FARMER PARTICIPATORY RESEARCH AND EXTENSION GUIDELINE

Produced as a component of the project INSTITUTIONALISATION OF FARMER PARTICIPATORY RESEARCH IN THE SOUTHERN NATIONS, NATIONALITIES AND PEOPLE'S REGIONAL STATE OF ETHIOPIA

Editors
Ejigu Jonfa and Barry Pound

Institute for Sustainable Development
FARM Africa
Addis Ababa, Ethiopia
September 2002
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Addis Ababa, Ethiopia
September 2002
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**ACRONYMS**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACA</td>
<td>Awasa College of Agriculture</td>
</tr>
<tr>
<td>AEZ</td>
<td>agro-ecological zone</td>
</tr>
<tr>
<td>AHI</td>
<td>African Highland Initiative</td>
</tr>
<tr>
<td>AKIS</td>
<td>Agricultural Knowledge and Information System</td>
</tr>
<tr>
<td>ARC</td>
<td>Awasa/Areka/Agricultural Research Centre</td>
</tr>
<tr>
<td>asl</td>
<td>above sea level</td>
</tr>
<tr>
<td>AUA</td>
<td>Alemaya University of Agriculture</td>
</tr>
<tr>
<td>BoA</td>
<td>Bureau of Agriculture</td>
</tr>
<tr>
<td>BoANR</td>
<td>Bureau of Agriculture and Natural Resources</td>
</tr>
<tr>
<td>BoPED</td>
<td>Bureau of Planning and Economic Development</td>
</tr>
<tr>
<td>CDR</td>
<td>Complex, Diverse and Risk-Prone</td>
</tr>
<tr>
<td>CIAT</td>
<td>International Centre for Tropical in Colombia</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>Diagnosis and Characterization</td>
</tr>
<tr>
<td>DA</td>
<td>Development Agent</td>
</tr>
<tr>
<td>E.C.</td>
<td>Ethiopian calendar (7-8 years behind the Gregorian calendar)</td>
</tr>
<tr>
<td>EARO</td>
<td>Ethiopian Agricultural Research Organisation</td>
</tr>
<tr>
<td>FARM</td>
<td>Food and Agriculture Research Management</td>
</tr>
<tr>
<td>FFS</td>
<td>farmers’ field school</td>
</tr>
<tr>
<td>FPR</td>
<td>Farmer Participatory Research</td>
</tr>
<tr>
<td>FPR/E</td>
<td>Farmer Participatory Research and Extension</td>
</tr>
<tr>
<td>FRG</td>
<td>Farmers research groups</td>
</tr>
<tr>
<td>FSR</td>
<td>Farming systems research</td>
</tr>
<tr>
<td>GO</td>
<td>government organisation</td>
</tr>
<tr>
<td>GOPP</td>
<td>goal-oriented project planning</td>
</tr>
<tr>
<td>HH</td>
<td>household</td>
</tr>
<tr>
<td>IAR</td>
<td>Institute of Agricultural Research</td>
</tr>
<tr>
<td>IARCs</td>
<td>International Agricultural Research Centres</td>
</tr>
<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
</tr>
<tr>
<td>ISWC II</td>
<td>Indigenous Soil and Water Conservation, Phase II</td>
</tr>
<tr>
<td>ITK</td>
<td>indigenous technical knowledge</td>
</tr>
<tr>
<td>JV</td>
<td>Joint Vertisol</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
</tbody>
</table>
NARS – National Agricultural Research Systems
NGO – Non-governmental organisation
PA – Peasant Association
PADETs – Participatory Demonstration & Trans Systems
PAPP – Planning based on Analysis of Problems and Potentials
PFI – Promoting Farmer Innovators
PLA – Participatory Learning and Action
PM&E – Participatory Monitoring and Evaluation
POFR – Participatory On-Farm Research
POFT – Participatory On-Farm Trials
PRA – participatory rural appraisal
PRGA – Participatory Research and Gender Analysis
PRIAM – Participatory Research for Improved Agro-ecosystem Management
PTD – Participatory Technology Development
RCBD – randomised complete block design
RPK – Rural people’s knowledge
SC/UK Save the Children – United Kingdom
SMS – Subject Matter Specialist
SNNPR – Southern Nations, Nationalities and Peoples Region
SNNPRS – Southern Nations, Nationalities and Peoples Regional State
SSI – semi-structured interview
UNECA – United Nations Economic Commission for Africa
V.I.P. – very important person
WADU – Wollaita Agricultural Development Unit
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Farmers Research Project,
FARM Africa
CHAPTER 1
BACKGROUND

