the process of designing, testing and disseminating agricultural technologies and practices in a way that strengthens their own capacity for analysis and action. Participatory research covers a spectrum of joint involvement ranging from situations where research is carried out by the end-users on their own account with very little help from outside (farmer-led participatory research) to research that is carried out by outsiders (scientists) who are technical experts in the topic and who consult the end-users, who often have very specialized knowledge of their environment and crops.

### *Key lessons*

It is important to:

- have participation early on in the design of program, project, technologies and practices;
- distinguish among types of participation and use the type that is consistent with the goal;
- distinguish among types of stakeholders and when to engage them at appropriate points in the research process;
- note that the quality of participatory research is only as good as the capacity of the stakeholders (there is an unmet demand for capacity development);
- know that the quality of participatory research is heavily dependent on the enabling environment and the context in which participation is taking place;
- be aware that conventional and participatory research methods can be highly complementary and enhance each other's impact, but the existing organizational research process may have to be modified to achieve this;
- to see how participatory research links with gender analysis.

### *Objectives*

Participatory research has two major objectives:

- To **improve efficiency**: Agricultural technologies developed using participatory methodologies (particularly in less-productive agro-ecologies) have proven to take less time to develop (from conception to adaptation and adoption) and to have higher and faster adoption rates than those developed in more favorable agro-ecological conditions and in the isolation of research stations. Having been developed by the people who need them and expect to use them, innovations produced by participatory research are rapidly disseminated to other people with similar needs and opportunities with whom the participants in the research want to share their results. This motivation is often referred to as "functional participation."
- To act as a **catalyst for change**. It can strengthen the capacity of farmers to conduct more of their own research and to make demands on the formal research system according to their needs and priorities. It can also create a sense of efficacy and self-worth, a respect for the value of combining expert knowledge and lay experience, skills

for facilitating participation and confidence that the power to catalyze innovation and change is within reach. This is often referred to as "empowering participation."

While one approach emphasizes the product, the other is more concerned with the process. Most participatory research falls somewhere along the continuum between the two approaches and is not necessarily purely one or the other.

## **Appendix 8: Workshop on Strategic Planning for Gender Analysis and Organization Change**

### ***Summary of opportunities and constraints for mainstreaming***

The participants began by outlining some of the results of the institutional analysis they had conducted as part of their action plan from the workshop in 2004, i.e. institutional opportunities and challenges that exist for mainstreaming gender analysis in their organizations. These can be summarized as follows.

#### ***Opportunities***

- There was general support for the application of gender-sensitive research methodologies among colleagues and senior leaders, since it was perceived as adding value to agricultural R&D;
- In some countries (notably Ethiopia, Kenya, Sudan and Uganda), there was a favorable political environment in the form of explicit national policies on gender equality;
- In several cases (Ethiopia, Kenya and Uganda), the NARS have established gender focal persons who are responsible for ensuring that gender concerns are integrated into research processes. They are also charged with capacity-development for gender analysis.

#### ***Constraints***

- The majority reported the unsupportive organizational environment for doing serious gender analysis;
- In all cases, there was no specific budget allocated from the organization's core funds—instead, gender focal persons were supposed to operate on project funds from external donors;
- Although some organizations' leaders demonstrated interest in gender analysis and its mainstreaming, there was little indication of follow-up support—particularly for planning for structural changes within the organization to integrate gender in more meaningful ways.

#### ***Development of concepts and skills***

##### *Gender analysis*

- Definition of concepts
- Gender analysis (GA)
- Linking GA and PR
- Gender – sex – women
- Gender equity
- Gender equality

##### *Gender and organizational change*

- Role of the change agent
- Skills
  - Communication processes
  - Influencing processes
  - Building support / networks

### **On becoming change agents:**

- Analyst
  - Initiator
  - Catalyst
- Qualities
  - Perseverance
  - Vision for change
  - Courageous
  - Receptivity
  - Empathy
  - Self-conscious
  - "Tough skin" to bear criticism

### *Analyzing the organization to assess the following:*

- Sources of power in the organization
- Who influences decisions in the organization
- Evolutionary (slow change) or transformatory (radical change)

### *Identifying sources of power*

- Experience, expertise, skills
- Knowledge
- Resources (financial, material, information)
- Control of resources
- Personal attributes (e.g. charisma, visionary)
- Physical strength
- Formal authority
- Ability to articulate
- Emotional power

### *Types of power*

- Power *over*: forces another to do something because s/he has less power
- Power *to*: enabling others to do something
- Power *within*: individual strength – confidence

