More than technology alone, participatory technology development is about behavioral and institutional change. Thus while technology is being reengineered on one hand, institutional change is carried out through the transformation of organizational norms, beliefs and values that lead to the restructuring of institutions. It affects the set of competencies and rewards structure, and the general way individuals behave and interrelate. The institutionalization of PTD therefore cannot be separated from issues of organizational change.

PTD can be regarded as "institutionalized" when it is part and parcel of the regular activities of an organization involved in agricultural research and development, be it an institute of research, extension, higher learning, or farmers organization. It refers to change in institutions so that they are capable of engaging in PTD. Groverman 2000 shows that in complex institutional change, one has to look at the mission and mange of the institute, the structure and the human resources not just at a technical-administrative level but also at a political (power and decision making) and sociocultural level (norms and values).

This chapter discusses internal organizational issues and recommendations in advancing PTD through institutionalization. It covers structures, systems and processes, capacity building, networking and other forms of collaborative
work, and transaction costs based on insight from the experience of practitioners in research institutes, extension programs and farmers organizations. The case study from Ethiopia lists indicators of success and gives an example of the range of linkages that resulted from institutionalization. A discussion on advocacy and power issues follows in the last chapter.

**ETHIOPIA: WHAT IS INSTITUTIONALIZATION OF FPR?**

Institutionalisation is a process through which new ideas and practices are introduced, accepted and used by individuals and organizations so that these new ideas and practices become part of "the norm" (Sutherland 2000). Institutionalisation of a new approach involves change and development within the targeted organizations. It is more than a policy or intention, more than a strategy or plan, and more than an activity or method.

In the FARM-Africa project in Ethiopia, "institutionalization" of FPR is defined as the incorporation of FPR tools and procedures in the regular activities of organizations mandated to work with farmers. It refers to the routine application of practices that actively engage farmers in a decision-making role in identifying and prioritizing production constraints, defining and testing potential solutions, and selecting and adopting/adapting technologies that enhance agricultural production and productivity.

According to the project document FPR would be considered to be "institutionalized" if the following were achieved by the end of the project period:

- clear awareness and appreciation of the concept and philosophy of FPR at all levels
- knowledge and skills to plan and implement FPR are acquired and developed
- institutional structures that facilitate the incorporation of FPR approaches are created
- adequate resources in terms of skilled staff, funds and logistical support for implementing FPR are made available
- effective linkages among relevant organizations and the farming community to enhance coordination and experience sharing are created
adequate incentives are made available to encourage adoption of tools and procedures of FPR and to develop respect for farmers’ knowledge and skills among staff of relevant organizations.

In light of this, the following outputs are being pursued in order to realize the objectives of the project:

- ensuring the support of Council (i.e. elected government) members, policy and decision makers at various levels to facilitate the institutionalization of FPR
- creating favorable awareness of FPR among those who influence the environment for project implementation
- providing training in PRA, POFTs, training of trainers (ToT) and participatory monitoring and evaluation (PM&E)
- establishing more organized information and database systems
- establishing a functioning organization and management system for FPR activities
- ensuring the participation of farmers in all processes, and the linkage of technology generation to extension and input supply
- establishing systems of participatory monitoring and evaluation.

Institutional linkages

The institutionalisation project is multi-institutional, involving all the key actors directly or indirectly involved in technology generation and transfer. These are the BoA (from Rural Development Centres to regional level), Awassa and Areka Agricultural Research Centres, Awassa Agricultural College, the Bureau of Planning and Economic Development and, of course, farmers. The institutions mentioned above were involved right from the project preparation stage and have a considerable sense of project ownership. The processes of planning and implementation, as well as monitoring and evaluation of the project, are joint ventures in which the institutions cooperate very closely.

While the prospects for gaining commitment of the key players are good, the changes needed in institutional procedures have still not taken place. Staff members at various levels in the partner organizations are now beginning to recognize more clearly that changes are required with respect to disbursement of funds, job descriptions and research review procedures. There are still problems related to funding the FPR activities in the field, especially travel and per diems, and for facilitating (e.g. through transportation) and funding additional activities not foreseen in the
original project proposal, such as travelling seminars for Farmer Research Groups.