1.1 THE PROJECT

This guideline has been prepared as part of the project 'Institutionalization of Farmer's Participatory Research in the Southern Nations, Nationalities and Peoples Regional State'. It also draws on the experience of the Farmers' Research Project in North Omo, Derashe and Konso Special woredas from 1991–1999. The current project was proposed jointly with the Bureau of Agriculture of the Southern Nations, Nationalities and Peoples Region (SNNPR), Awasa and Areka Agricultural Research Centers, Awasa Agricultural College, the Bureau of Planning and Economic Development of SNNPR and FARM-Africa, which secured about 12.5 million birr from the European Commission for the period July 1999 to September 2002. The project is managed by the UK-based NGO, FARM-Africa.

The goal of the project is to contribute to improved food security in the Region. The immediate purpose is to institutionalize the tools and approaches for farmer's participatory research into the regular activities of the organizations involved in the generation and transfer of agricultural technology in the SNNPR. This Guideline will contribute to that purpose.

1.2 WHY THIS GUIDELINE?

Considerable experience has been gained by Non-Governmental and Governmental institutions over recent years in the implementation of Farmers' Participatory Research and Extension (FPR/E) in the conditions of Ethiopia. The purpose of this Guideline is to make that experience available to all those who wish to incorporate the approach into their routine activities.

The aim of this Guideline is to create, maintain and spread a common understanding about FPR/E among the different organizations involved in the generation and spread of technology relevant to smallholder farmers in Ethiopia. The Guideline can also be used to facilitate implementation of FPR/E, and as a practical field guide.

However, it should always be noted that FPR/E is an approach, not a prescription. If it is considered as a prescription, there will be a danger of limiting local initiative and creativity. It has to be flexible in order to give room for new ideas and methods of working to be initiated locally and applied to local circumstances.

1.3 FOR WHOM IS THIS GUIDELINE PREPARED?

The primary beneficiaries of this guideline are front-line extension workers, who have direct and frequent contact with farmers. These include:

- BoA extension staff (e.g. Subject Matter Specialists – SMSs, and Development Agents – DAs)
- Training staff from training centres and higher education establishments
NGO field staff
Research staff engaged in applied and adaptive research, especially with farmers.

Nevertheless, its use will not be restricted to front-line extension and research workers, but will also be useful for those involved with managing and supervising research, extension and development projects and programs in governmental and non-governmental organizations.

Although the Guideline has not been prepared to be used by farmers, there will be an indirect benefit to them through increased contact with front-line extension and research workers who have been trained in FPR approaches.

1.4 How to Use the Guideline?

This document is a guide to the FPR/E approach. It is not a set of instructions on how to carry out FPR. Therefore, it should be seen as a set of principles and best practices earned from field experiences, on which practitioners and program managers can draw for the planning and implementation of their activities. The local conditions of farmers, and local institutional resources differ from place to place, requiring local adaptation, initiatives and creativity in the way in which the approach and its tools and methods are applied.

The Guideline can also be used as an aide to training by SMSs and training institutions, and as a field guide or reference source for front-line research and extension workers.

1.5 How Was it Prepared?

The Guideline was produced by a core team drawn from the project's stakeholder institutions, who are also members of the project's Technical Team. A meeting was held in July 2000 to:

- Determine the demand for the Guideline
- Outline the structure and content of the publication.
- Develop an action plan for preparing the document through to publication.
- Assign responsibility to the project Technical Team, chaired by Ejigu Jonfa, to co-ordinate the overall process of its preparation.

Thirty participants took part in this meeting. These were drawn from FPR stakeholder institutions in the Southern Region, from projects and institutions elsewhere in the country, and from farmers experienced in the implementation of FPR. The meeting was held at a time when FPR was being implemented by a number of projects and programs across Ethiopia. There is now an increasingly sympathetic policy environment for participatory activities in the country. The meeting agreed that authorship of drafts would be by members of the Technical Team and/or by expertise identified by this team from EARO/ARC, ACA, AUA, BoA, FARM-Africa and other organizations.