### Example group results

<b>Sources of power</b>	<b>Who influences decisions</b>	<b>Types of resistance</b>
Responsible ministries	Top manager	Technological refusal
Act of Parliament	Responsible ministries	Disciplinary resistance
Board of management	Board of management	Attitude complication
Director General	Donor	Negative attitude
Knowledge	Politicians	Indifference
Qualifications	National policy-makers	Lack of experience
Experience	Stakeholders	Lip service
Hierarchy	Senior scientists	Externalizing
Informal relationships		Avoidance
Lobbying skills		Culture/behavior
Personal behavior		Ignorance
Control of resources		Fear of loss of status
Relationship with donors		Fear of commitment
		<ul style="list-style-type: none"> <li>• Accountability</li> <li>• Fund implication</li> </ul>

### *Communication skills for change agents*

- Understanding communication processes
- Understanding influencing processes

### *Principles for effective communication*

- Messages are easily distorted
- Need to make sure that things are clear to *you* before you transmit the message
- The receiver must know how to decode messages
- Communication is a two-way process
- Verbal and non-verbal communication are both important
- Mode of communication may create some discomfort
- You must understand your subject

### *Skills needed as organizational gender change agents*

#### **Technical**

Knowledge  
Professional and qualification  
Experience  
Facilitation skills  
Good listener  
Clarity  
Analytical  
Language (verbal and non-verbal)

#### **Behavioral**

Charisma  
Flexibility  
Courage  
Self-expression (mannerisms)  
Dress  
Inter-personal skills  
Respect  
Good manners

#### *Barriers to communication*

- Language
- Gender
- Perception and attitude
- Cultural barriers
- Dictatorial behavior
- Lack of feedback system
- Intimidation
- Poor understanding of social or cultural context

#### *Issues of power in communication*

- Pay attention to different types of power
- Study the environment

### **Understanding organizational change**

#### **Phases of organizational change**

- Pre-launch phase
- Launch phase
- Post-launch phase or further implementation
- Sustaining the change

#### **Change occurs at three levels**

<b>Level of change</b>	<b>Content emphasis</b>	<b>Process/application</b>
Individual	<ul style="list-style-type: none"><li>• Individual motivation</li><li>• Reward system</li><li>• Individual performance</li><li>• Job satisfaction</li></ul>	<ul style="list-style-type: none"><li>• Career development</li><li>• Reward &amp; incentive system design</li><li>• Work environment</li><li>• Job &amp; work redesign (ToRs)</li></ul>
Group	<ul style="list-style-type: none"><li>• Norms, values &amp; attitudes</li><li>• Congruence of words &amp; actions</li></ul>	<ul style="list-style-type: none"><li>• Changing conformity patterns</li><li>• Changing executive behavior towards greater congruence</li></ul>
Larger system (organizational & institutional)	<ul style="list-style-type: none"><li>• Management style &amp; approach</li><li>• Organizational interfaces, especially external environment &amp; internal structure</li></ul>	<ul style="list-style-type: none"><li>• Moving toward participative management</li><li>• Changing structure (capacity development; policy; incentive systems; ToRs)</li></ul>

### ***Typical models and responses in processes of organizational change***

<b>Situation regarding gender in the organization</b>	<b>Typical responses of management/ dominant group</b>	<b>Typical responses of other employees/ subdominant group</b>	<b>Typical model of facilitator</b>	<b>Typical strategies of facilitators</b>
Gendered organizations	Defensive; easily accused; insulated by power	Passive; lacks awareness	The lone pioneer; frequently stigmatized; feels victimized; sometimes like a frozen rabbit; needs support base	Putting gender on the agenda by explaining; giving facts and figures; formal/informal organizing
Gender-aware organization	Feels attacked, intimidated; sometimes overly impressed and eager to be politically correct	Increasingly aware, but afraid to rock the boat; others who feel threatened by change turn the facilitator into a lightning rod	The fighter; charismatic, fast moving; risk-taker; not afraid of conflict; has a small support base in the organization	Use arguments based on ideology and values; forms strategic alliances (inside & outside the organization)
Gender-sensitive organization	Cares about the organizational gender image; is interested in making alliances with facilitators; needs support in policy development and implementation	Prepared to support management; in need of skills and tools to bring policies into practice	The player; tries to "play" the organization; recognizes opportunities; negotiates; is diplomatic and flexible	Building planning, monitoring and evaluation systems; mechanisms for learning and accountability; promotion of innovative practices; outside networking

### ***Monitoring and evaluation for impact***

Monitoring and evaluation:

- provide indications of the extent of progress and achievement of objectives during the process;
- involve continuing observation and systematic collection of data relevant to self, management and main stakeholders (feeds evaluation);
- consist of systematic and objective assessment of ongoing or completed project, program or policy;
- determine the relevance and fulfillment of objectives, efficiency, effectiveness, impact and sustainability;
- can be internal or external.

