



# AHI Methods Guides

AHI METHODS GUIDES No. E1

**ACTION RESEARCH: An Approach for Generating Methodological Innovations for Improved Impact from Agricultural Development and Natural Resource Management**

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## **The AHI Methods Guides**

The AHI Methods Guides series was developed as a medium for AHI staff and partners to synthesize the innovative methods and approaches developed, tested and validated in AHI benchmark sites and from institutional change work carried out in the region. Contributions to the series include methods for system diagnosis and planning; targeting intervention strategies; facilitating change at farm, watershed, district or institutional level; monitoring and evaluating change or impacts; and structuring the innovation process overall. AHI Methods Guides are organized under five thematic areas:

- *Theme A* – Strategies for Systems Intensification (with an emphasis on the farm level)
- *Theme B* – Participatory Integrated Watershed Management
- *Theme C* – Collective Action in Natural Resource Management
- *Theme D* – Policy and Institutional Reforms
- *Theme E* – Improving Research-Development Linkages

The targets of these papers include agricultural research, development and extension organizations and practitioners with an interest improving their practice and impacts; and policy-makers interested in more widespread application or institutionalization of methods in their areas of jurisdiction.

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## INTRODUCTION

The African Highlands Initiative has a mandate of generating methods and tools for integrated natural resource management (INRM) at farm and landscape levels. Many aspects of INRM are new to conventional research and development practice. “Integration” requires stepping outside of disciplinary boundaries, learning to understand and manage the interactions between system components (crops, livestock, trees, soil, water), and learning how to bridge technological with other development support systems (social innovations, policies, market linkages). “Participation” also carries new challenges. More than simply encouraging widespread attendance at community meetings, “participation” requires an understanding of diverse and often competing interests at district, landscape, community and even household levels and requires strategies for accommodating these diverse interests. This implies mechanisms to enhance equitable decision-making and outcomes, and for empowering groups often marginalized from decision-making and development benefits. Moreover, AHI has had to operationalize INRM at farm, landscape and district levels. This introduces a host of new challenges such as understanding and managing landscape-level processes (component interactions, flows of nutrients and water), stakeholder interactions and interdependencies (conflict, collaboration, incentives), and the role of formal and informal institutions (including both formal social groupings and social norms or rules guiding behavior). What this means is that AHI is ultimately about understanding and managing complexity, with a focus on catalyzing methodological innovation.

AHI’s stated mandate is to produce methods and approaches that are *products* or *outcomes* of research and innovation. However, the process of generating these methods and approaches requires its own set of tools and innovations. How does one stimulate innovation in a context of highly standardized institutional norms behaviors<sup>1</sup>? How can new approaches and methods be tested – through controlled experiments in different locations, or through an iterative process of trial and error in any given context? How can information be generated systematically not only on the current situation, but on *processes* of change and transformation? How can research be embedded in innovations designed to bring *localized* impact, but also generate lessons for the global community? Such are the challenges that AHI has faced in striving to fulfill its complex but highly relevant mandate.

In the process of meeting this challenge, AHI has developed a series of methods and approaches to aid in the process of methodological innovation itself. This AHI Methods Guide describes a methodology for conducting action research (AR) in the context of generating methodological innovations for improved impact from agricultural development and natural resource management. While action research is not new, this particular application of action research in the context of systematic testing of methodological innovations is an emerging science. Lessons learnt from doing it in practice across a host of contexts and in partnership with diverse organizations may be of use to others struggling to bridge the divide between systematic inquiry (research) and impact-oriented practice (development).

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<sup>1</sup> Research institutions worldwide may be characterized, for example, by similar structures and practices. Departments are organized by discipline, with production departments separated from “natural resource management” departments, social from biophysical sciences. Research is often conducted on-station, and whether on-station or on-farm tends to follow highly formalized methods for controlling bias (trials, controls, etc.). Similarly, at national and district levels, institutional mandates tend to separate research from development, and draw somewhat artificial boundaries on landscapes and social life (between agriculture and conservation; water, health and land use; policy and natural resource management).

## JUSTIFICATION

### THE DISCONNECT BETWEEN RESEARCH AND PRACTICE

Despite many decades of development-oriented research, global challenges to economic development, sustainability and social justice are today as great as ever. While knowledge generation is but one of many contributing factors to development outcomes, researchers are being held increasingly accountable to concrete outcomes by both donors and end users (Meinzen-Dick et al., 2003). This is because while research in some fields has yielded significant advances for human health and welfare, in others its impacts have been limited despite considerable investment (Hammersley, 2004; Meinzen-Dick et al., 2003). The limited impact of research can be traced in large part to the institutional disconnect between research and research methods on the one hand, and development practice on the other (Agbamu, 2000). As stated by Hammersley:

“There are times when we initiate inquiry ... without having been stimulated by a practical problem. Moreover, science and philosophy have become institutionalized; in other words, they are specialized occupational activities that are carried out outside the immediate context of other activities – and they therefore generate their own intellectual problems. Even where they are oriented towards providing knowledge relevant to some practical issue, they do not usually form an immediate part of courses of action directed towards dealing with that issue ...” (2004:170).

The disconnect between research and development also emanates from attitudes held by researchers and development practitioners about one another. The greater status awarded to theory over practice in Greek and Western philosophy, for example, continues to shape attitudes of researchers towards practitioners and farmers. The institutionalization of research as a specialized form of inquiry and the negative backlash to action research within the scientific community are both evidence that this distinction is alive today (Hammersley, 2004). Closer partnership with development actors is partially hindered by attitudes researchers bring to the table about the kind of knowledge and information that counts. While these attitudes generally are not openly contested by others, they nevertheless shape the success of partnerships, technologies and the role of formal research in development. Similar biases shape the attitudes of development practitioners toward research. With the notable exception of the health sector, where research outputs (medicine) have clear implications for development, failure of much research makes its impact on development outcomes has caused many practitioners to marginalize the role of systematic inquiry in their development practice. Among development practitioners and farmers alike, research is equated largely with the biophysical sciences, and with a very narrow range of biophysical science focused on the “hardware” of agricultural production (germplasm, agronomic practices, etc.). It is also seen to have little bearing on the “how” questions related to enhancing impact that development practitioners struggle with most.

In short, this historical disconnect between research and practice has shaped the nature of institutions, scientific inquiry, and roles and responsibilities in knowledge creation. To some extent, it also seems to have institutionalized a lack of concern, methods and skills for bridging the divide within both research and development circles.

Action research is increasingly seen as a promising approach for improving the impact of research on development and change (Baker and Benjamin, 2000; Dick, 2002; Hagmann and Chuma, 2000; Hammersley, 2004; Reason and Bradbury, 2001). This is envisioned in multiple ways, ranging from the new definition of research objectives and methods to the reformulation of



roles (from outsider observer to participant, individual to collective). Yet while action research is gaining ground in Western academic establishments, it has yet to take hold with agricultural research and development circles in terms of its perceived validity, funding levels, and the degree to which it has been institutionalized in educational, research and development circles.

## WHAT IS ACTION RESEARCH?

Action research is exactly that – action-oriented research. It focuses explicitly on *process*, in this case on processes of development and social change. In the context of agricultural development and natural resource management, this might include testing different approaches to enhancing farmer innovation; mechanisms for linking farmers to markets; strategies for improving governance of landscape processes (movement of water, soil and pests); and approaches to institutional change (for impact-oriented research). By superimposing research or systematic scrutiny on action, new lessons can be learnt that may otherwise be lost to observation. These lessons are gained by creating spaces to reflect on process – including what was done, how it was done, the outcomes and lessons learnt. Lessons learning is also strengthened by making observation more systematic, for example by clarifying the area of concern (improved livelihoods, equity and sustainability); the framework of ideas that structure research (for example, key challenges to development, sustainability or equity and related knowledge gaps) (Checkland and Holwell, 1998); the research questions (which often emphasize how to address these challenges); and the methodology (what will be observed and documented, and how). Each of these helps to sift out what is significant from the sum total of what is learnt – in other words, to determine which findings really count as knowledge (Checkland, 1991; Checkland and Holwell, 1998).

Action research starts with participatory action research (PAR) or participatory action learning (PAL). This is a process in which the immediate beneficiaries themselves, whether local communities, institutional representatives or policy makers, play the primary role in designing and conducting research. The objective here is to enhance impact in the context under study – whether community-level change processes, institutional change or policy reforms. However, as applied in AHI, action research does not stop here. AHI has a mandate to generate international public goods in the form of “working methods and approaches”, in this case for integrated natural resource management. Therefore, we must move beyond solving site-specific problems to distill lessons of broader relevance for the international community. This requires an additional level of abstraction and analysis that may not be of interest to the immediate beneficiaries<sup>2</sup>. It also requires a particular set of skills to link site-specific circumstances to a broader global community (knowing what challenges and knowledge gaps exist elsewhere); to observe fine details of process (observing how people react to processes when facilitated in certain ways, reading body language, understanding how process relates to outcomes); and to understand how to link the particularities of local-level learning with generalization. While the protagonists (immediate beneficiaries) play a fundamental role in defining research, monitoring progress, adjusting the approach and evaluating impacts, it is generally researchers who play a primary role in managing research quality. In short, action research encompasses, but is not limited to, participatory action learning (Box A).

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<sup>2</sup> In AHI, we have found rather that the liaison function of drawing explicit linkages between site-level experiences and the interests and concerns of a broader global community tends to empower local actors (farmers, development partners) to care for what they do and to want to share their experiences with others.

**Box A. Defining Terminology: Action Research and Participatory Action Learning in AHI**

*Participatory Action Learning*

Participatory action learning empowers the actors themselves (individuals, communities, institutions) to identify key development bottlenecks, and to experiment with different approaches for addressing and ultimately breaking through them (Barnsley and Ellis, 1992; Kelly et al., 2004; Trout et al., 2003). This requires a participatory, iterative form of research that is embedded in local communities (or other actor-based contexts) and internalized or owned by the actors themselves.

This form of actor-based learning and empowerment has been well-documented through the literature under the names of participatory research, experiential learning, social learning, participatory action research and participatory action learning (Fals-Borda, 1988; Maarleveld and Dangbégnon, 1999; Röling and Wagemakers, 1998). We choose the term “participatory action learning” (PAL) to encompass this less formalized, actor-based learning grounded in shared experience found within each of these traditions. PAL may be carried out within research and development (R&D) institutions as a process of institutional change, by local communities as they seek solutions to common problems or by policy-makers as they seek ways to improve policy implementation processes. The approach is composed of iterative cycles of action and reflection at community, institutional or national level that empowers by placing the nexus of development strategizing in the hands of the actors or beneficiaries themselves. Increasingly, PAL approaches are utilized within social learning and multi-stakeholder contexts, where multiple actors collectively construct meanings (problem definition, objectives) and work collectively toward solutions (Maarleveld and Dangbégnon, 1999; Pretty and Buck, 2002). Methods for ensuring quality in PAL include planning and monitoring frameworks, effective facilitation and an inclusive change process that effectively integrates broad-based concerns and perspectives.

*Action Research*

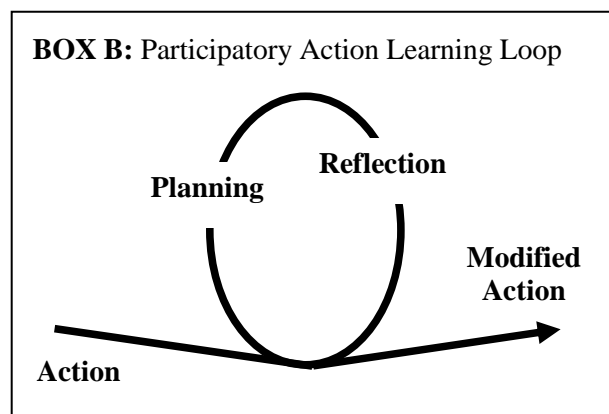
Action research builds upon localized learning experiences to generate broader lessons on the key elements to successful processes of development and social change (Greenwood and Levin, 1998). Such process-related research can aid in understanding barriers encountered, and ways to overcome these, when trying to decentralize decision-making, foster market-oriented production, reform policies and institutions, enable stakeholder negotiation, or foster collective management of natural resources (Hagmann, 1999; Percy, 1999; Sanginga, 2004). The research dimension aids in documentation and systematization of lessons as target activities are implemented, monitored and adjusted through time, providing answers to the questions, “What works, where and why?” Observations focus on how things were done to enable successful outcomes, including key bottlenecks encountered, how they were addressed and the derivation of key elements of successful change processes. The ultimate objectives of such research may be to advance theory, to improve the effectiveness of the specific change process in which research is embedded, or to influence development practice more broadly through distillation and dissemination of general lessons and principles.

Action research can utilize retrospective analysis of change to generate lessons from comparative research, or through interactive forms of research grounded in actual experiential learning and change processes. While the former may facilitate comparison of a wider range of cases, the latter can generate deeper understanding. This is due to tendency to lose information through recall, and the need to distill lessons from a thorough understanding of challenges encountered in action, the elements of successful and unsuccessful means of addressing these challenges, and continuous capture of the views of the actors involved.



The tendency to equate action research with participatory action learning may lead you to ask the question, “Why differentiate between the two?” Key action research proponents define action research as a flexible spiral process which allows action (change, improvement) and research (understanding, knowledge) to be achieved at the same time (Lewin, 1946; Dick, 2002) (Box B). Most authors also agree that action research shares the following common elements: a collaborative process between researchers and people in the situation; a process of critical inquiry; a focus on social practice; and a deliberate process of reflective learning (Argyris et al, 1982). None of these characteristics distinguishes action research from participatory action learning. Furthermore, action research is superimposed in time and space on participatory action learning, making “participatory action research” a logical terminology for encompassing the two. So why has AHI drawn a distinction between these two paradigms?

In AHI, the conceptual distinction between action research and participatory action learning came about in the process of developing “approaches that work” in specific contexts while also trying to generalize lessons for an international audience. Factors leading us to this were several. First, while professionals may be skilled in both areas, the skill base needed for effective facilitation and engagement in PAL is distinct from that required for effective systematization of experiences from one or



more PAL processes (action research). In PAL, a personal commitment to social change, effective communication and group management, and social awareness of group dynamics are valuable skills. In action research, while these same skills may strengthen observations of power dynamics and development process, research skills (documentation, validation, synthesis) are also crucial. Secondly, the immediate goals of the two differ. While in the former the primary aim is development impact (enabling localized social or institutional change), in the latter the most immediate aim is research – or the systemization of experiences to inform theory or derive general principles of application beyond the immediate actor arena. Third, an important distinction is made between action research designed to address localized problems, in which local actors or beneficiaries own the learning process and formalized data collection may be minimal without compromising the end goal, and that designed to answer “higher-level” questions of strategic importance to development practice beyond the specific case at hand – in which the process of inquiry is often more specialized or formalized. Finally, those action research proponents seeking to defend action research’s claims to validity believe that the research process must be recoverable through an explicit intellectual framework (framework of ideas, methodology and area of application) that will serve as a basis for determining which findings count as knowledge (Checkland, 1991; Checkland and Holwell, 1998). The interest in “recoverability” of an action research process clearly sets AR as “research” apart from PAL as “effective action”. Differentiation among the two approaches is not meant to subordinate one to the other; rather, it stems from an attempt to differentiate among them and see how they can be logically and operationally linked. Table 1 summarizes some of the differences between participatory action learning and action research, as defined and applied in AHI.

**Table 1.** Distinctions between Participatory Action Learning and Action Research as Operationalized within AHI (German and Stroud, 2007)

<b>Learning Approach</b>	<b>Roles in Defining the Research &amp; Learning Agenda</b>	<b>Characteristics of Research Design</b>	<b>Primary Role in Designing &amp; Managing Research</b>	<b>Research Outputs &amp; Applications</b>
<b>Participatory Action Learning</b>	<b>Immediate Beneficiaries</b> (who integrate lessons into the change process through periodic reflection and re-planning)	Informal; goals and pathways for achieving goals defined at outset but not rigidly adhered to; 'data' capture largely informal.	<b>Immediate Beneficiaries</b> (whether local communities, institutional representatives or policy makers)	(1) Approaches that 'work' relative to the end goals of a development or change process as defined by immediate beneficiaries (2) To guide a change process and strengthen chances of success through systematic reflection and self-learning
<b>Action Research</b>	<b>End Users</b> (immediate beneficiaries or off-site users of results); <b>Facilitators</b> (who may wish to generalize results)	Semi-formal; research questions defined at outset and fixed; methods of data capture may be relatively fixed or opportunistically defined to capture emergent realities.	<b>Researchers</b> (specialized skills required to manage research for quality, and to generate lessons and principles relevant to a wider audience)	(1) General principles about development and change processes, including the conditions under which diverse outcomes are reached (2) To help guide the development or change process on / within which research is conducted, or to generate general principles of relevance to managers of change in other locations with similar conditions

## THE RATIONALE FOR ACTION RESEARCH

In addition to juxtaposing action research with PAL, it is useful to consider the relative merits of action as opposed to conventional (formal, empirical) approaches to research. The following key aspects, derived from an informal brainstorm on the topic with AHI partners, helps to clarify what it means from the perspective of diverse actors in a methodological innovation system. Dimensions particular to action research (for which action research adds value to PAL) are highlighted in italics.

### *Added Value of Action Research (Relative to Conventional Research):*

- Conventional approaches to research do not directly solve problems, they only characterize them.
- Most action does not involve self-scrutiny (research), often leading to poorly targeted actions and – in the worst case – negative outcomes (elite capture, resource degradation, etc.).
- Planning and documentation of development approaches facilitates a clear definition of roles and responsibilities.
- Systematic reflection on process helps you discover steps you would have missed had you not thought about reflected on the approach used, creating room for improvement through self-evaluation (“Research is needed to develop good practice”).
- Documentation of practice helps in self-reflection, planning of next steps (to better align actions with targeted outcomes), and *in sharing lessons learnt with a wider audience*.
- Action research ensures participation and stakeholder ownership of actions, bringing up the voices of the marginalized.
- Action research facilitates solutions to immediate priorities, while also helping you prepare for more challenging medium and long-term objectives.
- Action research can be used to handle complex issues that cannot be proscriptively defined.
- *Comparative assessment across a set of case studies from a particular scenario (i.e. fostering collective action in natural resource management) grounds the action research in concrete realities that facilitate understanding.*
- *Action research fosters synergies between local and global learning, validating local challenges by connecting them to global scenarios and contributing useful experience to the global community.*

## OBJECTIVES

The overall aim of this AHI Methods Guide is to assist researchers and development practitioners to improve development outcomes by bringing systematic inquiry into development practice. Specific objectives include:

1. To make available a set of tools for action-based learning for the broader research and development community, to help bridge the gap between research and practice;
2. To teach others through a set of tools, and concrete cases where these tools have been applied, what action research entails in practice;
3. To dispel common myths and misunderstandings about action research.