An important decision taken by the meeting was to make Farmer Participatory Research and Extension the subject of the Guidelines. These Guidelines therefore cover the identification and dissemination of appropriate technologies with and by farmers.
CHAPTER 2
INTRODUCTION TO FPR/E

Research can be defined as systematic investigation in order to discover or validate new facts or information. There are many classifications of types of research activity, and various attempts have been made to identify steps or stages in the research and development process. For the purpose of this approach a general framework that accommodates a wide range of types of institutional involvement in agricultural research is needed. According to Okali (1994) research, whether formal or informal and involving scientists or farmers, will be considered to be a deliberate and systematic process that proceeds through three stages, A-C in the box below:

THE STAGES OF FPR/E

A/ Identification of opportunities (perhaps more commonly referred to as problems or constraints),
B/ Identification of ideas or options, and,
C/ Testing and/or adaptation of the ideas and options.

To these research stages, we also need to add the extension stages:

D/ Dissemination of those options that have been shown to be most appropriate in farmer’s situations
E/ Adoption and adaptation by farmers

FPR/E is a continuous and dynamic process. We therefore need an additional stage, as follows:

F/ Reflection and feedback into the research process, and the identification of new opportunities for improvement.

2.1 Definition and Characteristics of Farmers’ Participatory Research and Extension (FPR/E)

2.1.1 Definition

FPR/E has been described in different ways. These include explanations based on the mode of participation and the steps to be followed in the research and dissemination process. However, most descriptions focus on the roles played by the actors in the research process.

A useful definition of FPR is: ‘A research approach that involves farmers at all levels, including decision making’ (Sandford & Reece, 1992).

FPR/E considers the whole process from diagnosis of constraints and opportunities through to dissemination and use of research outcomes (Figure 1). Hence farmers’ involvement in all stages and their decisions are in the process indicated below.
2.1.2 Characteristics of FPR/E

The following are some key characteristics of FPR/E (Pound et al., 1998).

- The research is conducted mainly on-farm.
- Research is a joint activity between research, extension and farmers.
- It unites farmers’ and scientists’ knowledge.
- It values local knowledge.
- Priority is given to farmers’ evaluation criteria (men and women).
- Research is gender sensitive, since gender is a valuable concept that helps us to identify social structures, and those beliefs that maintain the unequal positions of women and men.
- FPR/E recognizes the varying agendas of different stakeholders, and the problems of bias (e.g., age, gender, wealth, and ethnicity). FPR/E ensures that all sections of the community are heard.
- Ownership of the research process is shared among farmers, field workers and researchers.
- FPR/E involves the farmers in decisions throughout the research and extension cycle.
- There is shared learning between farmers, field workers and researchers.
- FPR/E is a continuous overlapping process of technology generation, technology dissemination, monitoring, reflection, and adaptation.
FPR/E often emphasizes the collection and evaluation of qualitative as well as quantitative information, using triangulation for cross-checking.

It uses research methods (surveys, trial designs, and analysis) that are different from those used on experiment stations or in formal research.

FPR/E links with conventional research and extension methods, and is but one component in the overall research and development system of a village, region or country.

As a result of FPR/E, local capacity is developed to initiate and implement actions relevant to local priorities.

Research and development is a dynamic and flexible process recognizing that circumstances and needs of farming families are constantly changing.

2.2 Historical Development of Different Research Approaches

2.2.1 Conventional Research

Conventional research is a top-down approach in which techniques introduced to improve farming are based on experiments carried out under the controlled conditions of experimental stations, and passed on to farmers through the extension services. This approach is mostly one way with little feedback. Adoption rates are often disappointing, as the preferences, conditions and resources of smallholder farmers are not fully considered when planning the experiments or evaluating the options.

Conventional research is usually discipline or commodity based. It does not take into account the interactions among components of the farming system, or the socio-economic factors that influence farmers' decisions. These limitations have led to the development of farming systems research.

2.2.2 Farming Systems Research (FSR)

Farming systems research attempts to understand the complexity of specific ecological situations, and the responses of farmers to these, in order to develop technologies that are appropriate to the system, rather than improving its components in isolation from the system as in the case of conventional research. It is therefore a site-specific, target group-oriented research approach, which consults farmers, but does not necessarily involve them actively in all stages of the research process.