FARM-Africa was deliberately kept as a separate entity in the institutionalisation process (i.e. not part of a government institution) and was meant to help all the partner institutions acquire the knowledge and skills to carry out FPR and to set up the necessary structures and linkages to institutionalize FPR. FARM-Africa is meant to play a coordinating role only temporarily, until the government institutions take over the coordination within the lifetime of the project (i.e. not after a "handover" at the end of the project).


Structures for institutionalizing PTD

Institutionalizing PTD does not happen in a vacuum. Processes within organizations make it possible. Participatory approaches in planning, implementing, monitoring and evaluation make for a firm foundation. Thus throughout the organization, management should consciously search for opportunities for participatory practices. Before this could happen, however, each organization should identify its role or "niche" in PTD partnerships, e.g., facilitating farmer organization, providing technical backstopping for farmer-led experimentation, strengthening farmer-to-farmer extension.

How is the work of PTD to be organized? This question is raised mostly by professional research organizations that need a major shift in the way they are to see science and their role vis-à-vis farmers. (The previous chapter illustrates the differences in the way different entities need to negotiate this change.) Some say research organizations should have a special PTD unit, others are satisfied with having a contact person. Some would advise to keep the organization lean and incorporate as much of PTD into existing structures. Others such as the South African research council developed a "virtual organization" to mainstream PTD into older structures. So great is the flexibility demanded in PTD processes that a new set of tasks has been identified and dubbed "linkworking," a function that helps networking to happen.
A special "PTD Unit" may not be needed to take care of PTD while the rest of the organization continues working as before. There will probably be a need for a "PTD taskforce" or "PTD team" that reflects and plans and coordinates the process of change throughout the entire organization and facilitates links both within the organization and with other organizations concerned with PTD. Initially, this team may itself be actively involved in PTD activities in the field, so that the institutional learning can be based on these experiences.

THE USES OF A 'VIRTUAL INSTITUTE' IN THE INSTITUTIONALISATION OF PTD

Tim Hart

Since its inception as a para-statal agency in 1992, the South African Agricultural Research Council (ARC) has undergone fundamental changes in policy, practices and structure. From 1994 the ARC was mandated to work with smallholder farmers. Previously the researchers mainly worked with and for the commercial agricultural sector. This mandate necessitated a number of changes. The changes that have already been completed include:

- The development and structuring of a programme to provide services to smallholder farmers;
- The restructuring of the various research institutes to accommodate such a programme;
- The appointment of coordinators and teams and the use of matrix systems to facilitate the activities among the various institutes;
- The formalization of a national programme or 'virtual institute' to coordinate this programme at the national and the institute level.

In 2000 a 'virtual institute' was established. Called the Sustainable Rural Livelihoods (SRL) Institute, it was mandated to coordinate the rural livelihoods programme of the ARC in all its institutes. The virtual institute had an acting director and a team of coordinators from each of the ARC institutes. These coordinators met every 6-8 weeks and some members served on the monthly Day Management Team of the SRL Institute. As this strategy emerged, parallel transformation was taking
place in the research and extension work of the ARC national structure. The ARC started moving away from institute-based activities to a more integrated programme approach with aims to expand collaboration between institutes and thereby provide more holistic services to all the ARC clients. By the end of 2000, the SRL Institute was called the SRL Corporate Programme and, starting April 2001, it was provided a permanent Director, Deputy Director and Secretary. As they did in 2000, The SRL coordinators at the institutes meet regularly with the Director and Deputy Director.

A ‘virtual institute’ or crosscutting programme as is developing at the ARC in South Africa might resolve some of the issues and in fact facilitate the institutionalisation of PTD to:

- Promote awareness and acceptance of PTD in all institutes via the coordinators and institute team members;
- Promote an awareness and acceptance of PTD outside of the ARC at the national level;
- Carry out a coordinated lobby for various types of support for PTD;
- Install a standardized programme and require personnel at all the institutes so that they can use PTD;
- Ensure the integration of the various disciplines and specialists within the programme at various institutes so that they are available where required;
- Reduce elements of poor cooperation that have obstructed the programme, thereby ensuring that the programme follows acceptable practices and attains its goals;
- Ensure that proposals and practices conform to the accepted PTD framework;
- Serve as a mechanism for the national monitoring and evaluation of the institutionalisation and scaling-up processes within the ARC and other partner organizations;
- Provide a forum for and ensure that innovations, experiences and best practices from different areas and institutes are shared; and,
- Facilitate the dissemination of information to farmers in contact with other institutes and organizations.
Mechanisms for internal sharing and learning