## RESEARCH QUESTIONS

While phrased in a variety of ways, the underlying emphasis of action research questions is on the “how” rather than the “what.” In other words, rather than describing situations, they explore characteristics of effective change processes. Common ways in which action research questions may be phrased include:

- “What is an effective approach for [doing x]?”
- “How can [objective y] be effectively achieved in practice?”
- “What are the necessary conditions or processes for [outcome z] to emerge?”

As evidenced in the above examples, action research questions are targeted to particular objectives or desired outcomes. They seek to identify effective pathways to these objectives being achieved. These objectives may be defined in part by an international community seeking answers to longstanding challenges or problems, in particular in the context of programs such as AHI seeking to generate general principles from site-specific solutions. However, local stakeholders *must* play a role in defining objectives – whether generating new objectives based on local priorities or adapting global objectives to the local context – for action research to generate socially-relevant outcomes.

## SCENARIOS

This methodology may be used in any context where certain development or conservation objectives defy easy solutions. It may be used to accomplish localized objectives alone in the form of working solutions to these challenges, or to go a step beyond this to distill lessons for a broader audience. The latter may be done through a comparative assessment of strategies designed to address a common problem across multiple sites, or through an iterative process of improving the approach used in any given site so as to better align actions with desired outcomes. While the research community is inherently skeptical about efforts to derive general lessons from research lacking controls or counterfactuals (where reliable evidence cannot be generated to prove what would have happened in the absence of the innovation), our experience suggests that single cases can generate lessons of relevance to a broader audience. These lessons may not be in the form of specific actions and outcomes replicable independent of context, but rather a process of facilitating local stakeholders to generate a sequence of steps that work in context<sup>3</sup>.

While this methodology was developed through efforts to seek solutions to common agricultural and natural resource management challenges of smallholders, it is likely to be applicable to a much broader set of researchers and practitioners from the fields of health, education and other sectors. It has also proven to have merit when applied to institutional and policy changes at national scale (German and Stroud, 2007).

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<sup>3</sup> Yet, as will be demonstrated in the pages which follow, evidence *is* needed on the effectiveness of the approach when applied in a specific location, so as to bolster support for testing similar strategies elsewhere. This evidence should be comparative, illustrating the effectiveness of the new approach relative to the status quo (no innovation) or relative to common practice (other ways of doing business by communities, local government, research or development organizations).

## **TARGET GROUPS**

This methodology is designed for use a very wide range of end users. Researchers inclined to work toward practical solutions to everyday challenges can utilize the methodology to complement empirical research approaches. At the same time, development practitioners can utilize the methodology to learn more systematically from their interventions to learn lessons on what works, where and why. Yet the methodology extends far beyond research and development practitioners to local communities themselves who can benefit much in the same way as research and development practitioners from self-scrutiny of actions designed to address their problems as they are carried out. Much in the way that solving common development and conservation challenges can benefit from more systematic scrutiny of approaches, policy makers can also use this tool to foster more systematic learning on policy implementation processes and their effects. Lessons learnt through application of the methodology provide concrete suggestions for improvement in the actions being undertaken by each of these groups.

When this methodology is utilized by the beneficiaries themselves – whether they be local communities or R&D organizations – it may be termed “participatory action research.” However, it may also be used by organizations such as AHI to develop higher-level lessons for a broader community not directly involved in solving the particular issue at hand. In this case, action research is conducted to distill common principles of good practice across a set of cases, for which the end beneficiaries (i.e. farmers) may not be aware of or concerned about this ultimate goal. AHI has chosen to call this higher-level learning “action research” rather than “participatory action research”, even though lessons are learnt through highly participatory processes in any given location. The distinction, therefore, depends on your end goal – whether solving a localized problem or deriving more general lessons for a broader audience.

## **KEY STEPS IN THE APPROACH**

The methodology has been distilled into eight sequential steps. The first two are only required when entering a community or institution for the first time. In cases of ongoing research involvement, these two steps may have already been accomplished through past interventions.

### **STEP 1: SITUATION ANALYSIS**

Any action research process requires a clear definition of an area of concern and a framework of ideas to guide inquiry (Checkland and Holwell, 1998). In other words, it must be grounded in a particular problem or set of problems. Often, institutions interesting in initiating an action research process will have acquired a host of experiences that lead them to identify the importance of methodological innovation (or action research) in a particular area for which current practices are deficient. Even so, it is often important to conduct a systematic assessment of the problem to further refine it and further refine action research aims and outputs.

### **STEP 2: CONTACTING KEY STAKEHOLDERS**

The second step consists of establishing a legitimate role within the broader set of stakeholders working on the issue of concern. This is required at all relevant levels of engagement – community level, at diverse levels of local government, and on up to the level defined by the target audience (sub-national, national, regional or global). This networking is designed both to

support the research effort by engaging partners to be directly involved in the process, and to bolster the legitimacy needed to bring the ultimate findings to bear on decision-making within target institutions. It therefore serves multiple purposes, among these: authorization to engage in PAL and AR; legitimization of your role among a wider set of actors; fostering joint ownership in the process by direct beneficiaries (for PAL) and end users of lessons (for AR); and to solicit input on the most appropriate means to enter a community and engage in change.

### STEP 3: INITIATING PAL – PARTICIPATORY PROBLEM DIAGNOSIS & PRIORITIZATION

While action research starts with a framework of ideas and area of concern, these more global concerns must be grounded in priorities of *local* concern. Unlike PAL, local concerns are not in themselves sufficient for defining action research priorities, as action research must generate answers to questions of relevance to a broader audience. Defining the research therefore requires articulating the relationship between global questions and specific local concerns around which learning takes place. This requires a participatory problem diagnosis and prioritization process involving the main beneficiaries or actors themselves – be it for catalyzing local-level change processes, institutional reforms or more effective policies. To ensure that problems defined through bottom-up processes remain relevant to areas of global concern, criteria for problem identification and prioritization can be set ahead of time to inscribe the range of possible topics. To ensure the planning of action research adequately considers the recommendations of local stakeholders, tentative solutions can also be distilled at this time. These solutions should not be restricted to a particular sector or discipline; rather, social, policy, technological and market solutions should be explicitly considered.

### STEP 4: DEVELOPMENT OF ACTION RESEARCH PROTOCOLS

The next step consists of developing action research protocols to clarify to those responsible for distilling broader lessons (action researchers) the main scope of inquiry. These protocols are developed for *each* priority issue identified by farmers and screened for their relevance to global questions. The protocols integrate the suggestions of stakeholders (from Step 3) with the broader framework of ideas from which elements of effective change processes may be distilled. As action research questions are generally designed around problems that have defied solutions in the past, the larger framework of ideas generated from the literature, stakeholder consultations and/or prior experience is unlikely to hold answers to the “how” questions (how to effectively solve the problem). Rather, it will provide an opportunity to build upon what is known in the generation and testing of “best bet” approaches to change. By embedding these “best bet” change processes in an action context where the beneficiaries themselves and researchers jointly scrutinize the effectiveness of the approach as it is implemented, the chances of success improve as the approach is adapted to account for emerging challenges and lessons learnt.

### STEP 5: STAKEHOLDER ANALYSIS

This step consists of the identification and consultation of diverse stakeholders or stakeholder groups (i.e. individuals with common interests) around the issue of concern. This step is inherently different from the stakeholder consultations in Step 1. Stakeholders in Step 1 include the set of local and external actors and organizations operating in a particular area and with an interest or mandate over the issue in question (i.e. government and non-governmental organizations, communities, private sector, etc.). This subsequent stakeholder analysis, on the



other hand, looks at the “interest groups” having different economic or political stakes in the issue at hand. In other words, those groups *directly* affected by any decisions taken around the resource or problem of interest. They are often drawn from a single community, but may also involve interactions with outside entities. These groups may be identified through a number of approaches in the literature (Grimble and Wellard, 1997). Two approaches were tested in AHI. The first was borrowed from CIAT (Munk Ravnborg and Guerrero, 1997) and based on a form of “snowball” sampling approach, in which new interviewees are selected by asking the last interviewee to identify individuals likely to feel most differently from them about the issue. The second was derived from acquired experience on the questions around which stakeholders are commonly defined in watershed management. For each problem defined or caused by the presence of conflicting interests among different stakeholder groups, balancing attention to the interests of different stakeholders is made explicit in planning and participatory monitoring processes.

#### STEP 6: PARTICIPATORY PLANNING & NEGOTIATION SUPPORT

The next step involves participatory planning for PAL. Two different approaches to planning may be used. The first approach is used when all parties share a common concern and level of interest in solving a problem collectively. In this case, Step 5 is skipped and all actors are brought together into a single planning forum without consideration of their interests or stakes. Equitable decision-making processes must nevertheless be ensured through the process used to select participants, the skills of the facilitator and follow-up activities. In the second approach, stakeholders identified in Step 5 are brought together to negotiate “socially-optimal” solutions that balance the interests of each group. These solutions may include technologies, rules to back up agreements (in the form of by-laws or organizational policies), market linkages or human and social capital development (training, group development, etc.).

#### STEP 7: IMPLEMENTATION & MONITORING

The next step involves a protracted process of implementing and monitoring participatory action plans and stakeholder agreements. Unlike conventional research, the implementation process for action research does not necessarily follow a set of pre-established steps. The approach followed is actively influenced by monitoring that is done throughout the course of implementation, resulting in the modification or deepening of the original action plans. Step 7 therefore begins with the implementation of initial steps of participatory action plans, and subsequently follows an iterative series of steps of implementation, reflection (monitoring) and re-planning. These steps, implemented iteratively, ensure that learning and action occur simultaneously – with formal monitoring serving to formalize learning and ensure this is used to shape actions on the ground. The monitoring is done at two levels – by the participants themselves (communities, organizational representatives) and at project or program level (by process observers).

#### STEP 8: IMPACT ASSESSMENT

The final step consists of an impact assessment. While lessons important to the participants themselves may be learnt through a formal impact assessment, this step is not included for the sake of PAL per se. Rather, it is an essential step in distilling lessons for a broader audience and for reflecting back on hypotheses guiding the research. Therefore, such impact assessments should be *comparative* in nature – clearly illustrating how the new and the conventional approaches differ (in terms of their characteristics and the outcomes derived from them), and

relating outcomes to broader goals of the organization or research and development community. Impact assessments also help to assess whether hypotheses about “what works in practice” can be systematically tested. AHI has experimented with two types of impact assessments – empirical and participatory. Each has its respective merits and the ideal combination, provided sufficient personnel and funding, is to integrate both.

## DETAILED DESCRIPTION OF THE METHODOLOGY

### STEP 1: SITUATION ANALYSIS

Any action research process requires a clear definition of an area of concern and a framework of ideas to guide inquiry (Checkland and Holwell, 1998). In other words, it must be grounded in a particular problem or set of problems. Often, institutions interesting in initiating an action research process will have acquired a host of experiences that lead them to identify the importance of methodological innovation (or action research) in a particular area for which current practices are deficient. The following are examples of reasons why organizations in the agricultural sector might choose to engage in an action research process:

#### Community Level:

- Smallholders are unable to capture market opportunities and manage landscape-level natural resource management processes in the absence of collective action. However, weak institutions make community members mistrust one another, thinking their investments in collective action will not be matched by equal investments from others. We know from the literature that collective action depends on trust, which can in turn be enhanced through group rules and their enforcement through appropriate sanctions (punishments for non-compliance). PAL is used to strengthen farmer learning about self-organization for solving specific problems (capturing market opportunities, water conservation, sustainable forest management), while action research is used to distill general lessons about how to catalyze collective action when it is absent.
- Community forestry and protected area co-management are fraught with problems of elite capture of decision-making processes and benefits at diverse levels: within local communities, between communities (by dominant ethnic groups) and by corrupt government officials. An NGO wishes to catalyze a process for minimizing elite capture in a particular site. An action researcher from the local university suggests they use an action research process to move beyond site-specific solutions (PAL) to distill general lessons on the key barriers to equitable benefits capture and ways to overcome these. They decide to superimpose systematic scrutiny on localized innovation processes, and to link up with NGO staff from other districts generate additional lessons through comparison.

#### Institutional Level:

- Evidence suggests that agricultural research organizations are not achieving desired levels of impact. Several alternative research models exist, and research managers want to make informed decisions among them. They want to move beyond *comparing outcomes* among the three models to learning *lessons on “best practice”* within each. They decide to use action research to distill lessons from systematic reflection and iterative improvement as each of the three models is tested in practice. This will allow them to move beyond selection of the best-performing model to: (i) incorporate aspects

of each model proven to work best; and (ii) understand how to ensure quality implementation.

- An extension organization wishes to improve organizational performance by motivating its staff. Funding is limited, so they want to understand how to catalyze the greatest innovation at limited cost. They decide to let district-based teams suggest low-cost changes and to implement these through a participatory action learning process. Action researchers are hired to observe the changes in practice and document progress based on the indicators of farmers and extension agents, and their own observations.

#### Policy Level:

- A national program for demand-driven service delivery is experiencing problems with policy implementation that compromise specific policy and development goals. Action research is required to understand what is needed in practice to meet policy targets (i.e. equity, sustainability, market-oriented production).
- Evidence suggests an important linkage between land tenure and natural resource investments (sustainability) among smallholders. Policy-makers wish to pilot test different types of tenure innovations for their ability to balance livelihood and conservation concerns prior to full-scale roll-out, so as to reduce the risks associated with failed policy experiments.
- Policy makers wish to engage with a host of new economic opportunities associated with expanded trade and globalization to boost farmer incomes and national revenue, but they are fearful of elite capture and negative environmental effects. They engage in action research processes to understand what kinds of safeguards may be needed in practice to capitalize upon these new opportunities while minimizing associated risks.

As the above examples suggest, it is not always easy to differentiate between levels. This is because many such examples refer to innovation systems in which a confluence of actors and innovations jointly contribute to successful or unsuccessful outcomes. Action research on community-level innovations is often conducted by institutions who wish to generate lessons for their own practice, while policy reforms require local-level innovations and institutions for effective implementation. This does not pose any problem to action research; what is crucial is identifying the key levels at which challenges exist, levels at which learning on those challenges must take place, and the key actors who must be involved in learning and the uptake of lessons learnt.

Irrespective of the amount of experience an organization may have on a topic, this “situation analysis” can benefit from a more formal approach to problem definition. This is because any given problem is often seen differently by different stakeholders, and people’s perceptions may differ from reality. As part of an organization with a particular mandate, you may also have biases that you are not aware of that influence the way you see a problem. And sometimes we are simply “too close” to a problem to get an objective view of it. The following are examples of methods that may be used to characterize problems prior to action research interventions:

- Semi-structured interviews to gather the perceptions of diverse actors in a “system.” These might include local residents (broken down by gender, ethnicity or other relevant parameters), local government, line ministries, NGOs and/or the private sector. These interviews would generally focus on key barriers to achieving certain outcomes

(livelihoods, equity, sustainability), and key strategies or opportunities to be exploited when innovating.

- Formal surveys to characterize the current situation in terms of resource access, distribution of benefits within a population or people's perception on the primary barriers to achieving a certain outcome, or to cross-check people's perceptions.
- Biophysical research to characterize the current situation in terms of resource condition or to cross-check people's perceptions.

Often, such surveys highlight new aspects of a problem or strategic interventions that might be tested through action research. Where diverse sources of information contradict each other, action research might be designed to test hypotheses about the most critical challenges and the most effective solutions.

## STEP 2: CONTACTING KEY STAKEHOLDERS

The second step consists of establishing a legitimate role within the broader set of stakeholders working on the issue of concern. This is required at all relevant levels of engagement – community level, local government and on up to the level defined by the target audience (sub-national, national, regional or global). This networking is designed both to support the research effort by engaging partners to be directly involved in the process, and to bolster the legitimacy needed to bring the ultimate findings to bear on decision-making within target institutions. It therefore serves multiple purposes, among these: authorization to engage in PAL and AR; legitimization of your role among a wider set of actors; fostering joint ownership in the process by direct beneficiaries (for PAL) and end users of lessons (for AR); and to solicit input on the most appropriate means to enter a community and engage in change. The last of these might include identification of the most important organizations and stakeholders around the issue of concern; culturally or politically acceptable ways to enter into districts or communities; or inputs from end users on the nature of information, information delivery or end user involvement necessary to catalyze larger change from pilot learning sites. Often times, many of these processes are subsumed within broader organizational procedures of establishing a presence (legal and political) and establishing organizational structures and processes through which to work, and are not needed as stand-alone steps in action research. Efforts to engage with stakeholders *specific to* the area of concern is a necessary step, but will come later on in the action research process.

If your action research is conducted by an organization that does not already have an ongoing institutional presence in a site, as may be the case with a university or a research institution without a prior presence in selected research sites, this step will be necessary. It is often advisable to enter into a new site through official channels. This is often in the form of political and administrative structures, but depending on the location or the specific issue being addressed, it may also include traditional leadership structures or institutions with land rights or legal jurisdiction over an area (i.e. conservation agencies). Care must be taken not to over-involve powerful stakeholders at the outset, as they may derail processes of local empowerment or objective inquiry involved with action research. Ultimately, a balance must be reached between independence or objectivity in research, and the tact required to bring influence among important local stakeholders.

STEP 3: PARTICIPATORY PROBLEM DIAGNOSIS & PRIORITIZATION

While action research starts with a framework of ideas and area of concern, these more global concerns must be grounded in priorities of local concern. Defining the research therefore requires an interplay between global questions and local concerns around which learning takes place. Unlike PAL, local concerns are not in themselves sufficient for defining action research priorities, as action research must generate answers to questions of relevance to a broader audience. These questions of broader concern may be defined through a comprehensive literature review, stakeholder consultations (to ground action research priorities in the concerns and “demand” of end users) or both. The scale of this scoping (national, regional, global) should be matched to the targeted domain of influence or end users.

Once this general framework of ideas and challenges is defined, specific issues around which research will revolve to feed into this broader research domain must be defined. This requires a participatory problem diagnosis and prioritization process involving the main beneficiaries or actors themselves. If research is defined around issues at the community level, problem diagnosis should be done by community members themselves, taking care to ensure the voice of diverse sub-groups within the population are heard. If research is to be defined around issues at higher levels (institutions, policies), problem diagnosis and prioritization must be done at multiple levels – including top level decision-makers, mid-level managers or implementing agencies, and the local level. Table 2 summarizes methods that have been used in AHI for problem identification at diverse levels.