A DEFINITION OF FARMING SYSTEM RESEARCH:

Farming Systems Research explores and takes account of the complex, inter-related matrix of soils, climate, plants, animals, power, labor, capital and other inputs controlled, in part, by political, economic, institutional and social factors that operate at many levels, in order to produce outputs that are relevant to the circumstances of farming households.

Gibbon 19**

The lessons from the farming systems research approach, and the increasing concern for active participation of farmers in research has led to the development of farmer participatory research.
2.2.3 Farmer Participatory Research (FPR)

FPR evolved by the mid-1980s. FSR had stimulated new holistic approaches to understanding farming situations and farm decision-making through direct contact with farmers, but had not led to the development of interventions that achieved major impacts on resource-poor farming families. The following main points led from FSR to the development of participatory methods:

- Contacts between researchers and farmers led to recognition of the value of local knowledge (ITK) especially in Complex, Diverse and Risk-Prone (CDR) conditions;
- A search for approaches and methodologies to facilitate involvement of farmers and to explore their knowledge and judgment;
- A recognition that farmers' ownership of research can lead to more rapid adoption and sustainability;
- An interest in the contribution of participatory approaches to empowering individuals and communities to take charge of their own livelihoods.

Some benefits of FPR/E

- Provides technologies relevant to the needs of resource-poor farmers in complex, diverse and risk-prone situations.
- Allows the generation and/or validation and dissemination of technologies under local conditions.
- Provides an opportunity for accepting or rejecting technologies at an early stage, and at the same time allows the early adoption of promising technologies.
- Gives information on the characteristics of a technology that farmers consider important. This information can feed back into, and improve the relevance of, conventional research.

The contribution of farmers in the FPR/E process

Farmers play a vital role in the FPR/E process. The following are the main contributions of farmers in the FPR/E process:

- Technology selection criteria
- Local knowledge
- Real conditions (physical and socio-economic)
- Land and labour
- Involvement or leadership in decision-making at all stages of the research and dissemination cycle
- Communication with neighbours and visitors to speed up dissemination
### WHO, WHERE AND WHEN?

**WHO PARTICIPATES?**
- Men and women farmers,
- Natural resource users and processors,
- Their families,
- The community,
- Extension workers,
- Researchers.

**WHERE?**
- On farmer fields,
- At the experiment station,
- In workshops,
- In field days,
- In training courses.

**WHEN?**
- At all stages of the research process.

---

**Outputs of FPR/E**

The following major outputs are indicated in the FPR/E process.

- Preferences that farmers have for one technology compared to others, and the reasons for those preferences.
- Increased capacity to carry out their own research and apply the selected technologies arising from research to their own circumstances.
- Increased understanding by farmers of the principles behind the technology, allowing them to adapt it to new situations and advise others on its application.

**2.3 FPR/E Process**

Researchers, farmers and extension workers, as well as input suppliers and market traders, are the key actors in the process of FPR/E. Hence the process of FPR/E demands their close interaction and relationship.

As can be seen from Figure 2, the FPR/E process involves various steps. The participation of the key actors, their roles and their involvement in decisions made at each step demonstrates the extent and quality of participation in the process.
Figure 2. The Farmer Participatory Research and Extension cycle

Diagnostic Study → Identification of priority community problems → Formation of Farmer Research Group → Focused exploration of problems using farming systems and social analyses

Participatory M&E of the research and uptake process and outputs at PA, woreda and regional level

Adoption/Adaptation

Ensuring access to inputs (credit, materials, advice etc.) → Dissemination to different users:
- within community
- to other communities
- to stakeholder institutions
- to national and international audiences
- incorporation into databases, dissemination materials, PADETES and on-station research agenda

Participatory evaluation of POFR → Implementation of Participatory On-Farm Research (POFR)

Participatory monitoring of POFR

Participatory planning of the research programme:
- Information exchange between farmers, researchers and extensions on possible ways of addressing priority problems: technical, social, institutional, economic, political
- Selection of appropriate options
- Selection of participants and sites
- Design of research intervention and uptake contingencies
- Definition of role and responsibilities
- Writing and approval of research proposal
- Entry into database
2.4 EXPERIENCE TO DATE WITH FPR/E IN OTHER COUNTRIES

FPR/E is being widely implemented throughout the developing world by different organizations including national, regional and international research and teaching institutions, as well as governmental and non-governmental organizations involved in development.