A PTD-oriented organization puts a premium on listening, sharing and learning thus creates structures and mechanisms that support these processes. The following should be considered:

- Organizations need to have flat structures. Do away with hierarchal multilevel structures, as these tend to squelch new ideas from the "work floor" at any of these levels.

- A simple mechanism can be put in place to encourage staff to come up with new ideas. Even if not fully developed, think the unthinkable. What is needed is a place where these ideas can be collected, and an occasional (6-month) review through regular meetings.

- Sufficient content-oriented meeting places are needed. These need to be vertical so that managers, senior staff and field implementers meet to review PTD experiences. The presence of farmers and all researchers at these levels in project or program steering committees can boost interest in PTD. These gatherings also need to be organized among peers so that colleagues get exposed to PTD type of work. The hope is that a few well-organized formal meetings may also lead to more informal meetings and sharing.

- Particularly in research organizations, one needs to develop confidence and mutual trust that the sharing of research findings at an early stage will not take away ownership by the researcher(s) nor will it lead to co-

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*PTD-related process issues should be included in the organization’s M&E formats. This implies that M&E gives information not only about the technical parameters of the experiments but also on issues such as the awareness among researchers of farmers’ needs and potentials, the capacity of farmers and extension partners to continue experimenting on their own, and the extent of spread of the technologies being studied. Social scientists can contribute a great deal in facilitating and documenting this type of M&E.*

*At a meta level, M&E of the changes occurring at the level of the researchers, they way they approach collaboration with farmers and their interest in real farmer concerns indicate the extent to which PTD has become institutionalized.*
authorship of those involved in the sharing. Putting this issue explicitly on the table can help.

The process of institutional change towards incorporating PTD into everyday operations requires an internal participation M&E process. PTD process issues should be included in the organization's M&E formats.

The case from the African highlands describes an attempt to develop and use outcome monitoring, an M&E system that puts the spread of PTD within the agenda of the research organization and advances the process of institutionalization.

**OUTCOMES OF USING PARTICIPATORY RESEARCH**

Concerns with outcomes monitoring arose for a number of pragmatic and strategic reasons. Recent shifts in AHI strategy have given more emphasis to processes and methodologies development rather than the conventional focus on technology generation, going back to the major deficits identified in research processes - leading to poor adoption. Increasingly, participatory research is less and less concerned about generating deliverable technologies (high yielding varieties, soil fertility recommendations, integrated pest management options) but is becoming more concerned with behavioral and institutional changes necessary for self-application and/or adaptation of information, materials, etc. to improve their system which needs to be sustained over time. The focus on outcomes monitoring is justified by the fact that participatory research is essentially a learning process. Outcome monitoring is therefore an alternative M&E process that provides stakeholders with timely information about their progress and achievements for systematic and collective learning, reflection and corrective action. AHI then specifically sought and received financial support (in 1998) from the International Development Research Center (IDRC) to use participatory research to develop a framework, processes and methods to enhance M&E of research outcomes in NRM activities.

The major outcomes expected from using participatory research are related to behavioural change, resulting benefits and finally impact. The outcome monitoring process has been used to assist researchers in action learning in the three strategic areas.
Some of the behavioural changes we are seeing as a result of using participatory research methods, and resulting benefits being to make research more responsive to farmer needs and adjustment of the research agenda to being more relevant:

- first hand appreciation of the diversity of farmer problems
- incorporation of farmers’ criteria into technology design and technology evaluation
- multi-disciplinary teams increase appreciation of socioeconomic factors by biophysical scientists
- identification and use of ITK and appreciation for farmer innovation adds value
- expanding the integrated application of technologies through farmers adaptation and use of system improvement principles
- generation of win-win technologies (those that improve food, feed, income and environment) using farmer-led experimentation
- collaborative activities and synergies between farmers, development partners and researchers have improved chances for change.