### **Definition of concepts**

- **Output:** physical products, institutional and operational changes, improved skills and knowledge achieved by the project/program as a result of good management of inputs and activities, i.e. **immediate, visible, concrete and tangible consequences** of project inputs.
- **Outcome:** **effect** or **consequence** of a program in the **medium term**, i.e. result that is the logical consequence of achieving a combination of outputs.
- **Impact:** **ultimate planned** and **unplanned** consequences of a program; an expression of the changes actually produced as a result of the program. Typically realized several years after the program has stabilized or been completed. Monitoring and evaluation are integral and critical components as they form the foundation for assessing impact and provide building blocks.
- **Indicator:** explicit measure used to determine performance; signal that reveals progress towards objectives; means of measuring what actually happens against what has been planned in terms of quality, quantity and timeliness. Ideally, indicators should be "SMART," i.e.
  - Specific (qualifying what should be achieved)
  - Measurable (quantifiable where possible)
  - Attributable (strongly linking achievement to expected performance)
  - Realistic (that data/information can be collected reliably, cost effectively and to time)
  - Time bound (stating when achievement must be reached)

Indicators should be refined through several consultative iterations. They will not apply to all situations, projects and institutions.

### **Some dos and don'ts**

- When assessing impact, measure and report what you have caused, prepare for *ex-post* assessments.
- Prepare plausible bridges between project benefits and wider impacts.
- In planning, consult widely and agree on tools, approaches, indicators, benchmarks, time frames, who is responsible for what; conduct mid-term review (including making necessary adjustments) and final reporting (document outputs, process and lessons for the future).

### **Some concerns:**

- How to assess impact of short-term projects—impact, outcome or output, time, attribution.
- How to respond to demands to demonstrate impact even before outputs are in place.
- How to measure higher-level impacts—gender and social welfare.
- Do we have tools to deal with the above?
- How to fit gender with wider policy concerns, organizational change.

## Workshop outcome

### Country work plans 2005–2006

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Ethiopia</b>  Towards gender mainstreaming in national agricultural research systems: the case of Ethiopia Agricultural Research Organization (EARO)	<ul style="list-style-type: none"> <li>To create awareness and build the capacity of researchers about gender-responsive research and its relevance in agriculture</li> <li>To generate gender-desegregated data-set and identify and prioritize gender-based constraints</li> <li>To suggest appropriate gender-responsive intervention options that help overcome gender-based constraints</li> <li>To facilitate gender-mainstreaming process in the organization</li> </ul>	<ul style="list-style-type: none"> <li>Conduct sensitization workshop for research and management staff of EARO</li> <li>Establish gender team</li> <li>Conduct a gender-analysis training</li> </ul>	Sep–Dec 2005
		<ul style="list-style-type: none"> <li>Conduct a gender-analysis case study</li> <li>Literature review</li> <li>PRA survey</li> <li>Focused quantitative survey</li> <li>Report writing</li> </ul>	Jan–May 2006
		<ul style="list-style-type: none"> <li>Conduct a national planning workshop with decision-makers and relevant stakeholders</li> <li>Implementing existing national action plan</li> </ul>	June 2006

Country & title	Proposed objectives	Targeted activities	Time frame
<b>DR Congo</b>  Baseline on PRGA perception and utilization level within the agricultural research and development organizations in Kinshasa and Bas-Congo Provinces	<b>General objective:</b> <ul style="list-style-type: none"> <li>• Institutionalization of PRGA within agricultural research and development organizations</li> </ul> <b>Specific objectives:</b> <ul style="list-style-type: none"> <li>• Determine content and planning strategies for PRGA change on individual, group and/or organization</li> <li>• Introduce change launch on agricultural research and development organizations</li> <li>• Extend PRGA concepts and tools</li> </ul>	Baseline study: <ul style="list-style-type: none"> <li>• Identification and sampling of R&amp;D organizations</li> <li>• Designing semi-structured guide and questionnaire</li> <li>• Keyboarding semi-structured guide and questionnaire</li> <li>• Recruitment, selection and training of enumerators</li> <li>• Testing surveys guide and questionnaire</li> </ul>	November 2005
		Team field work: <ul style="list-style-type: none"> <li>• Conducting focus semi-structured surveys and surveys based on questionnaires in Kinshasa and Bas-Congo provinces office work</li> <li>• Data codification</li> <li>• Keyboarding of data on EpiData</li> <li>• Data transfer from EpiData to SPSS</li> <li>• Data tabulation</li> <li>• Data analysis and interpretation</li> <li>• Reporting</li> <li>• Exploiting reports 1 and 2 for next stage</li> </ul>	Feb-Apr 2006
		Planning for change: <ul style="list-style-type: none"> <li>• Activities to be conducted on individuals, group and/or organizations rely on the results of baseline study</li> </ul>	March-May 2006
		Extension of PRGA concepts and tools: <ul style="list-style-type: none"> <li>• Design of PRGA reference documents to be distributed to end-users</li> <li>• PRGA documents production</li> <li>• PRGA documents promotion</li> <li>• PRGA documents distribution</li> </ul>	