2.5 STATUS OF FPR/E IN ETHIOPIA

2.5.1 Farmer's Research Project, FARM Africa, Ethiopia

FARM Africa's participatory research project in North Omo Zone, Konso and Derashe special woredas was initiated in February 1991. The aim of the Farmers Research Project (FRP) was to enhance the capacity of farmers, government organizations (GOs) and Non-Government Organizations (NGOs) in North Omo region to carry out participatory agricultural research. The project also gave emphasis to closing the gap between formal research, farmers and NGOs in order to increase the ability of NGOs with agricultural development programs to make a more effective contribution to community-resourced, farmer-operated research.

FARM Africa started collaborative activities initially with NGOs and later with the Bureau of Agriculture (BOA), the Awasa Research Center (ARC) and the Awasa College of Agriculture (ACA), from 1994 to 1996. The activities of the project included:

# Raising awareness of FPR
Building technical capacity for FPR through training
Improving linkage among the key GOs
Incorporation of FPR in the activities of target institutions

The impact assessment workshop held in Awasa in March 1998 reviewed the experience of FPR in the project areas and suggested that FPR be implemented in the whole Southern Region. The resultant project also included the Bureau of Planning and Economic Development (BoPED). Currently, Farmer Participatory Research is being implemented in 14 woredas of the Southern Nations, Nationalities and People's Regional State (SNNPRS). Training on the concepts and principles of FPR is given to various researchers, extension workers, farmers, and lecturers. Workshops and seminars have been prepared for policy and decision-makers to raise their awareness on the concepts and philosophy of FPR (and more recently FPR/E).

2.5.2 The Ethiopian Agricultural Research Organization (EARO)

EARO is undertaking diagnostic surveys using PRA tools and methodologies to identify and prioritize major bottlenecks to agricultural production and productivity in the different agro-ecological zones (AEZ) of the country. Farmers are playing a vital role in this process. EARO has used the results of the survey to prepare the research strategy document for its short-, medium- and long-term plan. The introduction of FSR into the IAR (now EARO) was made based on the need for more farmer involvement in the research. In recent years, FPR activities have been conducted by some of the research centres: Melkasa, Debrezeit and Awasa. EARO’s joint effort with CIAT and the African Highlands Initiatives is also notable.

2.5.3. The African Highland Initiative (AHI)

The African Highland Initiative (AHI) was established in response to the major concern of National Agricultural Research Systems (NARS) and the International Agricultural Research Centres (IARCs) to undertake a range of research activities in the relatively high potential, and densely populated highlands of Africa. Using PRA tools, AHI has undertaken diagnostic surveys in the Areka and Ginchi benchmark areas. AHI also used FPR methods for Diagnosis and Characterization (C&D), and maintenance and improvement of soil fertility, a study on local seed systems, a study into the economics of decentralized seed multiplication, etc.

2.5.4 SC/UK: Farmers' Field Schools

In Wollo, northern Ethiopia, SC/UK (Save the Children, UK) is involved in farmer participatory research in an Integrated Pest Management (IPM) programme. SC/UK piloted a farmer participatory research (FPR) approach in IPM in the 1998 crop season in order to encourage IPM at community level. The FFS places emphasis on facilitating knowledge sharing processes, continuous observation and feedback from local environments, enhancing local decision making capacity and group learning to cement local linkages and understandings.
Box 1: Farmers' Field School (FFS)

The IPM Farmers' Field School (FFS) is basically a 'school without walls' situated in the field where farmers learn basic agro-ecology and acquire management skills to be able to grow healthy crops, conserve natural enemies, and understand the principle of regular field observation. In the end, farmers become experts in their own fields, able to share their experiences with other farmers.

2.5.5 Mekelle University: Indigenous Soil and Water Conservation

Indigenous Soil and Water Conservation, Phase II (ISWC II), and Promoting Farmer Innovators (PFI) are Participatory Technology Development (PTD) interventions being carried out in several African countries (Burkina Faso, Cameroon, Ethiopia, Tanzania, Tunisia, Uganda, Zimbabwe). In Ethiopia, these activities are being implemented by Mekelle University, working in Tigray Regional State, northern Ethiopia.