**Table 2.** Methods for Participatory Problem Diagnosis & Prioritization

Method	Characteristics	Source
<i>Community Level</i>		
Participatory Rural Appraisal	Diverse set of tools for spatial, historical and general diagnosis; tools lack a specific focus, requiring that they be adapted to the issue at hand.	Chambers (1992); IDS/IIED (1994)
Socially-Disaggregated Approach	Ensures diverse sub-groups within a population are systematically consulted (by gender, ethnicity, age or other relevant criteria).	German et al (in press)
Appreciative Inquiry		
<i>Institutional and Policy Level</i>		
Multi-Site Approaches	Qualitative, in-depth approach for exploring diverse actors or nodes (‘sites’) in a system; not explicitly participatory, but may be adapted to consult diverse actors in a system on their primary concerns.	Marcus (1995); German et al (2005)
Focus group discussions; Household surveys	These methods are consultative rather than participatory, but enable systematic assessments of actors’ views on a topic.	Bernard (1994)

To ensure that problems defined through bottom-up processes remain relevant to areas of global concern, criteria for problem identification and prioritization can be set to filter the list of local priorities and focus on particular types of innovations. See Box C for an illustration of how a set of watershed problems identified and prioritized by local communities were linked to global questions on collective action and equity in natural resource management.

## Box C. Matching Global Questions to Local Realities

### *Defining Global Questions: Strengthening Collective Action & Equity in NRM*

A sub-project of AHI funded by the Collective Action and Property Rights Program of the CGIAR aimed to explore the institutional foundations of natural resource management (NRM) – including local institutions and outside support agencies. The primary objective of this project was to develop and document successful approaches for facilitating *equitable* collective action processes and *negotiated* NRM solutions. This work was based on global literature on collective action and institutions in NRM, which highlighted what we know about local and external institutions. For the former, the literature had documented in detail the characteristics of local institutions (including social groups and rules on NRM) where *shared* resources had been managed sustainably (Leach et al. 1999; Ostrom 1990, 1999; Pandey and Yadama 1990; Wittapayak and Dearden 1999). These included: (i) locally developed rules on resource access and management; (ii) sanctions or punishments for those who break those rules; among others. This literature, however, had one key gap: whether and how these local institutions could be catalyzed where they are absent. The literature on outside institutions highlighted the role of development agencies in encouraging elite capture of natural resources and project benefits, but not how to manage elite capture for more equity. In short, each body of literature focused more on *understanding* than on *doing*. It was thought that negotiations among local user groups in the first instance, and between communities and outside actors in the second case, and formulation of rules to enforce agreements, could go a long way in enhancing equity in agriculture and NRM. Research sought to address these shortcomings by integrating institutional analysis (for problem identification and targeting of interventions) with action research (institutional interventions to develop approaches to strengthening local institutions and enhance equity). These were the global questions that framed site-level action research interventions.

### *Grounding Global Questions in Issues of Local Concern*

**Participatory Problem Identification** – AHI site teams had already conducted a detailed watershed diagnosis (situation analysis), leading to a host of issues requiring some form of collective action. Examples included:

1. **Transboundary effects:** free movement of pests, diseases and rodents across farm boundaries; negative impact of boundary trees on adjacent cropland; loss of seed, fertilizer and soil from excess run-off; crop destruction from free grazing;
2. **Common property resource problems:** inequitable access, poor management and/or degradation of grazing lands, springs, irrigation canals and waterways;
3. **Insufficient collective investment:** in community works (roads, schools); development investments (community bulls, mills, etc.); or resource conservation (local knowledge, germplasm).

Inequities in the practices of outside institutions were also identified in the CAPRI Situation Analysis, where focus group discussion with men and women were conducted to identify who benefits most and least from different local and outside institutions. The main issue raised was inequitable access to technologies and credit from research and extension organizations.

**Screening & Prioritization** – Two strategies were then used to screen this list of locally-identified problems according to global questions. During multi-stakeholder meetings, participants were first asked to screen this list of priorities according to a set of “bottom line” criteria that would ensure their relevance to global questions and action research being conducted in other sites. These included: (1) Requires collective action; (2) Involves change at multiple levels (local and higher); and (3) Involves current inequities or requires close attention to diverse local priorities when solving problems. The resulting list of issues was then prioritized.

Next, participants were asked to reflect on each of the screened and prioritized issues and articulate the role of diverse types of *institutional* innovations in addressing the problem:

1. **Local Negotiations:** What negotiations between different *local* interest groups are needed to improve equity and collective action on identified watershed issues? (What issues can benefit most from negotiations? What interest groups should be involved for prioritized themes?)
2. **Institutional Practice:** What should AHI and partner institutions working in Galessa do to ensure their interventions bring equal benefits to all watershed residents and foster collective action?
3. **Policy:** What existing by-laws or policies need modifications so that they are more easily implemented? What new natural resource management by-laws are needed to solve identified watershed problems?



**Box C. Matching Global Questions to Local Realities** (*continued*)

In addition to generating screened and prioritized issues to match local priorities to global questions (left-hand column of Table C1), this approach identified strategies (i.e. negotiation support, participatory rule-setting) known from the literature to be instrumental in fostering improved equity and more effective institutions. Outputs of this approach when applied in a multi-stakeholder context in Areka, Ethiopia, are summarized in Table C1. Please note that solutions proposed during multi-stakeholder fora were considered tentative until draft solutions were validated at village level and subsequent negotiation support events helped to refine solutions and related work plans.

**Table C1.** Output from Matching Global Questions to Local Realities in Areka, Ethiopia

<b>Problem</b>	<b>Negotiations</b>	<b>Institutional Practice</b>	<b>Policy Reforms</b>
Spring degradation (water quality & quantity)	Involve Peasant Association and religious leaders to foster negotiations between spring owners and users on how to minimize the effect of Eucalyptus on spring discharge; and community-wide negotiations on equitable contributions to spring maintenance.		By-law to replace Eucalyptus with profitable tree species that does not have negative impacts on springs (i.e. Gravelia).
Gender & wealth bias in technology dissemination	Negotiate access to technologies by groups facing barriers (women, the poor).	Counter gender and wealth bias in agricultural extension and credit.	By-laws to regulate how technologies should be governed at PA level (through which social units, rules for access).
Competition of boundary trees with crops	Involve Peasant Association and religious leaders to facilitate negotiations between cultivating and affected farmers on appropriate niches for Eucalyptus and substitute species.		By-law to replace Eucalyptus with profitable tree species that does not have negative impacts on cropland (i.e. Gravelia).
Crop destruction from porcupine	(i) Negotiate investments in porcupine control by most and least affected households; (ii) Widespread mobilization to test diverse strategies for porcupine control over a large area.		By-laws to ensure widespread contributions to porcupine control.

**STEP 4: DEVELOPMENT OF ACTION RESEARCH PROTOCOLS**

The next step consists of developing action research protocols to clarify to those responsible for distilling broader lessons (action researchers) the main scope of inquiry. These protocols are developed for *each* priority issue identified by farmers and screened for their relevance to global questions. The protocols integrate the suggestions of stakeholders (from Step 3) with the broader framework of ideas from which elements of effective change processes may be distilled. Action research protocols have the following elements:

*Title* - Simple title stating the purpose of research in the specific location and making reference to broader questions.

*Background and Justification* – The background must clarify the dynamics of the particular case in question, focusing on reasons why the problem has not yet been solved despite the fact that the actors themselves perceive it to be a problem. Potential strategies for addressing the problem, based on assumptions or hypotheses about the main barriers perceived to be hindering resolution of the problem, are then discussed. Stakeholder inputs from participatory problem diagnosis and prioritization (Step 3) are then described, with a focus on stakeholder opinions on the design of innovations to be tested. The research protocol should also explicitly link the background of the particular issue to be addressed in the site to broader global questions the research is contributing to. While not done in Box D to avoid repetition, a problem statement such as the one highlighted in the upper half of Box C can be inserted into each site protocol to ensure those linkages are made explicit. This would come at the beginning of the background and justification section, as it should frame the site-specific issues which follow.

*Objectives* – Protocols can involve one set of objectives, or nested objectives that emphasize the primary and secondary focus of action-oriented research and innovation. Primary objectives for action research should focus first and foremost on *problem-solving*. While understanding is also fundamental to problem-solving, the latter should be the primary focus of research. This includes solving problems in the specific location where research will be carried out, as well as contributing to a broader understanding of how to solve similar types of problems elsewhere. Secondary objectives are generally sub-components or more detailed aspects of primary objectives. They may make reference to dimensions of the approach to be used, or to the ultimate audience for which action research is conducted (see Box D for examples).

*Research Questions and Hypotheses* – As mentioned in the introduction, action research questions place emphasis on the “how” types of questions and may be phrased in a number of ways, including:

- “What is an effective approach for [doing x]?”
- “How can [objective y] be effectively achieved in practice?”
- “What are the necessary conditions or processes for [outcome z] to emerge?”

Questions should emphasize both specific solutions to localized problems and general lessons that may be of use to a broader community of end users. Questions of the first type are more likely to use one of the first two types of questions above, while questions for the latter are more likely to be phrased in the form of question 3 (see Box D for examples). Hypotheses should make reference to the particular aspects of the strategy which are expected to bring change on problems that were formerly defied easy solutions.

*Approach and Data Collection* – While research is often made operational through a method or methodology, action research is more easily framed in the form of an “approach”. Oxford American Dictionary defines approach as, “a way of dealing with something” or “an *approximation* to something”. In turn, method is defined as, “a *particular* form of procedure for accomplishing or approaching something, especially a *systematic* or *established* one [emphasis added].” In simpler terms, an approach is either an approximate or “best bet” strategy for doing something, or a general way of approaching a problem whose details are only worked out in practice. A method, on the other hand, is defined up front in more specific terms and held fixed during implementation.

In action research, an approach is defined in the form of approximate steps in a PAL process to be carried out in communities, watersheds or institutions undergoing processes of innovation

**Box D. Action Research Protocol for Enabling Outfield Intensification in Highland Ethiopia**

**Title:** “Enabling Outfield Intensification through Collective Action in Galessa, Ethiopia”

**Background and Justification:** Throughout highland Ethiopia, outfield areas continue to be mined of nutrients and to experience a loss of productive potential due to a host of proximate and ultimate causes. Proximate causes include collection of dung from outfields for fuel (removing a potential soil amendment); failure to invest in conservation investments such as soil conservation structures and trees; and free movement of livestock during certain seasons – which limits choices available to farmers as grazing and trampling make many technological innovations non-viable. Ultimate causes include prior land reforms and policies that undermine perceived tenure security as well as incentives for investing in outfields; customary tenure systems that encourage free movement of livestock (limited access grazing in the rainy season and free grazing in the dry season); and deforestation and its effect on household fuel availability (placing added pressure on the use of dung for fuel).

While national policies seek to ban free grazing entirely, this is not an option for many smallholder farmers until viable feed alternatives exist. Intermediate solutions are therefore needed that enable farmers to invest in outfield improvements without an absolute ban on livestock movement. These might include temporary bans on livestock movement in small areas of the watershed for a period of 2 to 3 years until trees and conservation structures can be established, and then moving to new areas as these areas are opened up to grazing. While this might be difficult to do given the reluctance of farmers outside of these areas to receive livestock of those farms falling within the restricted area, it may be made possible through negotiations between these two groups to ensure all watershed residents that they will eventually benefit from these innovations (by reinforcing agreements through local by-law development). Another strategy toward such “intermediate” solutions would be to enhance farmers’ interest in outfield innovations and investments through the integration of conservation activities (soil conservation structures, trees) with high-value enterprises such as fruit trees or high-value crops suitable to the outfields. This serves as a “pull” – an incentive for farmers to begin innovating to take better advantage of their outfields. A third solution where individuals plant trees along soil bunds and expend valuable material (for fencing) and labor (for “policing” their trees against livestock), while easy to agree on, is expected to only detract others from implementing soil conservation activities in the future.

This action research theme therefore seeks to develop such an intermediate management scheme through local negotiations, by-law reforms and income generation. Local negotiations will enable diverse local interests to be negotiated toward more optimal solutions, for example enabling conserving and non-conserving farmers to negotiate soil and water conservation practices acceptable to both parties - and negotiating temporary restrictions on livestock movement in certain areas until trees and conservation structures can be established. Participatory by-law reforms, on the other hand, will ensure that resolutions encompass diverse local interests and give local resolutions the force of law. Market opportunities for the outfields, on the other hand, will enhance farmers’ interest in investing in these areas. Provisional discussions on the negotiations and by-law reforms needed to improve outfield management during the district stakeholder workshop will be used as a starting point for this action research theme:

- Participants did not agree on the need for temporary restrictions of livestock movement, but did agree that such a proposal should be discussed with the watershed community.
- Farmers agreed that collective action should be fostered in purchasing fencing material for trees planted to secure outfield soil conservation structures in the absence of free grazing bans.
- Farmers had already established by-laws that non-conserving farmers should pay for any loss to downslope farmers from their actions, and to punish “free riders” (in money or labor). The implementation of these agreements will be monitored during action research.
- Farmers agreed that new technologies and by-laws were required to avoid gully formation.

**Objectives:** *Primary Objectives* are to: (i) develop pathways for outfield intensification through institutional innovations; and (ii) derive broader lessons for catalyzing collective action in NRM where it is absent. *Secondary Objectives* are:

1. To enhance collective action through institution-building around principles of self-organization (equity, setting of appropriate rules, sanctions, and balancing costs with benefits); and
2. To understand factors enabling collective investments in outfields so that others throughout the Ethiopian highlands may learn from our experience and contribute to a broader understanding of how to engender collective action where it is absent (for national & global target audience).

**Box D. Action Research Protocol for Outfield Intensification in Highland Ethiopia (cont'd)**
**Research Questions and Hypotheses:**

*Research Questions:* 1) What are effective approaches to outfield intensification in highland Ethiopia?; and 2) How can collective action in NRM be catalyzed where it is absent (what are the pre-conditions)?

*Hypothesis:* Solutions to outfield degradation are hindered by difficulties in reconciling divergent local interests, requiring that institutional innovations (negotiations among interest groups, by-laws to enforce local agreements) are used as an entry to technological innovation.

**Approach and Data Collection:** The effect of freely grazing livestock on the ability to innovation in outfields meant that the approach had to begin with negotiations on restricting livestock movement. Once agreements were reached, other innovations on specific areas (agroforestry, soil and water conservation, high-value enterprises) could be brought on board. This is illustrated in primary (A) and secondary (B) parts of Table D1:

**Table D1. Steps and Data Collection for Action Research on Outfield Intensification**

STEP	DATA TO BE COLLECTED
<i>A. Negotiating Restrictions in Livestock Movement (Primary)</i>	
1. <u>Stakeholder consultation</u> : Watershed fora with male & female farmers from all villages to discuss ways to restrict livestock movement (partially, temporarily or gradually) for diverse benefits (spring recharge from enhanced infiltration, diverse products & services from crop- and water-compatible trees, income from high-value crop & tree innovations).	<b>Process documentation</b> of watershed meeting, including deliberations about different possible strategies and reasons why some were preferred over others.
2. <u>Stakeholder analysis</u> : Identify local interest groups or stakeholders associated with prioritized strategies, consult them on their views of the problem and solution, and identify their interests.	<b>Process documentation</b> of stakeholder consultations, including the views of different local stakeholders on the nature of the problem and solutions.
3. <u>Participatory planning</u> : Facilitate negotiations among identified stakeholders as a tool for foster “socially-optimal” solutions, and develop action plans (including technologies and by-laws to support agreements) with activities, roles and responsibilities of different actors / institutions and timeline.	<b>Process documentation</b> of negotiation support or participatory planning processes, including participatory action plans.
4. <u>Implementation</u> , with periodic <u>participatory M&amp;E</u> with each stakeholder group to monitor progress according to local indicators (biophysical, economic and social) and track progress toward identified goals.	<b>Participatory M&amp;E reports</b> , including local indicators and their performance during different stages of innovation as perceived by local interest groups.
5. <u>Impact assessment</u> , based on local and scientific, social and biophysical, indicators.	<b>Report on impacts</b> of the approach on social and biophysical indicators.
<i>B. Fostering Collective Action in Soil and Water Conservation (Secondary)</i>	
1. <u>Stakeholder analysis</u> : Identify local interest groups or stakeholders associated with controlling run-off and gully stabilization (two watershed priorities of farmers).	<b>Process documentation</b> of stakeholder consultations (including the of each views on the nature of the problem & solutions).
2. <u>Participatory planning</u> through multi-stakeholder negotiations, as above, but with stakeholders specific to soil and water conservation (upslope & downslope, conserving & non-conserving, landowners & landless sharecroppers).	<b>Process documentation</b> of negotiation support process, including participatory action plans.
3. <u>Implementation</u> with periodic <u>participatory M&amp;E</u> , as above, but with stakeholder groups, indicators and goals <b>specific to</b> soil and water conservation.	<b>Participatory M&amp;E reports</b> , including local indicators and their performance during different stages of innovation as perceived by different stakeholder groups.
4. <u>Impact assessment</u> , based on local and scientific, social and biophysical, indicators	<b>Report on impacts</b> of the approach on social and biophysical indicators.

**Outputs:** Case study on effective approaches for outfield intensification (with column 2 data); methods guide on fostering equitable collective action in NRM (through cross-case and cross-site comparisons).

**Expected Outcomes:** “Biophysical” problems solved through *institutional* innovations that use participation to balance interests of diverse stakeholders and adapt solutions to the local context (via negotiation support), while ensuring agreements are enforced (via by-law reforms and enforcement).

(see underlined font in Table D1), together with data collected in the process of observing and analyzing change process (bold font in Table D1). Steps in the PAL approach include, minimally:

1. Stakeholder consultations to frame the approach to be used;
2. Participatory planning (with clearly defined activities, roles and responsibilities, and timeline);
3. Implementation of action plans; and
4. Periodic participatory monitoring and evaluation to monitor progress and adjust the approach accordingly to increase the likelihood of successful outcomes (see table in Box D for an example).

Often, a step of stakeholder analysis is included prior to participatory planning, particularly when a problem is characterized by multiple conflicting interests that must be reconciled. This step is inherently different from the stakeholder consultations in Step 1. Stakeholders in Step 1 include the set of local and external actors and organizations operating in a particular area and with an interest or mandate over the issue in question. These may include local communities (in the aggregate, or represented by local leaders and male and female farmers); local government and relevant line ministries; non-governmental organizations working on the issue in question; private businesses and/or local courts. The second or subsequent stakeholder analysis, on the other hand, looks at the “interest groups” having different economic or political stakes in the issue at hand. In other words, those groups *directly* affected by any decisions taken around the resource or problem of interest. They are often drawn from a single community, but may also involve interactions with outside entities, as evidenced in Table 3.