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Kenya</b>  The enhancement of participatory research and gender mainstreaming in NARS: the case of KARI	<ul style="list-style-type: none"> <li>Assess and document the impact of gender-sensitive participatory research outputs</li> <li>Identify and document gender issues that control agricultural production in the various farming systems within KARI's mandate districts</li> <li>To review and upgrade the KARI GARD (Gender and Agricultural Research Database) to include the information documented (above) and any other available information</li> <li>Train KARI researchers and their collaborators on PR and GA, using information documented (above) as part of training materials</li> <li>Evaluate and develop appropriate mechanisms to sustain the gender mainstreaming efforts in KARI</li> </ul>	<ul style="list-style-type: none"> <li>Assessing impact of PR and GA on agricultural technology development, transfer adoption and continued use</li> <li>Generation of information on gender issues in the various farming systems within KARI's mandate districts</li> <li>Sourcing and building of available information on gender and agricultural development</li> <li>Training of managers, gender advisors and KARI researchers on gender-sensitive participatory research</li> <li>Workshop to develop mechanisms/strategies to sustain gender mainstreaming in KARI and propose appropriate structural changes</li> </ul>	Aug-Dec 2005
			Jan-Feb 2006
			August 2005
			Mar-Apr 2006
			July 2006

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Madagascar</b>  Challenges of gender mainstreaming in FOFIFA	<p><b>General objective:</b></p> <ul style="list-style-type: none"> <li>• Identification of the opportunities and limitations in gender mainstreaming at the level of FOFIFA</li> </ul> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Finalization of "gap assessment"</li> <li>• Understanding of the use of gender concepts in different services and projects "familiarized" for possibility of methodology duplication in FOFIFA</li> <li>• Change-agent capacity-building by conducting gender-analysis research activity</li> <li>• Sensitization of FOFIFA's scientists through training</li> </ul>	<ul style="list-style-type: none"> <li>• Setting task force</li> <li>• Gap assessment finalization (individual, group)</li> <li>• Understanding of the use of gender concepts in different gender-sensitive services and projects for possibility of methodology duplication in FOFIFA</li> <li>• Designing and conducting research activity integrating gender issues</li> <li>• Information exchange on data gathered on: <ul style="list-style-type: none"> <li>- Gap assessment</li> <li>- Understanding of the use of gender concepts in different services</li> <li>- Gender-analysis research activity</li> </ul> </li> <li>• Final report writing</li> <li>• Dissemination/ stakeholders workshop</li> </ul>	<p>Sep 2005</p> <p>Sep–Nov 2005</p> <p>Sep 2005 to Jan 2006</p> <p>Oct 2005 to Feb 2006</p> <p>April 2006</p> <p>April 2006</p>

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Rwanda</b>  Gender analysis in participatory promotion of climbing beans in Rwanda: case study of Runyinya in Butare Province	<p><b>General objective:</b></p> <ul style="list-style-type: none"> <li>To promote client's demand-driven research through PR &amp; GA</li> </ul> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>To analyze the role of gender participation in research design, general crop production, participatory variety selection (PVS) and income distribution system</li> <li>To strengthen efforts for PR in the promotion of climbing beans with balanced gender roles</li> <li>To accelerate the scaling out of climbing-beans technologies</li> <li>To provide future direction to the national bean program in breeding varieties and related agronomic practices to address both biotic and abiotic constraints.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct survey on farmers' and researchers' bean selection criteria</li> <li>Create awareness on PR&amp;GA for ISAR authorities and researchers</li> <li>Conduct on-farm and/or on-station trials</li> <li>Analyze data from trials</li> <li>Conduct seminar to share the results and decide together the way forward (entry point)</li> <li>Develop ISAR action plan for mainstreaming gender; scaling up the final results (dissemination)</li> </ul>	<p>Early to mid-August 2005</p> <p>End of August to early September 2005</p> <p>Sep-Dec 2005</p>