The project recognizes that researchers and development agents are an important source of new ideas that are critical to land husbandry. It also believes that the farmers are very resourceful and innovative in generating and adapting new ideas and practices that substantially contribute to improved land husbandry in a more sustainable way. This is the underlying premise for ISWC II in Ethiopia.

The project is working towards promoting a new form of collaboration among researchers, development agents and farmers. In this collaboration, researchers accept farmers as partners in research, not as passive receivers of ideas who merely adopt blanket recommendations, but as innovators and experimenters in their own right. Farmers constantly make improvements and adaptations to their farming operations. Researchers and development agents are encouraged to join farmers in their informal experimentation. ISWC II Ethiopia works towards identifying farmer innovators and establishing partnership between innovative farmers, researchers and development agents.

ISWC and PFI in Ethiopia

In the semi-arid highlands of Tigray in northern Ethiopia, generations of farmers have developed land husbandry systems that have allowed them to live under harsh conditions. The farmers continue to innovate and refine their practices. This local innovation can be a source of inspiration for more widespread development in the highlands of Ethiopia.

Mekelle University, in collaboration with the Bureau of Agriculture and Natural Resources (BoANR) and various other governmental and non-governmental organizations in Tigray, has set out to discover farmer innovators and innovations in land husbandry.

The aim is to promote existing processes of change by recognizing local initiatives, linking innovative farmers with each other and with formal research and extension, validating and disseminating successful technologies, and supporting farmers and rural communities in their own experimentation.
2.5.6 Alemaya Agricultural University (AUA)

Farmer participatory research and extension activities at Alemaya Agricultural University are related partly to the Participatory Research for Improved Agroecosystem Management (PRIAM) project of CIAT. Based on these experiences, participatory research and extension courses have been incorporated into the curriculum of the University. In addition, research studies, as part of the academic courses, are undertaken by the students and their instructors.
CHAPTER 3
KEY CONCEPTS AND PRINCIPLES OF FPR/E

3.1 What is meant by 'participation'?

In the past few decades, participatory interventions have become a popular means of bringing about social and technical change across the globe. Whether in research, development or policy analysis, participation is presented as the golden key to unlock the door to a more sustainable and democratic world (Annemarie Groot and Marleen Maavleveld, 2000).

Participation is an essential part of human growth contributing to the development of self-confidence, pride, initiative, creativity, responsibility, and cooperation.

Oakley and Marsden (1984) define participation as an end in itself, i.e. by establishing a process of genuine participation, development will occur as a direct result. According to them, the major effort should be concentrated on the empowering process. Thus, the first step in achieving genuine participation is a process in which the rural poor themselves become more aware of their own situation, of the socio-economic reality around them, of their real problems, the causes of these problems, and what measures they themselves can take to begin changing their situation.

Participation is essentially a 'learning by doing' process i.e., where there is genuine participation progress will be made by learning what works and what holds back change, what brings more people into the process and what keeps the majority away. Mistakes will be made; there can also be failures but overall there will be progress — a few steps forward, a step or two back, and then forward again.

3.1.1 Joining the knowledge systems of farmers, researchers and extensionists

A broader view of knowledge, its generation, transmission and application, suggests a range of issues of importance for agricultural research and extension.

We view 'knowledge' as a social process and 'knowledge systems' in terms of a the sharing of information and experience among a multiplicity of actors through networks where certain kinds of information are communicated and negotiated. Knowledge is not a single, cohesive structure, stock or store — that is data and information. In a rural farming system, there are two areas of knowledge: that of the 'insider group' — the farmers, and that of the 'outsider group' (extensionists, researchers, etc.).

Rural people's knowledge (RPK) is often characterized as highly specific and particular, with knowledge emerging from their localized, practical experience. This characterization is contrasted with agricultural science, which is seen as theoretically-based, providing objective, generalisable, prepositional knowledge.

The long-running philosophical bias in favour of theoretical knowledge over practical knowledge, has given agricultural science supposedly 'superior' qualities (Hacking 1983). This characterization has resulted in the domination
of science over rural people's knowledge (Margin, 1990). However, both RPK and agricultural science proceed with context specific, normative, experiential and theoretical knowledge's, reinforced by continuous interactions between theory and practice (Hacking, 1983).