**Table 3.** Interest Groups with Different ‘Stakes’ in Common Watershed Management Problems in the Eastern African Highlands

<b>Watershed Problem</b>	<b>Stakeholders</b>	<b>Stakeholder Interests</b>
1. Trees on farm boundaries competing with adjacent crops	- Owners of boundary trees (individuals, institutions) - Neighboring farmers	- Provision of household needs & income; crop compatibility - Tree compatibility with crops
2. Trees used for road stabilization competing	- Ministry of Public Works - Farmers bordering roads	- Road stabilization - Tree compatibility with crops
3. Spring degradation	- Owners of land near - Spring users	- Income from land near springs; spring users do not destroy crops - Negative effects of land use practices on springs negligible
4. Crop destruction from free grazing	- Livestock-endowed households - Affected households	- Sustaining current levels of fodder supply - Cease crop destruction
5. Livestock & crop pests, disease, vermin	- Most affected households - Least affected households	- Pest control - Minimize labor investment in pest control
6. Excess run-off	- Households with least affected (upslope) plots - Households with most affected (downslope) plots	- Minimize labor investment - Control loss of seed, fertilizer & soil from upslope run-off

This step consists of the identification and consultation of each identified stakeholder or stakeholder group (i.e. individuals with common interests in any given issue, such as spring owners). When stakeholder analysis is used as a step prior to planning, the planning process generally takes place in the form of a multi-stakeholder negotiation – where the interests of different stakeholders are made explicit in planning, and intermediate or “socially-optimal” solutions are sought that balance the needs of each stakeholder. Therefore, stakeholders are not identified as an academic exercise – but rather for the purpose of explicitly engaging them in planning so as to equitably address their concerns. Table 4 summarizes the effect of stakeholder differentiation on the PAL and action research approach.

**Table 4.** The Influence of Stakeholder Interests on the Approach Used

<b>Characteristics of the Problem</b>	<b>Steps in Action Research Protocol</b>	<b>Type of Planning &amp; Monitoring Processes</b>
All affected parties have similar interests and concerns	Excludes stakeholder analysis	Generalized planning (i.e. community fora); collective or gender-based <sup>4</sup> monitoring
Problem is characterized by divergent interests or ‘stakes’	Includes stakeholder analysis	Multi-stakeholder negotiations; stakeholder-based monitoring

Forms of data collection are highlighted in the right-hand column of Table D1 (Box D). These include participatory assessments of progress with the main actors involved in a participatory innovation process (participatory M&E), outside observations on change process to observe how different aspects of the approach relate to intermediate outcomes and distill lessons for the case in question (process documentation) and final impact assessments. These instruments are discussed in greater detail under Steps 7 (Implementation and Monitoring) and 8 (Impact Assessment).

*Outputs* – Outputs are in the form of “how to” messages and their packaging for diverse end users. This may be in the form of methods guides for practitioners, policy briefs for organizational managers, media releases for the general public or farmer products (video, posters, pamphlets in the local language). Outputs should also be targeted to the level or scale of the impact domain – whether district, national, regional or global. Higher-level impact domains will, however, require the synthesis of action research findings across a number of specific cases distributed throughout – and therefore representative of – the target area.

*Anticipated Outcomes* – Outcomes of any action research should be clearly identifiable from the outset based on a general understanding of the problem resulting from literature reviews, field experience and stakeholder consultations. These should emphasize the nature of solutions expected from the PAL process in the specific location where it is carried out (see Box D for an example).

## STEP 5: STAKEHOLDER ANALYSIS

Two approaches to stakeholder analysis were tested in AHI. The first was borrowed from CIAT. A form of “snowball” sampling, it identified new interviewees by asking the last interviewee to identify individuals likely to feel most differently from them about the issue.

<sup>4</sup> While gendered perspective should generally be mainstreamed in any natural resource management innovation process, other interests become primary in stakeholder-based planning. It is nevertheless suggested that planning and monitoring explicitly acknowledge gender *and* stakeholder differences.



They call it “contrast” or “maximum variation” sampling to emphasize the attempt to identify the largest possible variation of responses (Munk Ravnborg and Guerrero, 1997). This approach combines stakeholder identification with stakeholder consultation. During each step in the chain, interviewees are asked a set of questions to understand their perspectives and interests around an issue. The following are questions that we have used for this purpose:

- In prior consultations with [stakeholders a, b, c], people mentioned their concern about [issue x]. What is your understanding of this issue?
- In your opinion, why did the problem come about?
- Does the current situation affect you? If so, how?
- What is your main concern related to this issue? If one were to pursue solutions to this problem, how could these concerns be best taken into consideration?
- Who / which groups should be involved in generating a collective solution to this problem? How should they be brought together?

A second approach to stakeholder identification was derived from experience acquired in the process of identifying stakeholders across a wide range of watershed issues. These experiences allowed us to identify the following scenarios around which stakeholders are generally defined:

Scenario 1: Issues remain unresolved due to inadequate collective action.

In this scenario, solving problems requires collective action. Either the solution is not fully effective when based on the efforts of individuals (thereby resulting in low benefits or returns for any investment), or the issue simply cannot be solved in the absence of collective action.

Scenario 2: Divergent interests of different stakeholders polarize the issue, blocking cooperation and solutions.

This scenario includes issues of overt and latent conflict, and often involves issues that remain unresolved because one party is benefiting economically or politically from the status quo. Local interest groups or stakeholders for such scenarios may be defined in one of two ways:

- (a) Some households (interest group 1) are more affected than others (interest group 2), and therefore have greater motivation to participate in collective action; or
- (b) The behaviors of some individuals or groups (interest group 1) have a negative effect on other groups or households (interest group 2).

Examples of each are highlighted in Box E.

Once AHI learned that all watershed problems could be classified in this way, stakeholders begin to be defined simply through consultations with key informants or focus groups using a set of pre-defined questions derived from the above scenarios. These include the following:

1. [Problem x] was identified as a watershed problem requiring collective action to be resolved. Are any groups of people more affected than others, or are all households affected equally? *[If some were said to be more affected, continue.]* Who is most affected? Least affected?
2. Are any groups of people more responsible for the problem’s manifestation than others? If so, who? Who is affected by the problem, and how?

**Box E. Examples of Watershed Problems Defined by Different Stakeholder Scenarios in the Eastern Africa Highlands**

**Scenario 1 – Issues unresolved due to lack of collective action.**

*(a) Issues only partially resolved through individualized efforts:*

- Control of many pest and weed species that easily spread across farm boundaries
- Controlling run-off and soil erosion, for which greater levels of collective action imply more effective solutions, due to “aggregate effects” of many households implementing soil conservation structures
- Nursery management, where “free riders” (who fail to invest time according to agreements) undermine incentives of others to engage in collective action

*(b) Issues that cannot be solved in the absence of collective action:*

- Extensive use and degradation of outfields, in which free grazing traditions (including seasons of restricted and open access grazing) make any outfield innovations subject to collective agreement
- Extensive use of outfields, in which traditional beliefs governing the use of the common property resource prohibit any innovation
- Controlling extreme run-off, which requires trenches across the entire landscape and agreement on the location of common waterways (to divert excess water from fields)

**Scenario 2 – Divergent interests polarize the issue, blocking cooperation and solutions.**

*(a) Some households are more affected than others, and therefore have greater motivation to participate in collective action:*

- Controlling excess run-off, where upslope farmers benefit less from soil conservation structures because they are less affected by excess water and deposition from upslope
- Crop destruction from porcupine, since some households grow crops attractive to porcupine (sweet potato, maize, haricot and faba bean, etc.), while others do not grow crops attractive to porcupine
- Loss of soil fertility from excess erosion under the following scenarios: (i) Eroded soil is fertile (upslope farmers are negatively affected by loss of fertile topsoil, while down-slope farmers benefit from the deposition of this same soil on their land); and (ii) Eroded soil is infertile (down-slope and valley bottom plots are negatively affected by deposition of infertile soil over more fertile topsoil, while upslope farmers are losing only infertile soil and are less affected).

*Land use practices of some households have a negative effect on other households:*

- Fast-growing trees planted on farm boundaries which have a negative effect on adjacent farmers’ fields due to competition for nutrients, water and light and allelopathic effects
- Spring degradation from land use practices of landowners with springs on or near their land, including cultivation of “thirsty” trees, cultivation and pesticide use up to the edge of springs and waterways (in particular growers of high-value vegetable crops for market) and loss of protective vegetation
- Free grazing, where households have very divergent livestock holdings and incentives to reduce free grazing only exist among households with low livestock endowments.

If all households were found to be equally affected (as an answer to question 1), this will suggest that the issue falls into Scenario 1. The implication is that a general approach to mobilizing collective action among all affected persons and groups is likely to be appropriate. A generalized approach to planning and monitoring at community level, for example, may be sufficient in solving the problem. If, on the other hand, some groups are found to be more affected than others, the implication is that those groups will have greater incentives to participate in collective action than others. Yet the solution may rest on participation by all

households, as with cases where the problem emanates from the practices of less affected households (for example, excess run-off from upslope plots washing out seed and fertilizers on downhill plots). Therefore, a multi-stakeholder negotiation process may be required to adequately address the problem, so as to negotiate solutions which balance contributions with the benefits derived for any given household. For example, labor invested in soil conservation structures on upslope plots may need to come from affected farmers (those having plots downhill) rather than the land owner if the former are more affected. This helps to align one's level of contribution with the benefits derived from this investment, thus building on a well-known principle of collective action which states that investments must be proportionate to or greater than the costs for an individual to continue investing in collective action. Such "socially-optimal" solutions which balance the interests of diverse stakeholder groups tend only to result from negotiation support approaches to planning (German et al, 2006a).

Question 2, on the other hand, helps to identify stakeholders should the watershed problem fall under Scenario 2b, where stakeholders are defined according to cause and effect (the practices of some stakeholders have a negative effect on other stakeholders). In this case, a negotiation support approach to planning is also required, as it can help to balance the needs of the stakeholder perceived to be causing the problem with those who are affected by this actor's practices. These are often the most challenging problems to solve, as the problem tends to persist due to the strong economic or political interest in maintaining the status quo. Curtailing free grazing or cultivation of fast-growing trees near springs, for example, will have very real implications for household income unless alternatives are put into place and the cost of transitioning from one practice to another are reduced (for example, by affected households assuming some or all of the costs).

In our experience, stakeholder categories in watershed management are much easier to interpret following the use of these simple questions and being sure to validate responses with diverse local actors (i.e. a few female and male farmers, local leaders, elders). However, this approach only leads to the identification of stakeholders; consultations must still be held with each identified stakeholder (through individual or focus group discussions) to identify their perceptions to the problem following similar questions to those proposed in the context of the snowball method. This makes both strategies perhaps equally time consuming. The adequacy of the AGRI approach in identifying stakeholder interests for other types of issues (marketing, credit systems, equitable approaches to community seed multiplication, etc.) must also be verified. This should be done by comparing results from other methods for stakeholder identification with those obtained through the above approach.

During stakeholder consultations, a number of important principles must be upheld – in particular for issues involving latent or overt conflict. The first is the need to show compassion or empathy for the interests and concerns of *each* party. If the mediator is perceived at this time as being biased toward one party over the other or having an interest in a particular outcome, it jeopardizes the likelihood of bringing the two parties to the negotiating table. This should also include joint formulation of the agenda to be followed during the first negotiation, which will help diffuse tension and create a more comfortable and harmonious atmosphere for negotiation. Even language that is used has a crucial role in either further polarizing the two parties or bringing them closer to negotiation at this time.

The benefits of holding meetings with individual stakeholder groups prior to multi-stakeholder negotiations are multiple (see also Box F for an example):

- Impartial identification of the concerns of each stakeholder;

**Box F. The Role of Prior Stakeholder Consultations in Multi-Stakeholder Engagement: The Case of the Sakharani Boundary, Lushoto, Tanzania**

During the participatory watershed diagnosis in Lushoto, Tanzania, farmers identified negative effects of boundary trees as a priority problem. One of the key stakeholders identified by farmers for boundary tree management was the Sakharani Mission. In 1946, the mission bought land and established high-value trees and crops. Eucalyptus trees were planted in 1970 to secure the farm boundary from encroachment, and neighboring farmers had noticed negative effects of these trees on their cropland and springs. This was the main reason that multi-stakeholder negotiations were pursued between Sakharani and the three villages neighboring Sakharani.

The first step following participatory watershed diagnosis consisted of visiting the Mission to convey the concerns of farmers to the Mission's farm manager. This visit was instrumental in moving multi-stakeholder negotiations forward in several ways. First, watershed problems had only been diagnosed in the minds of smallholder farmers, failing to capture the views of other land users like Sakharani. These preliminary meetings were instrumental in highlighting concerns that the Mission had with regard to land use practices of neighboring households. These included the destruction of tree seedlings from free grazing livestock and decline in the Mission's water supply from upstream land use practices. The impartiality expressed by the facilitators for the concerns of the Mission in addition to those already expressed by neighboring farmers, the farm manager began to view the dialogue as an opportunity rather than a threat.

A second outcome of this preliminary stakeholder consultation was to enable the farm manager to make suggestions on how the multi-stakeholder engagement itself would be facilitated. The farm manager was asked to contribute his suggestions on the date and venue for the meeting and the agenda. Contributions to the meeting's agenda included the inclusion of local leaders from neighboring villages and efforts to de-polarize the concerns of each party. The latter led us to develop materials for initiating dialogue that emphasized the commonalities rather than the differences in the interests of each stakeholder, as illustrated in Table G1.

**Table G1.** Stakeholder Concerns Presented in Plenary during Sakharani Boundary Negotiations

Problem	Problem faced by:	
	<i>Farmers</i>	<i>Sakharani</i>
Competition of boundary trees with neighboring crops	√	
Eucalyptus degrading water sources	√	√
Decline of rainfall	√	√
Degradation of water sources	√	√
Damage caused to crops and trees from free grazing	√	√

While the first two concerns were the main reason for approaching the Mission, the new concerns raised by the Mission were also included as farmers' concerns. As these been identified in the watershed exploration (but not in the context of community-Mission interactions), this was a fair representation of reality and the common concerns of both parties. By emphasizing shared concerns rather than polarized interests, the table helped set the stage for collaborative dialogue. The proposed meeting with other stakeholders was now seen as an opportunity by the farm manager to dialogue with his neighbors toward more optimal natural resource management for the benefit of both parties.

- Helps to inform the facilitator of the primary interests of each stakeholder and opportunities that might be pursued during negotiations;
- Prior consultations can bring each party closer to dialogue in the cases of latent or overt conflict by demonstrating empathy for the concerns of each stakeholder, raising awareness on the opportunities created through dialogue and providing an opportunity for input into the negotiation process itself.

A number of important lessons may also be distilled from AHI experiences in stakeholder consultations (see Box G for an example):

- The crucial role of a third party to help bring each party closer to dialogue in cases where interests are polarized and the problem is characterized by conflict (latent or overt);
- The importance of impartiality in diagnosing problems from the perspective of *each* interest group (to enable identification of opportunities for balanced concessions by understanding what each stakeholder would like to achieve through dialogue), and the importance of showing empathy toward each stakeholder’s concerns in gaining their confidence for entering into negotiations; and
- The importance of using non-polarizing language to gain the confidence of each party.

**Box G. Principles of Multi-Stakeholder Negotiation: The Case of the Sakharani Mission Boundary**

The Sakharani Mission boundary case study described above helps to illustrate some additional principles in multi-stakeholder negotiation. These include the following:

- *The Crucial Role of a Third Party in Cases of Conflict.* Our preliminary visit with the Sakharani Manager was at first met with resistance. Only after gaining confidence was he open to the idea of meeting with neighboring smallholders to negotiate land use practices of benefit to both parties. Had he been invited to a negotiation event in the absence of this prior consultation, he may not have been willing to be present at the meeting. This is mostly true in cases where the interests of the two parties are highly polarized and people fear what they might lose through dialogue.
- *Showing Impartiality and Empathy.* Having diagnosed watershed problems through the minds of farmers alone during the watershed exploration phase in effect marginalized a host of issues faced by the Sakharani Mission in their interactions with neighboring villages. These issues – including deforestation and its effect on rainfall and water supply, and damage caused to tree seedlings from free grazing by neighboring farmers – were promptly brought to our attention in the first meeting (stakeholder consultation). By expressing empathy and concern for these problems in addition to those raised by the neighboring farmers, the farm manager gained trust in us through our apparent neutrality.
- *Use of Non-Polarizing Language.* During our preliminary meeting with the Sakharani farm manager, one of the team members introduced the problem voiced by farmers – namely the negative impact of Sakharani boundary trees on neighboring cropland and springs. Use of language that unnecessarily polarized the interests of the two parties (“stakeholder”) and presupposed compromise on behalf of the landowner (“negotiation”) provoked an understandably defensive reaction in the mind of the farm manager. Careful choice of words to avoid further polarizing the issue is essential in early stages of stakeholder consultation and negotiation support. Words such as “party” and “dialogue”, for example, are less threatening than words like “stakeholder” and “negotiation.”

## STEP 6: PARTICIPATORY PLANNING & NEGOTIATION SUPPORT

The next step involves participatory planning. Two different approaches to planning may be used. The first approach is used when all parties share a common concern and level of interest in solving a problem collectively. In this case, Step 5 is skipped and all actors are brought together into a single planning forum without consideration of their interests or stakes. In the second approach, stakeholders identified in Step 5 are brought together to negotiate “socially-optimal” solutions that balance the interests of each group.

### *Approach 1 – Planning Undifferentiated by Interests or Stakes*

The first approach, conducted at village, watershed, district or institutional level, involves all residents or employees or individuals chosen to represent the interests of specific groups within the community or organization. These individuals must be selected for the right reasons. Common criteria for selection of representatives include:

- They represent particular perspectives within the community or organization (leaders and others, men and women, managers and scientists, etc.)
- Geographical or thematic coverage (representatives from each village or sub-village, from each department within the organization, from each sector within the district, etc.)
- They tend to show concern for and have an ability to represent the views of others
- They have a natural ability to express opinions in public settings, so that the views of those they are intended to represent are adequately brought forward
- Their perceived fairness or impartiality

Generally, these criteria for selecting representatives should be agreed upon prior to identifying the individuals themselves. Otherwise, selection processes tend to be taken over by natural social networks and affinities or politics within the community or organization. How many times have you seen community leaders select participants for meetings based on friendship, family or households’ proximity to the community center rather than criteria related to the participants’ ability to contribute and represent others? How many times has selection of staff for trainings or strategic meetings been done based on the strength of their social ties with those making the selection, rather than that individual’s potential to contribute to the meeting or make a difference within the organization upon their return? Selecting criteria for participant selection prior to selecting the participants themselves, and engaging a more diverse group to do the selection, can help to control such biases.