In summary, researchers have analyzed the effects of participatory research on themselves, on their research programs and on farmers, highlighting the impact of the increased interactions with their colleagues and farmers. They all indicated that they had improved their skills in managing the interactions in the various stages of research (diagnosis, planning, M&E and evaluation). In addition, researchers were enlightened about each other’s disciplines which was reflected in the design of the activities they were involved in and felt that "team work", although initially difficult, was paying off. Some examples from the two sites in Ethiopia are shared in the table.

**General lessons learned in the application of outcome monitoring**

- Researchers had always focused on biophysical aspects of the research process, but due to emphasis on the need to reflect on how the research process is affecting them, their research programs and interactions with colleagues and farmers has now been recognized as important aspects.
- Workshop series and periodic performance review meetings have given the team members an opportunity to openly discuss the challenges in
## Comparative assessment of interdisciplinarity when conducting participatory research in Areka and Ginchi, Ethiopia

<table>
<thead>
<tr>
<th>Site</th>
<th>Effects on scientists</th>
<th>Effects on the research programs</th>
<th>Interactions with colleagues</th>
<th>Interactions with farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREKA</td>
<td>Enhance problem solving capacity at farm level</td>
<td>Embrace inter-disciplinary and commodity research</td>
<td>Increased interactions</td>
<td>Understanding of farmers problems and opportunities</td>
</tr>
<tr>
<td></td>
<td>Learning from other disciplines</td>
<td>Complementarity of disciplines</td>
<td>Increase communication</td>
<td>Learn about farmers ITK</td>
</tr>
<tr>
<td></td>
<td>More workload</td>
<td>Research work more open to comments</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GINCH I</td>
<td>Researchers appreciate contributions of others</td>
<td>Improved the quality (content and methods) of research</td>
<td>Better understanding and communication</td>
<td>Understand farmers problems</td>
</tr>
<tr>
<td></td>
<td>Researchers develop better skills of working as a team</td>
<td>Improved acceptance of results</td>
<td>Flexibility</td>
<td>Know more about ITK</td>
</tr>
<tr>
<td></td>
<td>Time constraints</td>
<td>Improves communication</td>
<td>Understanding of production constraints</td>
<td>Learning from one another</td>
</tr>
<tr>
<td></td>
<td>Help avoid disciplinary bias</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
adapting the outcome monitoring tools, the participatory research process, modifications, and areas that require further capacity building and institutional support.

- When facilitated, researchers could highlight lessons learned but had difficulty in changing documentation and reporting habits. Some confessed that they did not think it was important to report on the qualitative changes that are not tangible and quantifiable.
- Organizational constraints that limited the use of participatory research approaches such as logistics, availability of collaborators, and expectations from the national programs were difficult to overcome given the current organization of research.
- Identifying the specific areas to be monitored during site planning meetings ensured commitment.
- This approach to monitoring helped to demystify the negative connotation given to monitoring as a component that serves a policing function and promoted dialogue that furthered fine-tuning and integration.
- The group approach used provided an opportunity for joint learning and sharing among the different researchers and target communities. Those researchers lagging behind could learn from those that are pacesetters.
- Concept definition is important to create confidence among the team members and ensures everyone is on the same wavelength.
- Implementation has to be flexible and needs to allow for adjustments and modifications.

Source: Opondo C., Sanginga P. and Stroud A., Monitoring the Outcomes of Participatory Research in Natural Resources Management: Experiences of the African Highlands Initiative.
Partnerships

Effective partnerships for PTD are a key mechanism for influencing research organizations. These organizations need to be ready by adjusting their internal environments following these guidelines:

- Objectives in the partnership need to be relatively broad if a convergence of goals is to be reached. Being rigid could turn off partners. Thus if a research team wishes to work only on one aspect of one disease in one particular crop it is not likely to find NGOs interested in a joint project.
- Annual participatory review and planning meetings, with specific attention to farmer participation
- Researchers can create flexibly by including some unallocated funds so that other researchers can be drawn into the PTD process if critical issues arise beyond the competence of the lead researcher(s).
- Enough time and open mechanisms (including short workshops) need to be foreseen for in-depth negotiation of the collaboration. This could help overcome mistrust and arrive at agreement on joint objectives. Project proposals may have to include such a start-up phase.
- Researchers and their institutes may have to attract prospective partners by publicizing their organization’s readiness to collaborate. These may be done through publications, informal discussion and seminars. PTD practitioners must seize opportunities to invite people from other institutions to share and learn about each other’s experiences in institutionalizing PTD.