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Sudan</b>  Enhancing chances for mainstreaming of PRGA in the Agricultural Research Corporation (ARC)	<b>Goal:</b> <ul style="list-style-type: none"> <li>Contribute to setting up a conducive environment for technology development and transfer leading to better adoption with regard to PRGA</li> </ul> <b>Purpose:</b> <ul style="list-style-type: none"> <li>Create positive attitude among staff toward PRGA, as well as to help policy-makers to pay more attention to the concepts by introducing and implementing required policies, favoring PRGA</li> </ul>	<ul style="list-style-type: none"> <li>Carry out impact assessment as well as document experiences of previously implemented programs and projects related to PR and reflect upon lessons learned and experiences</li> </ul>	Aug-Dec 2005
		<ul style="list-style-type: none"> <li>Complete the organizational analysis through individual meetings and interviews and share the results, after synthesis, with the staff of ARC through seminars and workshops as needed</li> </ul>	Dec 2005 to Feb 2006
		<ul style="list-style-type: none"> <li>A series of training seminars and workshops will be adopted as a tool for raising awareness and sensitization of the targeted audiences toward PRGA</li> </ul>	March 2006
		<ul style="list-style-type: none"> <li>Create an institutional forum from concerned agencies to characterize and internalize the PRGA concepts through agreed upon mode of action (formation &amp; operationalization of working group)</li> </ul>	Feb-May 2006

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Tanzania</b>  Status and opportunities for institutionalizing and mainstreaming gender in national agricultural research system in Tanzania	<p><b>General objective:</b></p> <ul style="list-style-type: none"> <li>To assess the status of gender-issues incorporation in technology development, and institutionalizing and mainstreaming gender in NARS</li> </ul> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>To assess the extent of incorporating gender issues in research activities in different projects</li> <li>To sensitize decision-makers to be in position to support gender mainstreaming (policy formulation and set aside budget for gender activities)</li> <li>To build capacity of research staff</li> <li>To identify opportunities and existing gaps</li> </ul>	<ul style="list-style-type: none"> <li>Undertake a case study in the Eastern Zone to assess the status of gender incorporation in technology development efforts in the agricultural systems</li> <li>Training of researchers &amp; extension staff in Eastern Zone</li> <li>Sensitization of decision-makers</li> </ul>	Sep–Nov 2005  Mid-Feb 2006  May 2006

Country & title	Proposed objectives	Targeted activities	Time frame
<b>Uganda</b>  Participatory research and gender mainstreaming in the National Agricultural Research Organization (NARO), Uganda	<p><b>General objective:</b></p> <ul style="list-style-type: none"> <li>• Mainstreaming participatory research and gender analysis in the research system</li> </ul> <p><b>Specific objectives:</b></p> <ul style="list-style-type: none"> <li>• Sensitize NARO staff on participatory research and gender mainstreaming in the research institutes</li> <li>• Sensitize top management on the need for PR and GA in organizations, and the success cases elsewhere</li> <li>• Establish the integration of gender in research projects</li> <li>• Document gender-analysis success cases (develop flyers, bulletins, newspapers)</li> </ul>	<ul style="list-style-type: none"> <li>• Form the Gender Team</li> <li>• Identify the research projects to be assessed and meet with the project leaders</li> <li>• Conduct sensitization workshops for NARO staff on PR and GA</li> <li>• Produce documents about PR and GA</li> <li>• Data analysis and report writing</li> <li>• Conduct a national workshop for top managers/policy-makers and stakeholders</li> </ul>	Sep 2006  Oct–Nov 2005  Jan 2006  Mar–May 2006  Mar–May 2006  By May 2006

## **Appendix 9: Plant breeding book: Contents**

### ***Origins of agriculture and breeding***

Covering the evolution and domestication of crop species with an emphasis on the role of farming communities in terms of genetic structure of populations and associated knowledge of the environment, uses, etc. The focus will be on how an understanding of these aspects helps breeders to achieve their goals.

### ***Theory of plant breeding***

Includes principles of Mendelian and quantitative genetics, mating systems, gain from selection, genotype-by-environment (G by E) interaction, importance of G by E interaction for crop improvement, major causes of G by E interaction, how to minimize G by E interaction, and elements of a successful selection strategy. Breeding for broad and narrow adaptation. Looking at the implications of such knowledge for the choice of breeding methods.

### ***Main stages of a plant breeding program***

The main topics are: setting priorities, generating diversity, selection of parents for crossing programs, generating experimental cultivars, evaluating experimental cultivars, and dissemination of elite superior cultivars. Including traditional and non-traditional views (i.e. farmer participation).

### ***Methodologies for priority setting***

How to set priorities, including participatory rural appraisal; importance of each trait, farmers' knowledge, social consideration, and market orientation.

### ***Methodologies for generating variability***

This chapter is divided into four parts to cover different alternatives to generate genetic variability to be managed within breeding programs.

- *Use of genetic resources in plant breeding.*  
Gene banks, need of more collection, importance of the genetic resources, characterization, and core collections.
- *Selection of parents and crossing strategies*  
Including examples of selection of parents from global germplasm databases maintained by SINGER/IPGRI. Types of crosses, criteria to select them, genetic diversity, importance of genetic diversity, and how to measure genetic diversity.
- *Developing base populations for recurrent selection*  
Criteria for developing base populations; identifying parental material; methods for intermating parental material (including hand-crossing, genetic male-sterility and random mating in isolations); population improvement; choice of methods; diversifying breeding; and populations with farmer participation.
- *Mutation breeding*  
Mutation breeding in generating new variability, more practical aspects such as *in-vitro* techniques, techniques used for seed-propagated crops and techniques used for vegetatively propagated crops. Case studies and examples.