Ensuring effective representation, however, goes far beyond simple selection of participants. These individuals must be sensitized on the need to plan not for their own individual interests, but on behalf of the group they were selected to represent (Box H). They must be encouraged to internalize this before engaging in planning, and the facilitator should remind participants of this throughout the planning process itself as a reaction to proposals made by participants (“are you speaking for yourself, or on behalf of those you are here to represent?”), questions given to break-out groups and setting rules of engagement (i.e. to specify before speaking whose hat each participant is wearing, whether their own or those they represent). Yet this is still insufficient. Decisions taken by this small group on behalf of the larger community or organization should be fed back to their constituent units (villages, hamlets, departments, sector representatives) to solicit reactions and input from a broader group, and to foster broader buy-in to the work plan.

**Box H. Planning through Watershed Representatives in Lushoto, Tanzania**

In Lushoto District, in the Usambara mountains of Tanzania, the AHI watershed consisted of many households distributed among six villages, and 10 to 13 hamlets per village. These administrative units were in addition to gender- and stakeholder-based differences existing within the watershed. How, then could watershed planning be done in a way that adequately captured the perspectives of different groups within the community? A decision was made to conduct planning through the selection of representatives. Local school teachers, community leaders and equal numbers of male and female farmers from different watershed villages were called together to plan on behalf of others.

When called together, each group was sensitized on their roles – namely, to think and plan on behalf of the groups or constituencies they are there to represent. Following the meeting, the work plans were taken to the project office to document but then given back to the community for posting in the village office. Copies of digitized versions of the work plan were also provided. However, no efforts were made to ensure representatives validated what was planned with the villages they were selected to represent. While this could have happened spontaneously as others inquired about the meeting and what it entailed, work plans are not likely to have been shared in detail – nor was this sharing likely to have adequately encompassed the different sub-groups within the community (men and women, different hamlets or interest groups) or led to modification of the original work plan based on feedback received.

Subsequent activities in the site involving planning that would have implications for a broader group beyond those directly participating did, however, benefit from lessons learnt early on. Planning for by-law reforms to improve natural resource management was done at village level, with male and female representatives chosen from diverse hamlets. Thus, the planning penetrated further down into communities. Furthermore, details of the discussion and proposed by-laws were documented on flip charts, transferred to computers and shared back with representatives from each hamlet. These individuals were in turn responsible for bringing the others on board and generating recommendations from them to be incorporated into the proposed by-laws. Hamlets whose representatives did not show up for the meeting were also brought on board by asking representatives of other hamlets to assist in providing feedback to two hamlets at once.

The steps followed within the actual meeting itself tend to include the following, as a minimum. Other steps can be added to adapt the approach to the specific issue under discussion and knowledge gained through earlier steps:

1. Introductions by individual or group (depending on number of participants).
2. Provide a summary in plenary of what was done so far (stakeholder consultations, participatory problem identification and prioritization), the results of each and the reasons for calling the planning meeting.
3. Solicit feedback, clarifications and inputs.
4. Planning in detail around prioritized issues. This generally involves breaking into smaller groups to plan in detail and to economize time, ensuring that each group is well-represented by different perspectives (based on who they represent, gender and/or other relevant parameters such as ethnicity). Each group plans in detail the activities to be conducted, by whom and when.
5. Feedback of group work in plenary and incorporate suggestions from the larger group.
6. Agree on modalities for sharing and validating outputs with the larger community or organization, including the process for writing up and distributing the work plans, responsibilities for feedback to different villages / departments and the approach for feeding recommendations back into the original shared work plan.

*Approach 2 – Negotiation Support*

In the second approach, stakeholders identified in Step 5 are brought together to negotiate “socially-optimal” solutions that balance the interests of each group. In this case, an explicit attempt is made to integrate the concerns of each stakeholder group into the process and the resulting work plans. Participants involve, minimally, the different local stakeholders and the convener. Depending on whether the convener is also facilitating, and whether stakeholders expressed a desire to have other parties present, the meeting may also involve customary leaders, representatives of local government and personnel from government line ministries (i.e. forestry, agriculture, water). However, technical personnel and authority figures must participate largely as observers, to lend credibility to the event and to provide technical information (on the properties or availability of different tree species, legislation, etc.), but not to make decisions. The decision-making should focus on the stakeholders who interact directly around the issue in question. When selecting participants, it is important to select the appropriate entities to represent each stakeholder group. For example, there may be a hierarchy of decision-making within communities or organizations that require particular individuals to be present to lend credibility to decisions made.

In ABI watershed work, the following steps have been used for multi-stakeholder negotiations and – if and when agreements are reached – multi-stakeholder planning (see also Box I):

1. Identify stakeholders for the specific issue in question, consult with them and invite them to the multi-stakeholder meeting. These stakeholders should fall into one of the following groupings:
  - Those affected and those perceived to be causing the problem; and
  - Those most and least affected by the problem, who have different levels of motivation for investing in NRM solutions.
2. Open the meeting with introductions and updates (in plenary) of what was done so far, the results and the reasons for calling the meeting. Updates include a brief summary of prior activities (participatory problem identification and prioritization, stakeholder identification and stakeholder consultations) and the results of each.
3. Solicit feedback, clarifications and inputs.
4. The next steps consist of clarifying stakeholder interests. Stakeholders are first given 2 minutes to express their views on the issue in plenary. This can be done as part of the second step or as the fourth step, depending on what feels natural to you as a facilitator. The facilitator then summarizes these interests based on what was verbalized during the negotiation process and prior stakeholder consultations (see, for example, Table 3 for examples of stakeholder interests).
5. Negotiate “socially-optimal” solutions that meet the needs of different stakeholder groups, following a rule of *no appreciable harm*<sup>5</sup>. This is done by asking all of those present to reflect on both lists of interests and to propose solutions which try to integrate all interests at the same time. For each solution that is proposed, the other stakeholder group is asked whether the proposed solution is acceptable to them. If not, new ideas are solicited from either side, trying to give equal opportunity to both groups to express their ideas. If all interests cannot be met in the first round of negotiations (20-30 minutes), the facilitator asks whether either side can reduce the number of criteria used

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<sup>5</sup> If harm is done, negative effects on the well-being of either stakeholder group should be unappreciable or negligible.



**Box I. Multi-Stakeholder Negotiations on the Sakharani Mission Boundary, Tanzania**

The negotiation event for the Sakharani farm boundary included a group of farmers whose fields were negatively affected by the Eucalyptus trees on the Sakharani boundary, the Sakharani Farm Manager and AHI team members as facilitators and process observers<sup>1</sup>. In this case, stakeholders are defined in terms of those affected and those perceived to be causing the problem. For the issue of boundary trees, this is neighboring farmers and Sakharani, respectively. For the issues of concern to Sakharani (drying of his water source, free grazing), the farmers were perceived to be causing the problem and Sakharani the negatively affected party.

**Introductions, Updates and Participant Feedback.** The meeting started off with some introductions to ensure that everyone knows one another. Next, a summary of what was done so far was presented to participants. This included:

- Watershed problems identified in the area, with an emphasis on problems related to agroforestry (to relate this to the Sakharani boundary issue and place it in a broader context of similar problems) and to the specific concerns of Sakharani and neighboring farmers (see the table in Box G);
- Landscape niches identified by farmers as needing improved management, including farm boundaries (again, to relate the broader work to the case of the Sakharani boundary); and
- Results of local knowledge assessments (species found to cause problems in and to be compatible with each niche, and the reasons why).

Participants more or less agreed with the findings and commented only for the purpose of validating these findings.

**Clarifying Stakeholder Interests.** Next, stakeholders’ interests were used as a basis for initiating the negotiation process. In the case of the Sakharani boundary, “interests” were defined in terms of the characteristics of tree species that make them “fit” the farm boundary niche and the needs of each stakeholder group. These included the following:

<u>Farmers’ Criteria</u>	<u>Sakharani Criteria</u>
- Not harmful to crops	- Secures the boundary
- Adds nutrients to the soil	- Fast-growing
- Limited shade	- Coppices
- Does not deplete soil moisture	

**Negotiating Socially-Optimal Solutions.** Rather than negotiate around the list of criteria (around “interests”), participants found it easier to jump right to the selection of species, keeping the above criteria in mind. The Farm Manager was first asked whether he could accommodate the interests of farmers in the choice of boundary species. Giving the Farm Manager the first word was intentional. This had two important functions. First, asking him whether he can accommodate the interests of others (rather than asking others how he should manage his farm) in effect acknowledged his rights as the landowner. This helped to create trust in the process by ensuring him of the facilitator’s respect for his rights. Secondly, it brought peer pressure to bear on the negotiation process by asking the Farm Manager in front of his neighbors what *he* can do to accommodate *their* concerns. Had he said no, it would have soured his relationship with his neighbors.

The first proposal by Sakharani was rejected by farmers, and this initiated a back-and-forth discussion in which each party would consider (and often refute) the species suggested by the other party, offer reasons why (i.e. the tree has many seeds which will burden farmers with uprooting) and suggest an alternative species. As different species were proposed and rejected, we took care to document new niche compatibility criteria. For example, the criterion “few seeds” was added to the list of farmers’ criteria and the criterion “no edible fruits” was added to the list of Sakharani criteria. The latter was done following Sakharani’s rejection of a species proposed by farmers due to the prevalence of edible fruits that would attract children to the area. In addition to adding criteria during this dialogue, other criteria were either eliminated or modified. The criterion “adds...

<sup>1</sup> Process observers are designated to observe the event as it unfolds (the attitudes or reactions of participants, and how this is affected by the approach) to suggest a change of strategy if needed to reduce tension or assist stakeholders in reaching an agreement, and to ensure lessons are systematically captured.

**Box I. Multi-Stakeholder Negotiations on the Sakharani Mission Boundary, TZ (continued)**

...nutrients to the soil” was changed to read, “not harmful to soil” to focus on minimizing negative effects rather than maximizing benefits and thus minimize excessive claims to the landowner’s property. Two additional criteria were added by Sakharani to better define “secures the boundary” – in this case, “long lifespan” and “high canopy” were added to replace this poorly defined criterion. New criteria (denoted by italics in Table II) also emerged from the negotiation process or were adopted from other stakeholders. The final list of criteria agreed upon by both parties encompassed the following:

**Table II.** Boundary Compatibility Criteria by Stakeholder

Stakeholder	Stakeholder Interests (Compatibility Criteria) <sup>a</sup>
Sakharani	- <b>Has long lifespan</b> - <i>Has limited horizontal branching / shade</i> - <b>Has high canopy</b> - <i>No edible fruits</i> - Fast growing
Neighboring farmers	- Not harmful to crops - <i>Does not dry soil or springs</i> - <b>Not harmful to soil</b> - <i>Has few seeds</i> - Has limited branching / shade

<sup>a</sup> Modified criteria are denoted by bold font and new criteria by italics.

As criteria were updated during the negotiation process itself, by the time this final set of stakeholder criteria was compiled, a new species had already been chosen. Only one species, Mtalawanda (*Markhamia obtusifolia*), was found to be suitable to both stakeholders based on these modified criteria. The Farm Manager was not so excited about this species because it is slow growing, and the farmers were hesitant because it has a lot of seeds that will cause farmers to expend labor uprooting seedlings. The reason they chose this tree despite these disadvantages is that the tree grows high (wanted by farm manager), it doesn’t branch much or create much shade (wanted by both parties), doesn’t interfere with crops (wanted by farmers), and it has a long lifespan (wanted by farmers). The final decision therefore represented a compromise by both parties.

**Developing an Implementation Plan.** At this point, the stakeholders discussed how the agreement would be put into effect. Sakharani emphasized the need for a *gradual* process of tree replacement to avoid any risks of encroachment and to maximize the use value of timber by ensuring a continuous supply for use or sale. Farmers then emphasized the need to ensure that the most critical locations are dealt with first. They agreed that areas for felling should be prioritized in the following order:

1. Where boundary trees pose a risk to a dwelling;
2. Where boundary trees pose the greatest risk to crops;
3. Where boundary trees border grazing land or roadsides.

The Farm Manager then discussed the need to coordinate tree felling with neighboring farmers so that no crops are affected and animals or children do not destroy seedlings. Given that time was running short (negotiations also covered strategies to address declining supplies of water, which are not described here), time was running short. It was agreed to hold a follow-up meeting with all farmers bordering the Mission to discuss a more detailed plan for the felling of Eucalyptus and managing tree seedlings. The meeting was to be called by the Village Executive Officer of one village and attended by leaders of all villages to give legitimacy to the agreements.

to identify a solution so that the interests of the other stakeholder can be better accommodated. In other words, the facilitator tries to get one of the parties to offer concessions – to offer or give something up – for the sake of the collective good.

6. Once agreements are reached, develop a detailed implementation plan with activities, responsibilities, a timeline and a monitoring and evaluation strategy. Means to implement solutions should be conceived of broadly, to encompass all possible types of

issues that could support effective implementation. These elements might include technologies, rules that make agreements enforceable (in the form of by-laws or organizational policies), strategies to minimize harm to any given stakeholder (contributions of labor, material or money by one or more stakeholder groups, market linkages, etc.) or human and social capital development (training, group development).

The above steps often cannot be achieved during a single meeting. In this case, a follow-up event is scheduled with participants. At this time, each party should be given the opportunity to offer suggestions on the approach to be used or other parties to be involved in follow-up meetings. This last step is done strategically, to ensure the buy-in of stakeholders who may have felt uncomfortable with the first meeting due the approach followed or them feeling outnumbered. It can also help to ensure that the appropriate parties are present to give political weight to decisions.

As with stakeholder analysis, a number of general lessons may be derived from ABI experiences in multi-stakeholder negotiations:

- The crucial importance of a third party seen as impartial and respected by all parties to set the rules of negotiation and ensure equal attention is given to each stakeholder (time given to express themselves, consideration of stakeholder interests, etc.).
- The importance of identifying the appropriate authorities within each stakeholder group, to ensure that decisions made can actually be implemented (see also Box J).
- The importance of being sensitive to – and actively managing – power dynamics in the way negotiations are facilitated and the language that is used (see Box J).
- The importance of balanced concessions in reaching solutions to issues involving latent or overt conflict (see Box J).
- Socially-optimal outcomes in which diverse parties sacrifice something for the collective good are only possible through negotiation-based planning processes. If the undifferentiated approach to planning is erroneously chosen in high-stake, conflict-laden situations, these power dynamics will often be minimized during planning – only to re-surface during implementation (often in the form of *inaction*).

**Box J.** Lessons on Multi-Stakeholder Negotiations – Examples from Lushoto, Tanzania

- *The Importance of Identifying the Appropriate Authority within Stakeholder Groups.* For the Sakharani boundary case, the Farm Manager was negotiating on behalf of a larger group of religious leaders within the Benedictine Order. His superiors were not engaged in the first negotiation process, and when it came to implement agreements they stepped in and stopped him. While possible to then involve the appropriate authorities in a follow-up negotiation, it would have been best to identify the appropriate authority from the beginning to minimize frustration of those involved.
- *Sensitivity to Power Dynamics.* This sensitivity was ensured through use of non-polarizing language (as learnt through prior stakeholder consultations) during the negotiation process itself, and through strategies to acknowledge the land use rights of the Mission (by giving them the first word in suggesting an alternative, less harmful species).
- *The Importance of Balanced Concessions.* Deadlocks to constructive engagement of stakeholders can rarely be solved without each party “giving up” something for the collective good. In this case, Sakharani agreed to substitute the boundary tree species from *Eucalyptus* spp. to *Markhamia obtusifolia*, provided neighboring farmers kept their livestock from grazing within Mission boundaries and they worked together to recuperate degraded waterways. Furthermore, each party gave up criteria important to them (few seeds, fast growing) for the sake of a “socially-optimal” solution to farm boundary management.

## STEP 7: IMPLEMENTATION & MONITORING

Unlike conventional research, the implementation process for action research does not necessarily follow a set of pre-established steps. The approach followed is actively influenced by monitoring that goes on at the level of participants (communities, organizational representatives) and at the level of the action research project or program. The following steps, implemented iteratively, ensure that learning and action occur simultaneously – with formal monitoring serving to formalize learning and ensure this is used to shape actions on the ground:



1. Implementation (following first steps in a participatory action plan)
2. Reflection
  - Process Documentation (examples of good and bad PD)
  - Participatory M&E (example of good PM&E outputs)
3. Re-planning

The process therefore starts with the implementation of participatory action plans. During action planning, participants should have identified a schedule for participatory monitoring and a mechanism for calling together participants. This will serve as a guide as to when and how to call people together for monitoring. During early steps of implementation, participatory monitoring should be more frequent given the importance of early successes in motivating people to continue investing in a change process. If monitoring is not done early enough, early barriers encountered during implementation can frustrate participants, causing them to give up on the process.

In participatory M&E, the main participants or beneficiaries themselves lead the assessment of progress. This monitoring function takes place in the context of self-led development or change processes, in order to align activities with established end goals based on challenged faced and lessons learnt in progress. It may initially be facilitated by an outsider, but the responsibility should increasingly be taken on by the participants themselves. It can be conducted informally, by asking participants about successes and challenges faced in implementation and reflecting on end goals to see whether the approach as planned needs to be revised or updated, or can be done through identification and monitoring of local indicators. For the latter, the participants (community members or staff from the organization) define indicators during the planning stage. During each follow-up monitoring event, these indicators are reflected on to assess how they have been influenced by the activities conducted up until that point in time. If problems are identified through formal or informal monitoring, planning must occur around these problems until a new “best bet” approach to solving that problem is identified. “Nested” or more detailed work plans should emerge out of this reflection if new actions are needed. Steps in participatory M&E are sequenced into the broader participatory action learning process as follows, with PM&E steps denoted by italics:

1. Stakeholder Consultations
2. Stakeholder Analysis
3. Participatory Planning
  - Agree on shared objectives
  - Identify balanced solutions
  - *Identify local indicators important to each stakeholder*

4. Implementation and Participatory PM&E
  - Implementation of agreed activities based on participatory work plans
  - Conduct M&E meetings periodically with identified stakeholder groups to: (i) assess progress; and (ii) re-plan to address emerging challenges or better align activities with agreed objectives
5. Impact Assessment
  - Measure change in scientific indicators
  - Measure total change in local indicators through before / after or with / without comparisons

For a summary of the participatory M&E approach used in AAI, please see Box K.

**Box K. Participatory Monitoring and Evaluation**

**A. Identification of Local Indicators of Importance to Each Stakeholder**

The PAL objectives agreed upon during participatory planning become the “guiding star” for PM&E, as reflections on progress should relate to what it is that the participants are striving to achieve. During this meeting, local indicators that will be used to monitor progress toward agreed objectives are then identified by asking, “If [PAL topic] is successful, what changes will you see? What will be different in [2 months’ time, 6 months’, 2 years’] time?” Identification of local indicators should take into consideration the most important indicators for different groups by breaking the group down by stakeholder or gender, or being sure to actively solicit indicators from both groups within larger fora.