Beyond the individual organizations, there should be a consortium or platform of partners, including donor organizations, to foster cross-institutional learning, to enhance collaboration and to reduce competition. Much can be learned from previous experiences in institutional change, e.g., with respect to Farming Systems Research or gender awareness.

Partnerships can be developed using the Landcare approach and its three core elements: appropriate technologies, effective local community groups (institution building), and partnership building between farmer organization, local government units, and technical facilitators including line agencies, academe and research institutions. The figure below shows how participatory technology development is nurtured by local institutions (at different levels) with ICRAF playing primarily a support and facilitative role.
Figure 1. The core of landcare approach as promoted by ICRAF and its partners in Southern Philippines.

**Paying for PTD**

For all the goodwill that goes around PTD, its institutionalization maybe costly. Those wishing to engage in it must then answer the question: who invests in the institutionalization of PTD? Who decides on how funds will be used and on the criteria for allocation? Who pays for PTD? Should farmer organizations pay for PTD costs? What role should donors be allowed to play? Are they also accountable for feedback results? Can partners be truly independent of donors and donor agenda?
Research institutions should be aware of the costs involved in institutional change and the related processes of awareness-raising, internal and external lobbying, partnership building, transactions and negotiations. They should be prepared to make financial investments in the process and access sources to cover these costs.

Thus, a major indication of institutionalization of PTD is the allocation of budgets to PTD-related activities. Mechanisms need to be created to allow farmer organizations to influence the policy of research and development.
institutes. One way to do is to welcome farmer involvement in decisions on
the use of research funds.

Securing adequate funds when they are needed is important for the
institutional sustainability of PTD. This, however, would require thinking
beyond donor funds and entail serious efforts to build capacities among
farmer organizations to generate or access funds.

While the support of donors is actively sought, their role in PTD and its
institutionalization must also be examined. Do their policies create
cooperation or competition? Donor orientation could influence the PTD
process and draw it to such valid concerns as governance and gender equity
but away from the research agenda. Some donors do not fund research line
items.

Workshop participants stressed the need to move towards decentralizing
decision-making regarding budgeting and fund allocation. This decentral-
ization will need to be considered both in NGOs and research institutions.
For instance, research institutions with national headquarters and field offices
will need to look into the key issue of whether funds are to be placed in the
head office or in the field. Although most researchers are based in national
institutes, funds also need to go to teams where the action is to take place.
Controls will then be required to ensure there is no misuse of funds.

Red tape in national and local bureaucracies could stall and stop PTD
institutionalization. For this reason, local governments and politicians need
to be the targets of advocacy and promotional efforts to ensure that PTD
partners can access tax revenues for agricultural development. Municipalities
can, for instance, create revolving funds for local innovation and
experimentation to sustain PTD processes.

**Entry and exit issues and processes**

Partners need to recognize that PTD methods evolve in the course of implementing a
programme. Successes bond partners and move the programme forward. As the program moves
ahead, and relationships change over time, so too do the roles of different actors. As each new phase

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**Organization may have to change its role if it does not intend to leave the area at the end of the project period.**
begins, new objectives will need to be set and met. The questions then are raised: if partnership has a beginning does it have an end? Is there a place for withdrawal or exit strategies at the start?

Discussing exit strategies at the start of the partnership helps ensure that the local structures that arise out of the PTD projects are empowered to undertake the task beyond the project framework and sustained without external interference. This empowerment and sustainability in the post-project period must be embedded in the planned organization. (Proponents are cautioned against starting if they are doubtful of project feasibility.) It may get out of the geographic area but continue working with the farmers' organization through referral systems and other support services. Nevertheless, an NGO that does not intend to leave the area despite a successful project may transform itself to engage in new areas of work within the same community.

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2 Report Theme Group 9