## **Selection methods**

This chapter is divided in six parts to cover the most common breeding methods; the emphasis is on stakeholders' participation

- *Organizational aspects of a participatory breeding program*
- *Pure-line breeding*  
Including description of the method, when it can be useful, off-season generation advance, single seed descent, single pod/panicle descent, bulking-stage choice.
- *Hybrid breeding*  
Including description of the method, breeding hybrid parents, combining ability, when it can be useful, and hybrid production.
- *Backcross breeding method*  
Including the methodology, when to use backcross breeding, conventional backcross method, and backcross assisted by markers.
- *Developing open-pollinated varieties using recurrent selection methods*  
Mass selection, progeny based methods of recurrent selection, reciprocal recurrent selection of two populations, and methods for deriving and maintaining open-pollinated varieties.
- *Breeding clonally propagated crops*

## **Breeding for specific traits**

- *Farmers' perceptions and scientific analysis of traits and trait complexes.*
- *Breeding for resistance to biotic stresses*
  - Breeding for resistance to diseases
  - Methodology
  - Types of resistance
  - When and how to breed for stable resistance
  - When and how to breed for complete and durable resistance
- *Breeding for insect resistance*
  - Components of insect resistance
  - Screening methods for assessing different components of resistance
  - Methods of breeding for resistance
- *Breeding for resistance to abiotic stresses*
  - Methodology
  - Most common abiotic stresses
  - When and how to breed for stress
- *Breeding for nutritional and culinary quality traits*
  - Protein and protein quality
  - Fatty acid content and quality
  - Starch and starch quality
  - Micronutrients and Vitamins
  - Processing qualities and Taste
  - Stover quality and digestibility for ruminant animal nutrition
  - Breeding for the needs of industry
- *Enhancing crop yields*

### ***Marker-assisted selection***

Including what are the molecular tools available, when to use MAS, and its limitations. Covering not only MAS use in conventional breeding but also in PPB.

### ***Conventional and marker-assisted selection***

Areas of plant biotechnology research, interface between biotechnology and breeding, opportunities, cost-effectiveness, trade-off between time and financial resources, and internal rates of return.

### ***Evaluation and targeting varieties***

Giving guidelines.

- Principles for resource allocation for variety testing
- Methods for farmer participatory evaluations of new varieties
- Statistical tools for increasing efficiency of variety testing
- Methods for targeting and recommending varieties

### ***Variety diffusion***

- Variety release and policy options. Including full-scale discussion of international treaties and their influence on germplasm exchange, IPRs, material transfer agreement, etc.
- Seed production and diffusion, including production strategies, seed quality and purity, and diffusion strategies. Legislation and institutional issues are important.

### ***Sharing responsibilities and division of labor***

Sharing responsibilities across the cycle of a plant breeding program with a wide array of partners—institutional issues arising from participation

### ***Breeders' rights and IPR issues***

Breeders' rights, protection of New Varieties of Plants (UPOV), intellectual property rights, farmers' rights, etc.

### ***Role of private and public sector in plant breeding research and development***

Long- and short-term goals, changes occurring in developing countries and implications for public-sector breeding programs, situations where private-public sector alliances useful to society.

### ***Impact assessment***

Input and output of breeding programs and how to measure plant breeding impacts.

### ***Gains from plant breeding in the future***

Covering the importance of policy, the role of biotechnology, genetic modification, the nature of investment, etc.

## **Appendix 10: Planning workshop of the Eastern Himalayan Network**

### ***Objectives***

- To orient participants to project goals and activities;
- To develop criteria for selecting partner organizations, research sites and rural women's networks;
- To develop project plan of action with:
  - Workshops dates & venues
  - Meetings with partners
  - Training needs assessment (for partners and participants).

### ***Development of criteria for partner selection***

- Institutional partners
  - Process of partner selection (how do you know who meets the criteria?)
  - Training needs assessment of partners' skills and knowledge in gender analysis
  - Preparation of partners for workshop—general orientation to Project, SA/GA.
- Community partners
  - Selection of rural women's groups with institutional partners
  - Capacity-building needs assessment
  - General orientation of project
  - Identify agro- and NTFP-enterprise opportunities with rural women.

### ***Indicators for project goal achievement***

Five indicators of social change are defined as:

1. Shifts in definitions
2. Shifts in behavior
3. Shifts in engagement of community
4. Shifts in policy
5. Maintaining past gains.