**B. Periodic Participatory Monitoring to Assess Progress and Re-Plan**

For periodic participatory M&E meetings, the following approach has been used in AAI:

1. Open-ended exploration of progress on the theme, making sure that all participants are actively reflecting on progress and sharing their perspectives. This can be done by soliciting participants’ replies to the following set of questions:
  - (i) During planning, we decided it was important to meet periodically and evaluate progress to see if anything else must be done to ensure we are effective in [reaching objective x]. In your opinion, what has gone well? What about the others, what do you think has gone well?
  - (ii) What has *not* gone well?
  - (iii) What should be done to address [problem y]? What else could be done – does anyone have other ideas?
2. Assess progress using indicators, progressing one indicator at a time and asking, “You mentioned that if we are successful, we will see [change x]. Have you noticed any changes?”
3. Assess whether additional actions are required:
  - (i) If changes are good, ask, “Is the observed change enough, or does more need to be done?”
  - (ii) If no change has been seen or some changes are negative, ask, “What else needs to be done to ensure we do see [change x] in the future?”
4. For identified activities, develop a work plan as follows:

Activity	How	Who	When

**C. Participatory Evaluation**

At the end of a PAL process, when the objective has been reached (or, in some cases, when the process comes to an end due to insurmountable challenges), local indicators can be used to assess overall outcomes and impacts. This can be done through focus group discussions with each gender or stakeholder group, following the following steps:

1. Ask participants whether they have seen any changes as a result of their efforts and, if so, what are they? These may be old or new indicators. Each is compiled into a single list of indicators.
2. For each indicator, participants are asked, “How do you know [indicator x] has changed? What do you see?” Where possible, they are asked to quantify these changes in absolute terms (i.e. yield increased from x to y) or relative terms (through participatory ranking of before / after or with / without scenarios).

For distilling more general lessons from a PAL process through action research, PM&E results are a crucial piece of information for understanding aspects of the approach that are successful or unsuccessful. Aside from statements made informally during an implementation process, it is the only opportunity for evaluating intermediate stages of progress from the perspective of local users. Yet in AHI, a second research instrument was employed to capture observations from the perspective of action researchers. This tool, called *process documentation* (PD), is designed to ensure that action researchers (observers and/or facilitators of a change process) are also reflecting on the approach used and related outcomes as the process evolves over time. It provides a record of different stages in an innovation process – what was done, how, and its strengths and weaknesses in helping to get closer to the end goal. While one could argue that participatory M&E is sufficient for capturing this information, having action researchers independently observe the change process is useful for several reasons. First, additional information may be captured that may not have been openly observed and/or communicated by participants, for example relating to how aspects of the approach affected social dynamics or contributed to equitable management of power relations. Secondly, the action researcher is always observing approaches in light of broader global research questions and theoretical understanding, including but moving beyond the practical dimensions of problem-solving of primary concern to participants. Third, while both PM&E and PD help to monitor outcomes of different steps in or aspects of an approach, this tool helps to document more systematically “how” each step was carried out so that these intermediate outcomes can later be interpreted in the context of what was done. In this regard, the multiple PD reports generated at each stage of an evolutionary change process serve as a running record of what was done, why, how and with what outcome. The process documentation tool is summarized in Box L. For an example of a process documentation report, please refer to Annex I.

## STEP 8: IMPACT ASSESSMENT

The final means of data collection in action research consists of an impact assessment. While lessons important to the participants themselves may be learnt through a formal impact assessment, this step is not included for the sake of PAL per se. Rather, it is an essential step in distilling lessons for a broader audience and for reflecting back on hypotheses guiding the research. In AHI, for example, new approaches are being developed for us by a broader set of research and development organizations in the eastern African region. Simply stating that an approach works better than conventional approaches does not provide sufficient justification to managers for adopting the approach as part of standard institutional practice. Managers often require data from systematic impact studies which compare the new approach to those conventionally used in their organizations. Therefore, such impact assessments should be *comparative* in nature – clearly illustrating how the new and the conventional approaches differ (in terms of their characteristics and the outcomes derived from them), and relating outcomes to organizational goals (improved livelihoods, sustainable management of natural resources, equity). Impact assessments also help to assess whether hypotheses about “what works in practice” can be systematically tested.

AHI has experimented with two types of impact assessments – empirical and participatory. The approach used for participatory impact assessment is described in Box D as a logical progression of the PAL process. More formal impact assessments, on the other hand, are conducted by impact assessment specialists whose primary goal is to collect unbiased information for use by a broader audience (donors, the scientific community and, in the case of action research, targeted end user organizations). These assessments are designed following standards of academic rigor to control any influence the researcher may have on information

**Box L. Process Documentation Guide**

***Overview:** This tool is designed to facilitate systematic learning on development or change processes as they are implemented. It emphasizes documentation of process (the 'how') during the planning of each development intervention or innovation, during implementation (how the plan changed during implementation, successes and challenges, lessons learnt) and prior to subsequent actions (re-planning to overcome barriers, better align actions with objectives) at project or program level. Step I is used prior to any action or intervention, and Steps II and III for reflection and re-planning following each action or intervention. By reflecting back on each action or intervention, you generate a running record of what was done at each stage of a development or change process and the outcomes associated with that step. It helps to reconstruct key moments when successes were achieved or bottlenecks overcome, and trace these back to the approach used. The guide may be used by research teams or by development partners who may be excellent observers of process but lack documentation skills or the mandate for systematic learning.*

**I. PRIOR TO ANY ACTIVITY / STEP (during planning):**

- *Objective:* What are you trying to achieve overall, and during this particular step in the process?
- *Approach:* What is it that you will do to achieve the objective? What steps will be taken? Why were these steps chosen and by whom? Who will be involved at each step, and why?
- *Aspects of Process Monitoring:* What is going to be observed, monitored and documented as you go? What indicators will be used to assess progress?

**II. FOLLOWING ANY ACTIVITY / STEP:**

- *Approach:* What did you actually do to achieve the objective? Was the approach modified in practice? If so, how and why?
- *Successes:* What went well, and why?
- *Challenges:* What did not go well? What were the stumbling blocks, and why did they occur?
- *Findings:* What did you learn that you did not know before?
- *Resolutions:* What decisions were taken by participants?
- *Lessons:* What lessons or insights can be derived from these experiences to share with others trying to address similar challenges? What were you surprised to find out from the participants? What were you surprised to find out about the approach itself?

**III. PRIOR TO ANY FURTHER ACTIVITIES / STEPS:**

- *Recommendations:* What would you do the same and differently next time? What will be done to overcome the barriers encountered during implementation?

provided by interviewees (enumerator bias), to identify the right kinds of variables (unambiguous, measurable and relevant to the ultimate goals of the approach being tested), to be able to reliably account for what would have occurred in the absence of any intervention (a counterfactual) and to facilitate capture of both intended and unintended outcomes. The broader literature on impact assessment should be consulted when designing such studies, as AHI made no effort to generate new methodologies for formal impact studies. For sample outputs from participatory impact assessments, please refer to case studies in Annexes II and III.

**CONCLUSIONS AND IMPLICATIONS**

To effectively bridge the gap between understanding and practice, three fundamental gaps must be bridged. The first is for the research community to move further downstream into action arenas. The set of methodological tools acquired from universities in most regions of the world are especially designed for *understanding situations*. They are not well geared for *understanding processes of change*. Furthermore, while knowledge generated through efforts to characterize situations may have great value for shaping development interventions and policies, the means to adequately translate understanding into changes in policies and practices

is generally left poorly defined. The second gap lies within the community of practitioners (government line ministries, NGOs, etc.), who tend to minimize the contributions that systematic learning can make to improving their strategies and related impacts. Yet huge knowledge gaps remain with regard to what it entails to implement effective change processes for all aspects of social and economic development. Finally, the learning that goes on within external development support agencies must be effectively bridged with the learning that occurs at the local level.

This AHl Methods Guide can assist in bridging all of the above gaps by outlining a step-wise approach for:

- Learning systematically from ongoing development and change processes;
- Sequencing empirical research (diagnostic studies to “characterize situations”, formal impact assessments) with development and change processes so that the latter benefits from the former and lessons for a broader audience may be distilled from localized change processes; and
- Nesting and bridging levels of learning for solving localized problems while contributing to a broader body of knowledge.

This eight-step action research methodology is designed to enable the generation of broader lessons as contributions to development theory and practice by embedding formal inquiry in an action context. Furthermore, the *outputs* of action research are unique. Capable of generating new approaches for strengthening the impact of formal development interventions, action research generates practical tools of immediate relevance to practitioners. Thus, this tool can be used to generate working approaches to a host of challenges facing local communities and development and conservation agencies today. These might include any of the following:

- Enabling local communities to penetrate the market chain to capture more value from the fruits of their labor;
- Testing strategies for linking economic growth to sustainable natural resource management in agriculture, pastoralism, forest and fishery management;
- Minimizing elite capture from natural resources, development interventions or policy reforms;
- Finding mechanisms for biodiversity conservation that work (i.e. without encroachment, resource degradation, corruption or conflict);
- For understanding how to align policy outcomes with policy rationales (by understanding how to align policy implementation processes with desired outcomes); or
- For generating a set of tools to assist in making any of the above strategies operational (stakeholder consultations, negotiation support, multi-stakeholder platforms, participatory scenario analysis, participatory by-law reforms, etc.).

Ultimately, the effectiveness of such a tool will depend on the efforts made by educational, research and development institutions to implement their own internal reform processes to support an expanded set of tools for supporting learning. This Methods Guide can come in handy not only as a tool to be taken up by these organizations at the end of a reform process, but to support these reform processes themselves.



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## REFERENCES

- Agbamu, J. (2000) Agricultural Research–Extension Linkage Systems: An International Perspective. *AgREN Network Paper* 106a.
- Argyris, C., R. Putnam and D. MacLain-Smith (1982) *Action Science: Concepts, Methods and Skills for Research and Intervention*. San Francisco: Jossey-Bass.
- Baker, D. and L. Benjamin (2000) The Affirmation of the Scientist-Practitioner: A Look Back at Boulder. *American Psychologist* 55(2):241-247.
- Barnsley, J. and D. Ellis (1992) *Research for Change: Participatory Action Research for Community Groups*. Vancouver: Women’s Research Centre.
- Bernard, R.H. (1994) *Research Methods in Anthropology: Qualitative and Quantitative Approaches*, 2 ed. Thousands Oaks: Sage Publications.
- Chambers, R. (1992) Rural Appraisal: Rapid, Relaxed and Participatory. *IDS Discussion Paper* 311. Brighton: IDS.
- Checkland, P. (1991) From Framework through Experience to Learning: The Essential Nature of Action Research. In H.E. Nissen, H.K. Klein, & R. Hirschheim (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions* (pp. 397-403). North-Holland: Elsevier Science Publishers.
- Checkland, P. and S. Holwell (1998) Action Research: Its Nature and Validity. *Systemic Practice and Action Research* 11(1):9-21.
- Dick, B. (2002) Action Research: Action and Research. Paper presented at the seminar *Doing Good Action Research*, Southern Cross University, Monday February 18.
- Fals-Borda, O. (1988) *Knowledge and People’s Power: Lessons with Peasants in Nicaragua, Mexico and Colombia*. New Delhi: Indian Social Institute.
- German, L., S. Charamila, H. Taye, W. Mazengia, S. Ayele and T. Tolera (2006a) ‘Creative Governance’ and By-Law Reforms: Managing Trade-Offs of Natural Resource Governance in the Eastern African Highlands. Paper presented at the *Africa-Wide Research Workshop on Bi-Laws*, Nairobi, Kenya, November 27-29, 2006.
- German, L. et al. (in press) A Socially-Optimal Approach to Participatory Watershed Diagnosis. *AHI Methods Guide* B2.
- German, L. and A. Stroud (2007) A Framework for the Integration of Diverse Learning Approaches: Operationalizing Agricultural Research and Development (R&D) Linkages in Eastern Africa. *World Development* 35(5):792-814.
- German, L., A. Stroud, C. Opondo and B. Mwebesa (2005) Linking Farmers and Policy Makers: Experiences from Kabale District, Uganda. In: J. Gonsalves, T. Becker, A. Braun, D. Campilan, H. de Chavez, E. Fajber, M. Kapiriri, J. Rivaca-Kaminade and R. Vernooy (eds.), *Participatory Research and Development for Sustainable Agriculture and Natural Resource Management: A Sourcebook*. Laguna, Philippines: CIP-UPWARD, pp. 89-95.

- Greenwood, J. and M. Levin (1998) *Introduction to Action Research: Social Research for Social Change*. Thousand Oaks, California: Sage.
- Grimble, R. and K. Wellard (1997) Stakeholder Methodologies in Natural Resource Management: A Review of Principles, Contexts, Experiences and Opportunities. *Agricultural Systems* 55(2):173-193.
- Hagmann, J. (1999) *Learning Together for Change: Facilitating Innovation in Natural Resource Management through Learning Process Approaches in Rural Livelihoods in Zimbabwe*. Weikersheim: Margraf Verlag.
- Hagmann, J. and E. Chuma (2000) Tying Up Loose Ends: Integrating Soft and Hard Methodologies in NRM Research and Extension. In: I. Guijt, J. Berdegue and M. Loevinsohn (eds.), *Deepening the Basis of Rural Resource Management*. The Hague: ISNAR, pp. 109-121.
- Hammersley, M. (2004) Action Research: A Contradiction in Terms? *Oxford Review of Education* 30(2):165-181.
- IDS / IIED (1994) PRA and PM&E Annotated Bibliography. Sussex: IDS; and London: IIED.
- Kelly, J.G., L.S. Azelton, C. Lardon, L.O. Mock, S.D. Tandon and M. Thomas (2004) On Community Leadership: Stories about Collaboration in Action Research. *American Journal of Community Psychology* 33(3/4):205-216.
- Leach, M., R. Mearns and I. Scoones (1999) Environmental Entitlements: Dynamics and Institutions in Community-Based NRM. *World Development* 27(2):225-247.
- Lewin, K. (1946) Action Research and Minority Problems. *Journal of Social Issues* 2:34-46.
- Maarleveld, M. and C. Dangbégnon (1999) Managing Natural Resources: A Social Learning Perspective. *Agriculture and Human Values* 16:267-280.
- Marcus, G.E. (1995) Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. *Annual Review of Anthropology* 24:95-117.
- Meinzen-Dick, R., M. Adato, L. Haddad and P. Hazell (2003) Impacts of Agricultural Research on Poverty: Findings of an Integrated Economic and Social Analysis. *IFPRI Discussion Paper 111*, 1-87.
- Munk Ravnborg, H. and M.P. Guerrero (1997) Stakeholder Analysis in Natural Resource Management. *ILEIA Newsletter* 13(1):12.
- Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, UK: Cambridge University Press.
- Pandey, S. and G.N. Yadama (1990) Conditions for Local Level Community Forestry Action: A Theoretical Explanation. *Mountain Research and Development* 10(1):88-95.
- Percy, R. (1999) The Experiential Learning Cycle and its Application towards the Transformation of Governmental Extension Services in Sub-Saharan Africa. *International Journal of Lifelong Education* 18(5):370-384.
- Pretty, J. and L.E. Buck (2002) Social Capital and Social Learning in the Process of Natural Resource Management. In: C.B. Barrett, F. Place and A.A. Aboud (eds.), *Natural Resources Management in African Agriculture*. Nairobi: ICRAF and CABI Publishing.
- Reason, P. and H. Bradbury (2001) *Handbook of Action Research*. London: Sage.
- Röling, N. and A. Wagemakers (1998) *Facilitating Sustainable Agriculture: Participatory Learning and Adaptive Management in Times of Environmental Uncertainty*. Cambridge: Cambridge University Press.
- Sanginga, P. (2004) Facilitating Participatory Processes for Policy Change in Natural Resource Management: Lessons from the Highlands of Southwestern Uganda. Proceedings of the conference *Integrated Natural Resource Management in Practice*, ICRAF Headquarters, Nairobi, 12-15 October, 2004.
- Trout, J., P.R. Doeckci, J.R. Newbrough and R.T. O’Gorman (2003) Action Research on Leadership for Community Development in W. Africa and N. America: A Joining of

- Liberation Theology and Community Psychology. *Journal of Community Psychology* 31(2):129-148.
- Wittayapak, C. and P. Dearden (1999) Decision-Making Arrangements in Community-Based Watershed Management in Northern Thailand. *Society & Natural Resources* 12:673-691.

## **ANNEX I:**

### **Sample Process Documentation Output – Multi-Stakeholder Negotiations, Sakharani Boundary**

#### I. PRIOR TO INTERVENTION (PLANNING)

##### *Objective*

To advance multi-stakeholder dialogue and planning for improved Sakharani boundary management.

##### *Approach*

Call together Sakharani Farm Manager, local leaders (from the Ward, 1 village and affected hamlets), watershed representatives of affected hamlets, and a few affected farmers to explore options for reconciling the interests of both stakeholders (Sakharani, affected farmers). Follow the following steps:

1. Feedback what was done so far and the findings:
  - a) Participatory identification of watershed problems
    - Competition of Eucalyptus on farm boundaries with crops
    - Eucalyptus degrading water sources
  - b) Landscape niches found to need improved management:
    - Farm boundaries
    - Springs
    - Waterways
    - Baga forest boundary
    - Sakharani and Tea Estate boundaries
  - c) A study of farmer knowledge on the compatibility of different tree species with different landscape niches (see Annex below)
  - d) First meeting between Sakharani Manager and village leaders from Kwekitui and Mbelei
2. Capture observations by participants on what was missed, or clarifications.
3. Validate compatibility criteria (“interests”) of each stakeholder and negotiate “binding” niche compatibility criteria:

##### Farmers’ Criteria

- Not harmful to crops
- Adds nutrients to the soil
- Limited shade
- Does not deplete soil moisture

##### Sakharani Criteria

- Secures the boundary
- Fast-growing
- Coppices

- a) Ask participants, “Does any tree fit all these criteria at once?”
- b) If not, mention that we have to choose those criteria that are most important to each actor. Have each group select those criteria that should be “binding” (i.e. made into policy). Try to minimize the number of binding criteria, so people can respect the

policy. “Binding” criteria should be those that minimize existing problems (negative interactions among stakeholders).

- c) Identify tree species that fit the combined criteria (from our list, and other potential species).
- d) Final work plan with activities (*what?* - technical, policy, rules on nursery management, etc.), responsibilities (*who?*) and timeframe (*when?*).