Integrating people's knowledge with formal science has to begin with dialogue. This leads to confidence building amongst the actors so that extension workers, researchers and farmers see themselves as equally valued partners; jointly responsible for a common process and product. From this perspective, farms are viewed as *learning systems*, where knowledge is generated and transformed and where actors interact as collegiate partners. The knowledge so generated then becomes joint property because of the shared responsibility for its production.

This approach aims to change the roles of and relationships among researchers, extension workers and farmers away from the conventional teacher-pupil relationship, and towards a process of collaboration based on mutual learning as colleagues with different contributions to make (Chambers, 1993).

Huizer (1984) suggests that there is the need for building an awareness of one's own limitations and of our relative ignorance of local problems compared with the knowledge of farmers. Having accepted this relative ignorance, the researcher/extensionist must try to learn from both women and men farmers through empathy and friendship to get a better understanding of what their problems, needs and feelings are. Thus in order to achieve good results from participatory research, a special relationship of confidence, trust and mutual respect must be developed between farmers and researchers. This is based on the understanding that researchers, extension workers and farmers are each experts in their respective fields of experience and knowledge.

### 3.2. Principles of FPR/E

#### 3.2.1 Being context specific

Farmer Participatory Research (FPR) developed in the 1980s with the aim of involving farmers more closely in on-farm research. This moved beyond the approach of farming systems research and extension (FSR/E) in which farmers were contracted or consulted in the taking of research results from research stations to the farmers' fields. FPR views the context of agricultural production as a series of interactions between on and off-farm resource management strategies. Figure 4 shows some of the interactions among components of the on-farm system (household, crops, livestock, fisheries, forestry), and with off-farm components.
Recognition of what has come to be termed 'indigenous technical knowledge' (ITK) has led to a focus on the farmer as innovator and as experimenter, and more interest in 'collaborative' and 'collegiate' relations between researchers and farmers, as depicted in the Table and graph below (Biggs, 1980; Richards, 1985; Farrington, 1988; Farrington and Martin, 1988; Amanor, 1990; Hiemstra et al., 1992).

<table>
<thead>
<tr>
<th>Mode of participation</th>
<th>Type of relationship</th>
<th>Mode of participation</th>
<th>Type of relationship</th>
<th>Mode of participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract</td>
<td>Farmers, land and services are hired or borrowed, e.g., the researcher contracts the farmer to provide specific types of land</td>
<td>Consultative</td>
<td>There is a ‘doctor-patient’ relationship. Researchers consult farmers, diagnose their problems and try to find solutions</td>
<td>Collaborative</td>
</tr>
</tbody>
</table>

Source: Biggs (1989)
Here the aim is to change the roles of and relationships among researchers, extensionists and farmers to build a process of collaboration based on mutual learning as colleagues with different contributions to make.

3.2.2 The importance of flexibility

Farming is not a matter of doing everything ‘correctly’ according to prescribed pattern, or optimising the performance of single components; it is making the totality run in a satisfactory way (Mitsch, 1991). The art of farming (farmers’ research) is thus to understand the changing situation, and act accordingly. This pattern of continuous observation and adjustment of farming performance is central to experimentation by farmers.

Facilitators often use basic principles in participatory planning, but have found that blueprint prescriptions have had limited application or are inappropriate. In FPR, farmers are instead encouraged to adapt and innovate, adjusting approaches to local conditions and interests, so that they will develop an understanding and ‘ownership’ of the methods they develop, and will continue to use them.

3.2.3 Multiple actors

Development for smallholder farmers is extremely complex and involves a great deal more than just technical issues. Thus, there is no single discipline or approach that can adequately address the range of biological, cultural and socio-economic processes that surround development of smallholder farmers. However, with the active involvement of all stakeholders, it is possible to get a sufficiently accurate and holistic picture of the farmers’ circumstances to come up with realistic technologies.

3.2.4 Respecting farmers

We should have respect and, whenever possible, follow the customs and behaviour patterns of the farmers with whom we are working. We should
believe in the potential power and age-old wisdom of the farmers. A faith in farmers should be our guiding force.

If an outsider tries to initiate a project on a participatory basis, he or she has to acknowledge that it is not his or her project. He or she is only a companion trying to help establish a grassroots group, and must avoid developing a paternalistic relationship towards the farmers.