The group discussed these various forms of social change, and related their own experiences to these various stages; some had achieved gains in behavioral change, others in community engagement. All agreed that this framework was a useful way to develop indicators for change within this project, and there was much interest in putting these to use immediately.

### ***Development of indicators for partner selection***

Participants came with the names of two or three institutions they were considering as partners and reasons why these groups were selected.

## ***Selection criteria***

### *Institutions*

- Existing policies for gender, improved extension, farmer participation, etc.
- Policy to engage with rural women
- Willingness to engage demonstrated by management and at other levels
- Implementing official mandates, offers incentives?
- Accessibility to rural women
- Offers services that meet rural women's needs for agriculture and NRM.

### *Individual change agents*

- Characteristics of change agent
  - Risk taker
  - Innovative
  - Committed
  - Personal skills, such as facilitation
  - Ability for abstraction
  - Natural communicator (able to persuade others)
  - Strategic thinker
  - Female (preferable, but not essential)
  - Knowledge of women's networks
  - Women who feel "pinched," marginalized
  - Empathy with poor rural women.

## ***Orientation of partner institutions***

Following the selection of partner institutions, the project team members will be responsible for the orientation of the partner institutions before the capacity-building workshop. This can be done in various ways, including:

- Meeting directly with staff of institution (half or full day)
- Talking informally with management
- Discuss women's groups that could potentially be worked with (probably just 2 or 3, depending on budget constraints, physical distances between groups, etc.)
- Capacity-building workshop includes a 2-day gender-analysis course
  - Project team will conduct gender training
  - Project team will coordinate, draw up draft agenda, finalize with others and then determine who does what.

## ***Roles of mediators (change catalysts)—members of the project team***

### ***Expectations***

- Mobilizing commitment from own organization
- Selecting partner organizations
- Continual dialog with partners
- Orienting partners
- Mentoring
- Identifying women's networks in conjunction with the partner institution

- Acting as trainers for partner organizations and women's networks
- Communicating with other mediators
- Linking to external resources
- Continually reflecting
- Acting as link between rural women and partner organizations
- Understanding existing opportunities and constraints or rural women's access to partner institutions
- Creating spaces for rural women to have a voice and input to decision-making within partner institutions
- Ensuring that women's voices and decisions are represented in partner organizations' planning
- Ownership to partner organization
- Reflecting on experience and documenting best practices
- Engaging in monitoring and evaluation process.

## Appendix 11: Abbreviations and acronyms

ABM	Advisory Board Meeting
AfNet	African Network for Soil Biology and Fertility
AGM	Annual General Meeting
ARC	Agricultural Research Corporation, Sudan
ASA	American Society of Agronomy
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
BSc	Bachelor of Science
CARE	Cooperative for Assistance and Relief Everywhere, Inc., based in the USA
CAU	China Agricultural University
CD-ROM	compact disk – read-only memory
CFPRE	Cassava Farmer Participatory Research Project
CG	Consultative Group on International Agricultural Research
CGIAR	Consultative Group on International Agricultural Research
CIAL	Committee for Local Agricultural Research ( <i>Comité de Investigación Agrícola Local</i> )
CIAT	International Center for Tropical Agriculture ( <i>Centro Internacional de Agricultura Tropical</i> ), based in Colombia
CIDA	Canadian International Development Agency
CIMMYT	International Maize and Wheat Improvement Center ( <i>Centro Internacional para Mejoramiento de Maíz y Trigo</i> ), based in Mexico
CIP	International Potato Center ( <i>Centro Internacional de la Papa</i> ), based in Peru
CNDSF	<i>Coordination Nationale pour la Défense des Semences Fermières</i> , France
CNRS	<i>Centre national de la recherche scientifique</i> , France
CONPAB	Consultative Workshop on Participatory Plant Breeding
CORD	College of Rural Development (CAU, Beijing, China)
CORPOICA	<i>Corporación Colombiana de Investigación Agropecuaria</i>
CP	Challenge Program (on Water and Food, of the CGIAR)
CWANA	Central and West Asia, and North Africa
DC	District of Columbia, USA
DOA	Department of Agriculture, Thailand
DOAE	Department of Agriculture and Extension, Thailand
Dr	Doctor
DR	Democratic Republic (in DR Congo)
E	environment
EARO	Ethiopia Agricultural Research Organization
ed.	editor(s)
e.g.	<i>exempli gratia</i> , for example
EHESS	<i>Ecole des Hautes Etudes en Sciences Sociales</i> , France
ESAP	Ethiopian Society of Animal Production
etc.	<i>etcetera</i> , and so on
FAO	Food and Agriculture Organization of the United Nations, based in Rome, Italy
FOFIFA	National Center for Applied Research on Rural Development ( <i>Centre National de Recherche Appliqué au Développement Rural</i> ), Madagascar
FPR	farmer participatory research
G	genotype