## II. FOLLOWING INTERVENTION / STEP (REFLECTION)

### *Approach (as modified during implementation)*

- “Binding criteria” were not identified, because criteria were few overall and participants felt more comfortable negotiating the species directly.
- We did not plan for the “when” in work plans, due both to the limited time and the need to consult more people before making specific work plans. The methodology actually has to be spread out over several steps: a) preliminary dialogue, b) consulting others (meetings at hamlet level & with neighboring farmers), and c) final work plans.

### *Successes*

- The event of meeting the Sakharani farm managers, local leaders and farmers was an important event, because they had never met before to discuss their common problems and conflicts were left unaddressed prior to this time.
- The outcome was favorable for both parties: Sakharani agreed to plant Mtalawanda in place of Eucalyptus to address the concerns of neighboring farmers, and farmers agreed to plant more trees that are water-conserving.
- There was good interaction between farmers and the Sakharani Manager during the meeting.
- The Sakharani Manager showed good cooperation through his provision of a convenient venue.
- Both farmers and the Sakharani Manager showed activeness and willingness to solve their common problems.

### *Challenges*

- The meeting dragged on for too long as we went into discussions on appropriate tree species for different niches.
- Representation of different hamlets was not very good.

### *Findings*

- The Sakharani Manager rejected Mparachichi for the farm boundary because it produces fruits that would attract villagers and because it does not grow high (just branches outward). This led to the addition of another niche compatibility criterion on the part of Sakharani: that the trees do not produce edible fruits.
- The Farm Manager was not so excited about Mtalawanda because it is slow growing, and the farmers were hesitant because it has a lot of seeds that will propagate the tree spontaneously. However, they agreed that the farmers and manager could easily uproot the seedlings. The reason they chose this tree despite these disadvantages is that the tree grows high (wanted by farm manager), it does not branch much or create much shade (wanted by both parties), doesn’t interfere with crops (wanted by farmers), and is permanent (long lifespan).

- Agrocarpus is not good as a boundary tree because its roots invade farmland and compete with crops.
- There was a hot debate about Eucalyptus, and the farmers proposed at first to eliminate Eucalyptus – starting from the village forest. Martin led the discussion away from the idea of a total ban, focusing instead on land use planning (appropriate tree niche management).
- The following compatibility criteria were identified by the two groups as the most crucial for resolving the Sakharani boundary management problem:

Sakharani Criteria

1. Long lifespan
2. High canopy
3. Fast growing
4. No edible fruits
5. Limited branching/shade

Criteria of Neighboring Farmers

1. Not harmful to soil
2. Not harmful to crops
3. Has limited branching / shade
4. Does not dry water from the soil or springs

- The following compatibility criteria were identified by the two groups for the management of water sources:

Criteria of Sakharani

1. Conserves water
2. Can be lumbered

Criteria of Farmers

1. Conserves water
2. Can be lumbered
3. Can be used for fuel wood
4. Adds nutrients to the soil

*Resolutions*

A. Sakharani Boundary:

- To replace Eucalyptus with Mtalawanda.
- To hold a second meeting with all farmers bordering the mission to discuss a more detailed plan for the felling of Eucalyptus and managing tree seedlings, to be called by the VEO of Mbelei village.

B. Water Management:

- To choose other trees that do not extract much water from the springs.
- To get advice from foresters on how to plant and manage species that they are not able to propagate on their own.
- To eliminate cultivation near water sources
- To grow shrubs like Tambwe and Jeni on springs
- To grow trees and other plants (shrubs, grasses) according to their appropriate niches:

<b>Springs</b>	<b>Within farms</b>	<b>In waterways</b>
Mkuyu	Msongoma Mshai nemawe	Muombeombe
Muombeombe	Mkuyu	Mnyasa
Maong'e	Lucina Mparachichi Mfyoksi	Muarubaini
Muanzi	Mpera	Mueeti
Tambwe	Maong'e	Mfufu
Bokoboko	Mlobe	Bokoboko
Zia		
Jeni		
Mvuta maji		
Mueeti		

- Trees planted on springs should only be planted due to their potential to conserve water and not for other uses.
- Farmers living around water sources will be sensitized to minimize crop cultivation and cultivate more trees (recommendation by Sakharani manager).
- Village Watershed Committee should go around each hamlet and meet with the hamlet members on issues related to water conservation.
- Establish tree nurseries by forming nursery management groups and seeking outside assistance for technical knowledge, seeds and tubes.
- To encourage every community member to grow trees that conserve water; form new and enforce existing village by-laws to support these efforts.
- Village leaders will hold a general village meeting to make sure every community member is aware of the negative effect of Eucalyptus on water resources.
- Village watershed committee members to carry out a survey at hamlet level to organize for nursery management (number of nurseries, group members, location, management plants, number of different species to be cultivated), and to assess existing by-laws and the need for additional by-laws for water conservation.
- AHI will provide a format for the above hamlet survey.

### *Lessons and Insights*

- We had originally approached Sakharani due to problems faced by the community, thinking it was only smallholders who were affected by the interaction. When we conducted a prior stakeholder consultation, we found several problems felt by Sakharani as well – and a need on both sides to engage in dialogue. This ended up being an opportunity during negotiation by giving side bargaining power (each wanted something from the other).
- The terminology used matters in creating a perception of conflict vs. collaboration during stakeholder consultations and multi-stakeholder negotiations. What words we use either polarize the two groups (“negotiate”, “stakeholder”) or minimize the sense of conflict (“discuss”/“dialogue”, “groups”).
- The crucial role of the third party in conflicts that are latent and communication is limited.
- Other actions to minimize the sense of conflict can also help the approach, including: a) making a joint list of problems for feedback rather than keeping them as lists of problems by each group; b) addressing the concern of the more powerful party first to give them a sense of responsibility to others; c) giving the land owner (whether Sakharani or neighboring farmers) the right to reject a proposal from the other side to minimize the feeling that we are encroaching upon their rights.
- It is easier to discuss niche-compatible species than niche compatibility criteria. Therefore, the methodology should move from appropriate species to the reasons why they selected those species (criteria or interests) OR come to the meeting with a few criteria already identified.
- Openly asking the land owner (the party causing the problem for others) whether they can accommodate the interests of others is better than doing so in private, because peer pressure heightens their sense of social responsibility when discussing in front of the other party.
- Prior identification of niche compatibility criteria should specify whether the person is the owner or the affected party. For example, “if you are planting your own boundary trees, what are the compatibility criteria” and “if you are a neighboring farmer, what are the compatibility criteria for neighboring trees”?

- Prioritizing those compatibility criteria that influence conflict or cooperation was a good approach, making it easier to come up with a mutually acceptable species.

### III. PRIOR TO ANY FURTHER ACTIVITY / STEP:

#### *Recommendations*

- Give the community the responsibility to consult others following the meeting on decisions that take time, as a way to minimize the length of the meeting and to make it more participatory (consulting more people in the process).
- Come to the meeting with a few criteria already identified for the particular niche in question, then move right into identifying species that fit the criteria of both parties – and complementing the criteria through this discussion (i.e. when a certain tree is accepted or rejected, asking why).
- When putting the criteria of each party on paper for feedback, the niche compatibility criteria to be shared back must be adapted to whether the stakeholder group is an owner or an affected party. Otherwise, indicators suggested by farmers that trees planted on farm boundaries be “good for fire wood” can create unnecessary suspicions on behalf of landowners. When dealing with an affected party for any given land use issue, their criteria or interests should emphasize minimizing harm (rather than maximizing the value that could be derived by them from a solution).
- Continue to emphasize prioritization of compatibility criteria during negotiations, so that species selection can be oriented around those issues fundamental to conflict or cooperation.



IV. ANNEX:  
Feedback of Prior Steps and Outcomes

I. STEPS TAKEN SO FAR

- Identification of natural resource problems by AHI team (competition of Eucalyptus on farm boundaries with neighboring crops, impacts of Eucalyptus on water sources).
- Identification of several niches needing improved management.
- Niche Compatibility Study (based on farmers' knowledge) on different tree species.
- First meeting between Sakharani Manager and village leaders from Kwekitui and Mbelei.

II. IDENTIFIED WATERSHED PROBLEMS

Problem	Problem Faced By:	
	<i>Farmers</i>	<i>Sakharani</i>
Competition of Eucalyptus on farm boundaries with crops	X	
Eucalyptus degrading water sources	X	X
Decline of rainfall	X	X
Degradation of water sources	X	X
Damage of young trees by livestock		X

III. NICHE REQUIRING IMPROVED MANAGEMENT

- Farm boundaries
- Springs
- Waterways
- Baga forest boundary
- Sakharani and Tea Estate boundaries

IV. RESULTS OF NICHE COMPATIBILITY STUDY

**Table 1.** Trees Found to be Causing Problems on the Landscape

<i>Problem</i>	<i>Species Causing Problem</i>
Dries springs	Mkaratusi (all), Mkulo, Mziaghembe
Leaves are bad for crops and soil	Mkaratusi (all), Msambu, Mziaghembe, Nguanguzo
Increases runoff	Mshai mamba, Mshai mawe, Mapofo, Mti ulaya, Maong'e
Creates a large shady area	Miembe, Mkosoghoo, Mkulo, Mkuyu, Msambia, Msambu, Mshihwi, Muuwa, Mvumo, Mziaghembe
Kills undergrowth	Mshai mamba, Mshai mawe, Mti ulaya, Muuwa, Mziaghembe
Kills off other tree species	Mkaratusi (some species), Mti ulaya, Mvumo, Mziaghembe

**Table 2.** Perceived Compatibility of Different Tree Species with Different Locations on the Landscape

Landscape Location	Compatibility Criteria	Least Compatible	Most Compatible <sup>1</sup>
1. Farm Boundaries	<ul style="list-style-type: none"> <li>· Compatible with crops</li> <li>· Adds nutrients to the soil</li> <li>· Does not take much water from the soil</li> <li>· Creates small shady area</li> </ul>	<ul style="list-style-type: none"> <li>· Mziaghembe</li> <li>· Mkaratusi (all)</li> <li>· Mkosoghoo</li> <li>· Msambu</li> <li>· Mkulo</li> <li>· Nguanguzo</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Mlobe</b></li> <li>· <b>Maong'e</b></li> <li>· <b>Mtalawanda</b></li> <li>· Msongoma</li> <li>· Mshai nemawe</li> <li>· Agrocarpus</li> </ul>
2. Springs and Waterways	<ul style="list-style-type: none"> <li>· Keeps the area wet (conserves moisture)</li> <li>· Does not take much water from the soil</li> </ul>	<ul style="list-style-type: none"> <li>· Mkaratusi (all)</li> <li>· Mziaghembe</li> <li>· Mkulo</li> <li>· Mti ulaya</li> <li>· Muuwa</li> <li>· Miembe</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Maong'e</b></li> <li>· <b>Msambu</b></li> <li>· <b>Mshai wawa</b></li> <li>· <b>Mwombeombe</b></li> <li>· Jeni</li> <li>· Nguanguzo</li> </ul>
3. Forest Boundaries	<ul style="list-style-type: none"> <li>· Does not inhibit growth of trees or crops</li> <li>· Does not take much water from the soil</li> <li>· Not indigenous</li> <li>· Branches may be cut for fuel</li> </ul>	<ul style="list-style-type: none"> <li>· Mziaghembe</li> <li>· Mkaratusi (some)</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Mapofo</b></li> <li>· <b>Msongoma</b></li> <li>· <b>Mtalawanda</b></li> <li>· Agrocarpus</li> <li>· Msambia</li> <li>· Miembe</li> </ul>
4. Roadsides (Note that farmers strongly disagree on the suitability of <i>Agrocarpus</i> )	<ul style="list-style-type: none"> <li>· Not harmful to crops</li> <li>· Branches do not drop</li> <li>· Strong roots good for road stabilization</li> <li>· Does not break the road</li> </ul>	<ul style="list-style-type: none"> <li>· Mziaghembe</li> <li>· Eucalyptus</li> <li>· <i>Agrocarpus</i></li> </ul>	<ul style="list-style-type: none"> <li>· <b>Msongoma</b></li> <li>· <b>Mtalawanda</b></li> <li>· Mapofo</li> <li>· Mwarobain</li> <li>· <i>Agrocarpus</i></li> </ul>

<sup>1</sup> Tree species in **bold** font are those that are the MOST compatible of the species listed.

## **ANNEX II: Action Research Case Studies**

### **CASE #1: EQUITABLE TECHNOLOGY ACCESS, AREKA**

#### **RATIONALE**

Seed supply systems are critical in ensuring food security in Africa. A viable agricultural development process rests on an efficient seed supply system. Demand for income-generating technologies in rural communities of eastern Africa is high independent of internal socio-economic differences. Yet some groups have been historically disadvantaged due to their limited ability to invest in costly technologies and related inputs, low resource endowments, and social biases exhibited by communities themselves and in the approaches used by agricultural extension agencies. Experiences indicate that the formal seed sector rarely considers women and poorer households in dissemination of improved seed, as evidenced by erroneous assumptions that influence farmer selection processes for seed access (i.e., limited ability of the poor and women to re-pay loans). Multiplication by the State and the private sector has proven to limit access to some sectors of society. To make technology access equitable and sustainable, systems for seed multiplication and distribution should be developed with the involvement of farmers, with equitable participation by wealth and gender.

#### **PARTICIPATORY PROBLEM DIAGNOSIS & PRIORITIZATION**

This case study was developed in the context of an ongoing watershed management research program in Gununo Watershed, Areka. A large set of watershed problems of farmers had been previously identified through socially-disaggregated focus group discussions with groups of male and female farmers, elders and youth. With financial support from the Collective Action and Property Rights program (CAPRI), site teams sought to identify in greater detail those problems requiring institutional solutions in the form of collective action, negotiated solutions or reforms in the practices of outside institutions. During focus group discussions with male and female farmers in Areka, biases in benefits derived by formal research and development agencies were identified (Table IIa). When asking, “Who benefits most?” and “Who benefits least?” from each of the identified institutions, women stated that wealthier male farmers benefit most from agricultural extension. When the team probed further, asking, “And what about women?,” participants simply laughed, stating, “In all my years, I have *never* seen an extension agent working with a woman.” Clearly, these women had faced an extreme gender bias among extensionists. Yet in addition to more equitable extension practices being a priority for women and the poor in Gununo, such biases were found to be widespread throughout AHI benchmark sites. This therefore became a priority topic for action-based research at both site and regional levels.

**Table IIa.** Formal Institutions with Perceived Unequal Benefits to Local Residents in Gununo Watershed

Type of CA	Areka
Agricultural Research	Benefits few farmers who have enough land and labor.
Agricultural Extension	Farmers with a lot of land and labor; male farmers.
Cooperatives	Poorest farmers benefit least.

## DEVELOPMENT OF ACTION RESEARCH PROTOCOLS

### *Title*

“Improving Equitable Access and Benefits from Technology Dissemination in Gununo, Ethiopia”

### *Background and Justification*

Gununo Watershed is located in the high lands of southern Ethiopia where land is scarce due to intense population pressure. Productivity of crops is very low due to several factors of which poor genetic potential is one. Thus, food shortage is common for at least three months, even in years of good rainfall. The government has tried to disseminate improved seeds to farmers through credit. However, repayment rates were very low and the government is currently disseminating improved seeds to farmers for cash payment. As most farmers in the watershed are resource poor, especially women, it has become difficult for them to access improved seeds through this system. During preliminary focus group discussions, women complained of an extreme gender bias in agricultural extension. Biases toward wealthier households were also noted. Hence, a participatory action research was conducted to generate new approaches for technology dissemination that are both more *equitable* and more *viable* due to lower levels of risk to farmers and higher levels of repayment.

### *Objectives*

The following objectives guided this research:

1. To enable local negotiations to establish mechanisms for equitable technology access and utilization irrespective of gender and wealth.
2. To implement strategies (local by-laws, credit systems or technology targeting systems) to enable equitable technology access and related benefits.
3. To understand the key elements (policies, institutional practices, credit systems, negotiations or other) to improved equity in technology access and related benefits.

### *Research Questions and Hypotheses*

**Research Question:** What is an effective approach for enhancing equitable access to seed and higher rates of credit repayment in Areka, and what are the implications for other food-insecure regions?

**Hypothesis** – Negotiation support and by-law reforms can help to enhance equitable and viable approaches to seed dissemination through participatory development of rules for access and repayment and the enforcement of these rules.

### *Approach and Data Collection*

<b>Steps in the Approach</b>	<b>Data to be Collected</b>
1. <i>Local negotiations</i> (planning) to identify social units through which technologies should flow and other mechanisms to be used to enhance equitable access to technologies.	<u>Process documentation</u> report of the negotiation process and agreements reached using the PD Guide.
2. Design and implementation of local by-laws	<u>Process documentation</u> of different

(planning) for improved equity in technology dissemination and utilization.	steps in the by-law negotiation, endorsement and enforcement process using the PD Guide.
3. <i>Participatory M&amp;E</i> with diverse actors (female farmers, male farmers, PA leaders, organizations involved in technology dissemination) to see whether innovations in the approach are bringing about desired changes in equity and loan repayment.	<u>Participatory M&amp;E</u> reports identifying successes and challenges in improving equity in technology access and related benefits, with action plans that clarify how identified barriers will be addressed.
4. <i>Trouble-shooting</i> to address identified barriers in equitable technology access.	<u>Process documentation</u> reports of activities designed to address barriers to equitable access using the PD Guide.
5. <i>Impact assessment</i> .	<u>Impact assessment</u> report on technology access, utilization and benefits among female farmers and poorer households.

*Outputs*

Research paper summarizing the approach used, how it differs from conventional approaches, and the outcomes for different groups.

*Anticipated Outcomes*

- More women and poorer households are accessing technologies through negotiation of rules for equitable access, rule enforcement and in-kind credit.
- High rates of loan repayment contribute towards a more viable credit system.

STAKEHOLDER ANALYSIS

Given that participatory problem identification was already gender-disaggregated and pointed to gender and wealth categories as major local stakeholder groupings, no formal stakeholder analysis was done. However, follow-up meetings at village level were carried out to better understand how different groups have been affected and to initiate the planning process. For village-level consultation and planning meetings, smaller gender-based groupings were often used to ensure the perspectives of women were adequately captured. The interests of women and poorer households were systematically considered during the negotiation and planning processes.

PARTICIPATORY PLANNING WITH BENEFICIARIES

Using Section I of the Process Documentation Guide as a reference, the following steps were planned as a process for participatory planning. The actual outcomes of the meeting and lessons learnt are summarized in Box IIa.

**Objective:** To facilitate the negotiation of a mechanism whereby limited amounts of new technologies can be sustainably and equitably propagated for more widespread benefit.

### **Approach:**

1. Call village meeting in each watershed village, including FRG leaders and male and female farmers from each sub-village to be sure there is good representation by gender and location in decisions taken.
2. Provide feedback on decisions taken so far with the community on technology dissemination:
  - a) 5 FRGs have been formed (1 in each village in the watershed).
  - b) Each FRG prioritized technologies they would like to access (including chickpea, elephant grass, Irish potato, taro, tef, wheat, chickens).
  - c) Action plans were formulated to match activities with a timeframe according to the appropriate seasons.
  - d) A rule was created whereby select FRG members will multiply the technology given, and return the same amount (planting material, animals) to the FRG leader. These technologies will then be used by another FRG member until all members acquire the material.
3. Objective of the meeting: to discuss how other community members can benefit from the limited amount of material available by developing a spillover mechanism between existing FRGs and other social units (Amba Idir, church Idir, Mengistawi Budin, etc.).
4. Negotiate spillover of the technology from FRGs to others (how much, by whom, how) through plenary discussion.
5. Divide into two groups by gender, and ask each group to do the following:
  - a) Prioritize technologies (site team member should note whether married women and female household heads have different priorities);
  - b) Select the preferable social unit through which dissemination can bring the most benefits to the group – women/men (note whether married women and female household heads have different priorities);
  - c) Negotiate how these social units will take up and multiply the technology for equitable access;
  - d) Discuss how management practices can be shared together with the materials (seed, breeds).

## IMPLEMENTATION AND MONITORING

### *By-Law Endorsement*

Following the approach to negotiating rules and processes for equitable technology dissemination outlined in Box IIa, by-laws were officially endorsed by PA officials. Subsequent steps of the process describe how these by-laws were followed in practice as the agreements were implemented.

### *FRG Establishment According to Established By-Laws*

By-laws finally endorsed identified FRGs as the social unit through which seed would be multiplied and disseminated to others. FRG members were selected by the community. The criteria used for selection included: (i) interest and commitment to experiment and disseminate new technologies to others; (ii) ability to conduct trials for technology validation prior to dissemination; (iii) availability of enough land for trials; and (iv) fair distribution of membership across all watershed villages. Moreover, care was given to include farmers from

**Box IIa.** Process Documentation Report on Planning for Equitable Technology Access

To finalize the process documentation, the following reflection was conducted following the planning events in the field:

**II. REFLECTION (following any activity / step):**

**Approach:** *(What did you actually do to achieve the objective? Was the approach modified in practice?)*

—The approach for ensuring a representative group in preliminary village-level meetings changed somewhat. Leaders were asked to invite equal numbers of men and women from different wealth categories as well as different families. Additional participants included village leaders. About 20 participants overall came to the meeting, with equal numbers of men and women at the beginning.

—The two gender groups (men on the one hand, and married and widowed women on the other) were brought together at different times to be able to facilitate each group through the decision-making process. This was done to minimize the time spent by each group in the meeting.

—The remaining steps were done as planned, with the exception of how “formalized” the decisions could be from Steps 4 and 5. While they agreed on the channels through which technologies could be accessed by different groups (FRGs vs. women’s groups vs. government vs. other), they decided that formalizing actual by-laws needed to be done at PA level with all villages participating. The implication is that an additional step was added, consisting of PA-level by-law negotiations.

—The details of the PA-level by-law negotiation process are as follows: (i) Participants in PA-level negotiations were agreed upon at village level across all villages. Farmers wanted that the following groups participate: administrators at different levels (PA, sub-PA, and Mengstawi Budin/village governmental) so they can hear from the outset what people are saying and be able to implement the by-laws; FRG leaders (who will be responsible to implement agreed-upon by-laws); FRG members - female and male (also for implementation), non-FRG community members (through facilitation, agreed upon equal participation by gender and wealth criteria and also by village). While discussing at PA level, only those villages falling within the watershed (4 out of 5) were invited. Farmers and officials from 1 village within the watershed which falls inside another PA were also invited. (ii) AHI activities in the watershed were introduced. An update on the discussions at village level was given, including the technology dissemination pathways proposed by different social group in different villages (to be used in by-law formulation). (iii) By-law negotiations then began through plenary discussion. First, we discussed crop technologies, including their multiplication (particularly, the management to maximize seed quality and quantity) and dissemination (how can it be transferred from one farmer to another – free/exchanges/sold, how much, when and to whom). We discussed the same for livestock (in this case, chickens). Next, sanctions for non-compliance with by-laws were established, as well as the conditions under which these sanctions do not apply. Next, implementation dates for by-laws were decided, and who is responsible for implementing the by-laws (divided into activities, and responsible persons).

**Successes:** *(What went well, and why?)*

—Inclusion of all social groups and detailed negotiations at village level facilitated by-law formulation at PA level because many issues had already been worked through.

—The needs of different social categories are being systematically addressed through this approach, different from existing approaches being used by extension in the area.

—The communities themselves proposed by-laws as a means of enforcing equitable technology access. This was not envisioned in the original approach, and suggests a commitment to equity.

**Challenges:** *(What did not go well? What were the stumbling blocks, and why did they occur?)*

—While equal numbers of men and women were called and came to the meeting, women began to leave early due to household chores. Women were not participating as actively at PA level due to the mixing of men and women, and the cultural practice of women not speaking in public.

—It was challenging to bring diverse perspectives to bear on final decisions. The main debate was not by gender or wealth, but between two “factions” defined by whether they are already FRG members (members wanting to pass limited seed onto others, and non-members wanting to increase the amount).

—It was difficult to agree on the amount of chickens to be shared with others (returned) given their lack of confidence in survivorship rates. Whether to give the egg or the chicks was also hotly debated.

**Findings:** *(What did you learn that you did not know before?)*

—During PA meetings, certain social groups were not considered effective in managing the diverse requirements of the dissemination process (seed multiplication, monitoring, dissemination). Women’s Idir emphasize burial activities and not technology dissemination, and the leaders are not farmers but...

**Box IIa.** Process Documentation Report on Planning for Equitable Technology Access (*continued*)

...retailers; they would have less experience and time for required activities. Women's Association is new and poorly experienced in managing group work. The PA Development Agent oversees all development activities, and was seen as better placed to monitor FRG activities than do the work directly.

**Resolutions:** (*What decisions were taken by participants?*)

—A decision was made to formalize by-laws at PA, not at village level. The reason was to ensure that by-laws are harmonized across villages, and to strengthen their implementation. If more villages are supporting the by-laws, the PA will be stronger in implementation.

—At village level, diverse dissemination pathways were proposed by different social categories according to the perceived effectiveness of each. When going to PA level, these were reduced to one (FRGs) through negotiating which social units would be most effective in managing the diverse requirements of dissemination (monitoring, multiplication process, dissemination, etc). The potential negative impacts of this decision on equity were minimized by ensuring that appropriate by-laws governed technology access within FRGs.

—Technologies introduced are communal property, not the property of the individual until multiplied and shared. Technologies being disseminated are therefore not to be used for consumption purposes.

[*Note: In original PD report, detailed Annexes were included to document village-level proposals on dissemination pathways and PA-level by-laws and responsibilities for implementation.*]

**Lessons & Insights:**

—Given that community meetings are difficult for women to attend for the duration, keeping meetings short or supplementing community meetings with household visits will be required in the future to ensure that women's voices are integrated into actual decisions.

—Protracted community meetings are difficult for women to attend; keep meetings short or supplement meetings with household visits to ensure that women's voices are integrated into actual decisions.

—The division of gender groups ensured that women had the space to discuss openly their concerns. In prior meetings, despite equal numbers of men and women, men dominated discussions. At this time, women even suggested they meet independently in the future.

—By-laws should be formalized at PA level but be informed by village-level participatory processes.

—By-laws will be effective only within the administrative area in which they are endorsed. Reaching other households will require scaling out of the by-law reform process.

—When taking village-level decisions (which were by design gender-disaggregated) to the PA level, male participation becomes stronger due to the size of the group and cultural tendency for male-led debate. Equity could be compromised through the dialogue (which tended to be led by men, but always consulting women's views), but ensured through by-laws which ensure equal technology access by gender and wealth. We don't know whether the reduction in dissemination pathways to one (FRGs) compromises equity in practice. This will be tested through participatory M&E by diverse groups.

—Policy-making has a homogenizing effect. Balancing this with equity is a challenge, and needs to be explored further. Special attention must be given during PA-level policy dialogue and follow-up monitoring to ensure that amalgamated decisions do not undermine equity.

**Recommendations:** (*What would you do the same and differently next time?*)

—Involve extension in watershed-level testing of the approach, and explore possibilities of testing the approach at Wereda level as a second phase of work. Rather than make policy decisions at this higher level from the start, which could undermine the local relevance of the resulting by-laws or equity, test how different these by-laws are across PAs together with the extension service. If they are very similar, then negotiations might be effective at higher levels; if different the recommendation for institutionalizing the approach would be to always plan at PA level as described herein.

—When bringing policy recommendations from a lower to a higher level, options were reduced in number (from multiple dissemination pathways to a single 1). The reason for this was that criteria for effective dissemination were discussed thoroughly at the PA level only, and some groups eliminated accordingly (they didn't fit the criteria). In the future, it would be good to test the impact of minimizing options by bringing in these criteria earlier on in discussions (i.e. through gender-disaggregated dialogue at village level) to see if the pathways are similarly reduced to FRGs. If diversity continues despite these discussions, then it is important to explore whether policy diversity is possible (i.e. each social unit with its own by-laws for equitable access).

—Despite other social units not having the skills of FRGs, they should be further considered by asking farmers whether they could be taught these skills and should not be excluded without due consideration.



different social categories (women and men; low, medium and high wealth categories). A total of five FRGs were established in the five zones of the watershed to facilitate the process of technology testing and dissemination. Each FRG elected three Executive Committee members and a total of 20 - 30 member farmers under each FRG. The FRGs were established by area (village) rather than by crop. This was done to reduce the difficulty in management and to facilitate higher numbers of FRGs.

#### *Seed Multiplication and Dissemination*

Selected varieties of taro and wheat were given to FRG members through FRG leaders to be evaluated before wider dissemination. One hundred sixty farmers in 5 villages were each given five kilograms of improved wheat seed (varieties Wabe and Abola) to sow in August 2005. This amount of starter seed was assumed to cover an area of 400m<sup>2</sup> at a seeding rate of 125kg/ha. Similarly, corms and cormels of an improved taro variety called Boloso-I were distributed as planting material to over 120 farmers for January planting in 2005. The starter taro seed was developed and obtained from the Areka Agricultural Research Center. Due to the shortage of planting material and the high demand by farmers, the research team dispatched 50 to 400 corms per person. This amount of planting material was assumed to cover an area of 100m<sup>2</sup> land at a spacing of 50 x 50 cm. The amount of seed for both wheat and taro were determined taking into account crop productivity and average farm size.

FRG members were given orientation about the established by-law and improved agronomic practices before seed delivery. Each farmer had to sign while taking the seeds. Most of the farmers grew the crops successfully, especially taro. The FRG leaders monitored the seed multiplication and dissemination process from sowing to harvest. The taro produced by far higher yield than the local cultivars and it was preferred by all farmers also for its other characteristics. The high yield was attributed to high number of tillers (up to 40) and corms per hill coupled with relative tolerance to low moisture stress. Some of the interviewed farmers said that they were able to use the produce for home consumption starting from August and generated income which they have not experienced from other crops including coffee. The wheat yield was not much higher than the local variety and was variable across villages due differences in fertilizer application and weeding. Therefore, additional varieties were included in the system and had started to out-perform both the local cultivar and the improved seed of the extension program of the Ministry of Agriculture at the time of this report.

#### *Monitoring and Evaluation*

Participatory monitoring was done in two ways. First, FRG leaders recorded amounts of seed provided to FRG members for testing and amount of seed given back for further dissemination. They also monitored non-FRG members receiving seed from the FRG, to enable tracking of equitable access by gender and wealth, as well as the rates of seed multiplication and sharing by non-FRG members. Secondly, site team members met periodically with different groups to assess progress according to local indicators. Local indicators were identified and farmers were asked to evaluate progress using these indicators, so that corrections could be made where needed. Outcomes of one of these participatory M&E meetings are summarized in Table IIb. In this case, indicators were found to be performing relatively well and participants did not recommend any major adjustments in the approach.

**Table IIb.** Local Indicators for Equitable Technology Access and their Performance

Indicators	Before	After
Access to the poor	Most had no access to improved seed	Most who had no access to seed have now accessed improved seed
Access to female-headed households	Women were not usually included in the list of candidates for seed delivery	Those women farmers who has no access to seed in previous times have accessed improved seed for the first time
Awareness of the technology's performance prior to delivery	No awareness prior to delivery	FRGs evaluated technologies and shared information on their performance and preferences prior to wider dissemination
Mode of improved seed provision and repayment	In cash with down payment of 25% at delivery and full payment after harvest ( <i>'The government takes money at an expensive price, but collects the repayment at the time when the price is low'</i> )	Both credit and repayment made in kind ( <i>'The repayment of seed at harvest is cheaper to re-pay'</i> )
Follow up	There is no practice of follow-up of the introduced technologies by extension agents ( <i>'They give us and they disappear'</i> )	FRGs and the research team follow up on crop management and repayment

## IMPACT ASSESSMENT

The impact assessment set out to observe two main outcomes related to research objectives and hypotheses: equitable access and re-payment rates.

### Equity

Local indicators were used to assess equity given their explicit emphasis on equitable access by male and female farmers. At the end of the action research process, farmers were asked to quantify observed changes by participatory matrix ranking. Participants from each village were asked to divide fifty seeds between the two approaches for each indicator, with more seeds representing better performance. The measure of performance was therefore relative, providing important information for extension managers to be able to evaluate the new approach.

**Table IIa.** Farmers' Evaluation of the Performance of the New Dissemination Approach Relative to Approach used by the Formal Extension Service in Gununo Watershed

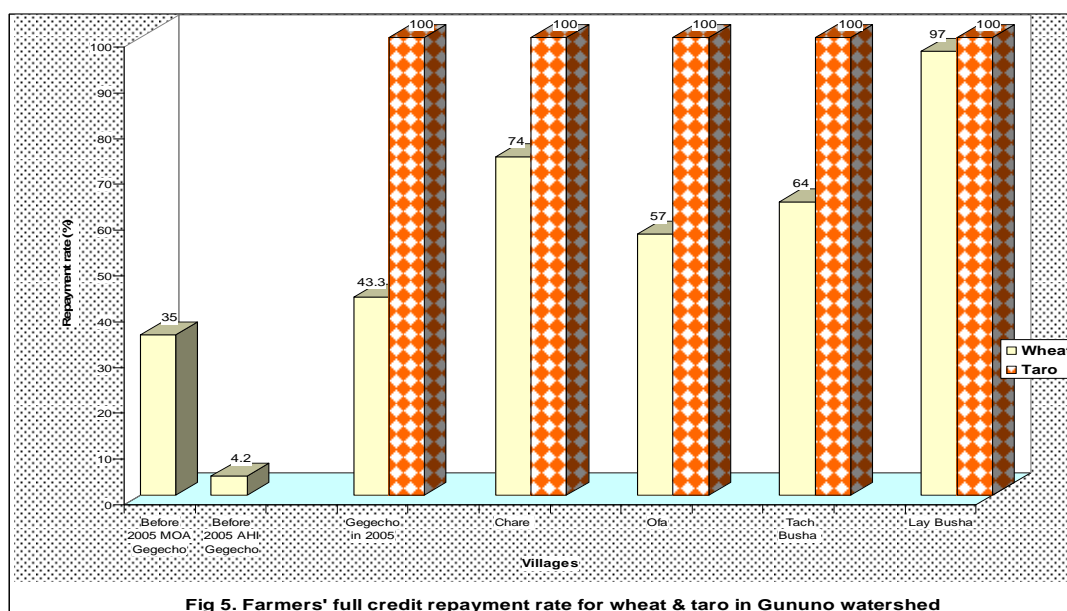
Indicator	Formal Extension Service						AHI / AARC Approach					
	V1 <sup>1</sup>	V2	V3	V4	V5	Ave.	V1	V2	V3	V4	V5	Ave.
Equitable access by women farmers	15	20	15	0	17	13.4	85	80	85	100	83	86.6
Equitable access by poor farmers	20	26	25	40	22	26.6	80	74	75	60	78	73.4
Form of credit	0	26	34	20	8	17.6	100	74	66	80	92	82.4
Awareness of technology prior to wider dissemination	20	0	0	20	32	14.4	80	100	100	80	68	85.6
Quality & frequency of technical support	10	26	25	20	37	23.6	90	74	75	80	63	76.4

<sup>1</sup> Villages (V1=Chare, V2=Ofa, V3= Laybusha, V4=Gegecho, V4= Tachbusha).

While it is also important to generate information through formal impact assessment, lack of a baseline on technology access by gender and wealth made an empirical assessment of equity difficult.

### Repayment Rates

In addition to indicators of importance to farmers, any credit system – whether formal or informal – relies on other indicators for their viability. Therefore, the team looked beyond local indicators in assessing performance of the new approach. Low rates of loan repayment in the past had led to increasingly strict rules of access, and contributed to observed gender and wealth biases through assumptions that certain groups are unable to repay loans. The new approach also sought to address these shortcomings through in-kind loans, farmer-to-farmer sharing and by-laws to govern repayment. Results suggest that the new system is highly effective relative to the approach used by the formal extension service as well as earlier approaches tested by the AHI site team (Figure IIa).



**Figure IIa.** Rates of Repayment for Wheat and Taro Relative to the System Used by the Ministry of Agriculture and Earlier Credit Systems Tested by the AHI-Areka Site Team

### LESSONS LEARNT

The following lessons may be distilled from this case study:

- Negotiation support among previously advantaged and disadvantaged groups to develop rules for enhanced equity, followed by formal by-law endorsement and participatory monitoring, can go a long way in enhancing equitable access and revitalizing credit systems among poor communities.
- Farmers tend to respect their social by-laws more than government rules in credit repayment for improved seed, suggesting that locally negotiated by-laws have great promise in strengthening equitable development processes.
- Informal social pressure to encourage loan repayment is more effective than accusation by the Peasant Association Court. More farmers who did not pay their credit in time repaid following informal pressure than formal accusation.

- The behaviour of individual FRG leaders played a big role in repayment of in-kind loans, suggesting that FRG leadership selection process needs to be researched in greater detail.
- Credit repayment rates are higher when high yielding and preferred crop varieties are provided, perhaps due to greater demand by farmers waiting to receive these varieties.
- Most farmers who failed to repay in-kind loans regretted their actions after being prohibited to take new seeds. While this is harsh punishment for the offenders, it will go a long way in strengthening technology access in the future through high rates of repayment and farmer-to-farmer spread of technologies.

**EMPOWERING COMMUNITIES TO REGENERATE**

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