GA	gender analysis
GARD	Gender and Agricultural Research Database ( <i>of KARI</i> )
GCP	Generations Challenge Program ( <i>of the CGIAR</i> )
GMO	genetically-modified organism
GWG	Gender Working Group listserv ( <i>of the PRGA Program</i> )
IA	impact assessment
IARC	international agricultural research center
IAS	Institute of Agricultural Sciences, Vietnam
ICARDA	International Center for Agricultural Research in the Dry Areas, based in Syria
ICRAF	World Agroforestry Centre, based in Kenya
IDRC	International Development Research Centre, Canada
i.e.	<i>id est</i> , that is
IFPRI	International Food Policy Research Institute, based in the USA
ILAC	institutional learning and change
ILRI	International Livestock Research Institute, based in Kenya
Inc.	Incorporated (company)
INRA	<i>Institut National de la Recherche Agronomique</i> , France
INRAT	<i>Institut National de la Recherche Agronomique de Tunisie</i>
INRM	integrated natural-resources management; Integrated Natural Resource Management Group
IPG	international public good
IPGRI	International Plant Genetic Resources Institute, based in Italy
IPR	intellectual property right
IPRA	Participatory Research in Agriculture ( <i>Investigación Participativa en Agricultura</i> ) (CIAT project)
IRDEN	Integrated Research on Durum Economics Network (ICARDA project)
IRR	internal rate of return
IRRI	International Rice Research Institute, based in the Philippines
ISAR	<i>Institut des Sciences Agronomiques du Rwanda</i>
ISFM	integrated soil fertility management
ITDG	Intermediate Technology Development Group
KARI	Kenya Agricultural Research Institute
KU	Kasetsart University, Thailand
LDD	Land Development Department, Thailand
MAS	marker-assisted breeding
MBA	Master in Business Administration (postgraduate degree)
MNHN	<i>Muséum National d'Histoire Naturelle</i> , France
MPA	Master of Public Administration
Mr	Mister
NARI	national agricultural research institute
NARO	National Agricultural Research Organization, Uganda
NARS	national agricultural research system(s)
NDSU	North Dakota State University, USA
NGO	non-governmental organization
NISF	National Institute for Soils and Fertilizers, Vietnam
No.	number
NRM	natural-resource(s) management
NRMP	Natural Resource Management Program ( <i>of ICARDA</i> )
NTFP	non-timber forest product

OD	organizational development
p.	page(s)
PB	plant breeding
PBG	Plant Breeding Group (Participatory Plant Breeding Working Group of the PRGA Program); listserv of same
PDF	Portable Document Format (Adobe)
PDR	People's Democratic Republic (in Lao PDR)
PhD	Doctor of Philosophy (doctorate degree)
PNRM	participatory natural-resource management; listserv of PNRM-WG
PNRM-WG	Participatory Natural Resource Management Working Group ( <i>of the PRGA Program</i> )
Pp./pp.	pages
PPB	participatory plant breeding
PR	participatory research
PRA	participatory rural appraisal
prep.	preparation
PRGA	participatory research and gender analysis; CGIAR Systemwide Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation
PRGA Program	CGIAR Systemwide Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation
PRODESUD	Agro-pastoral Development and Local Initiatives Promotion Program in the South-East (ICARDA project)
PROINPA	<i>Fundación PROINPA "Promoción e Investigación de Productos Andinos,"</i> Bolivia
PVS	participatory varietal selection
R&D	research and development
RUAF	Resource Centres on Urban Agriculture and Food Security
SA	social analysis
SINGER	Systemwide Information Network for Genetic Resources ( <i>of the CGIAR</i> )
SIUPA	Strategic Initiative on Urban and Peri-Urban Agriculture ( <i>of the CGIAR</i> )
SPIA	Standing Panel on Impact Assessment ( <i>of the CGIAR</i> )
SPII	Seed and Plant Improvement Institute, Iran
SWOT	strengths, weaknesses, opportunities and threats
TNAU	Thai Nguyen Agricultural University, Vietnam
ToRs	terms of reference
TTDI	Thailand Tapioca Development Institute
UAF2	University of Agriculture and Forestry II, Vietnam
UBINIG	Policy Research for Development Alternatives ( <i>Unnayan Bikalper Nitinirdharoni Gobeshona</i> ), Bangladesh
UPOV	International Union for the Protection of New Varieties of Plants
UPWARD	Users' Perspectives with Agricultural Research and Development ( <i>of CIP</i> )
UK	United Kingdom
US	United States (of America)
USA	United States of America
VASI	Vietnam Agricultural Sciences Institute
vol.	volume
WANA	West Asia and North Africa
WARDA	Africa Rice Center, (temporarily) based in Benin
WSU	Washington State University, USA