It is important to talk along with, not down to, the farmer and express willingness to learn from the farmer. He/she can give you very important insights and information. It is important to maintain flexibility in dealing with farmers and have a sense of humour at all times.

3.2.5 Empowerment

The basic processes which farmers go through during participatory technology development are designed, not just to develop technology, but also to empower the farmers. Having been empowered, farmers feel free to engage themselves in various project activities and are capable of solving their own problems. Empowerment helps farmers to develop a sense of autonomy and independence, and they are then able to view the success or failure of a given project activity as their responsibility, rather than the responsibility of external experts.

Empowerment can be understood as the gaining of confidence and developing the capacity of individuals and communities to take charge of their own development. In order to build this confidence, a number of areas must be addressed; for example, institutional development, development of community capacity, and the acquisition of technical, organizational, leadership and management skills.

3.2.6 Needs based change

Needs are decisive in directing behavioural change. The indication is that change without finding a link-up with needs is hardly possible. But whose needs are we talking about? The felt or unfelt needs?

The concept of felt and unfelt needs refers to the needs as perceived by the community or client, and by the change agent respectively.

Not all organizations and role players have the same intentions and approaches in rural or agricultural development. They vary from a passive ‘helping people to realize their needs’ at the one end of the scale, to a ‘promotion of externally determined needs’ (irrespective of what the needs of the communities are) at the other end of the scale.

One of the most important and difficult roles for the change agent is diagnosing her/his clients' needs. Diffusion campaigns often fail because change agents are more innovation-minded than they are client-oriented. They ‘scratch where their clients do not itch’. Therefore, whenever needs are incorrectly or unreliably identified, the development inputs are likely to be ineffective and largely wasted.

3.2.7 Complementarities with other types of research and extension

Proponents of a farmer-first approach argue that greater attention needs to be paid to on-farm conditions and that farmers need to play a more active role in
agricultural experimentation. They claim that greater participation of farmers in on-farm, adaptive research will result in a technology development process more attuned to local conditions and local priorities.

Here the intention is, instead of starting with the knowledge, problems, analysis and priorities of scientists, to start with the knowledge, problems, analysis and priorities of farmers and farm families. Instead of the research station as the main locus of action, it is now the farm. Instead of the scientist as the central experimenter, it is now the farmer (Chambers et al; 1989).

However, Paul Richards (1985) stresses the need for 'active complementarity' to be achieved between informal and formal research and development sectors. The principle of 'complementary' is important since the transfer-of-technology approach, including commodity research, on-station and in-laboratory basic investigations, and so on, will always be needed (Chambers et al; 1989).

Therefore, an attempt to introduce decentralized, 'bottom-up' approaches must be complemented by strong 'top-down' commitment and a very clear, shared view of the mission of the organization. To secure this goal, the first condition is to establish a climate of confidence between farmer experimenters and professionals and make it possible for farmers to speak for themselves.

3.2.8 Sustainability

Sustainability refers to the situation where the productivity of the system is maintained indefinitely without irreversible negative changes.

In natural resource terms, we talk of using natural resources (soil, water, air etc.) in such a way that we leave the resource intact, and in good health for future generations.

Chambers (1987) argues forcefully that rural development should concentrate on securing sustainable livelihoods for the resource poor. This means ensuring economic sustainability at the household level. If livelihood security is improved then rural people are more likely to take a long-term view.

The attention given to the sustainability of processes and the development of sustainable local institutions simply reflects the nature of the frameworks within which most projects take place. One strategy to secure sustainability is to seek to minimize dependence on the project. Thus, it is suggested that the last step in the project process, and the key to sustainability, is to demonstrate to 'communities' how to manage 'the project' themselves and even apply for further funding themselves independently.

In accordance with this, the purpose of FPR is to establish sustainable systems for developing appropriate agricultural technology through participatory on-farm trials involving farmers in research work. This is believed to lead to the ultimate goal of improving the livelihoods of resource-poor farming households.

3.2.9 Heterogeneity of farmers and their circumstances

Farming populations are essentially heterogeneous in terms of the strategies they adopt for solving problems. Varying ecological, demographic, market, political, economic and socio-cultural conditions combine to generate different patterns of farm enterprise, leading to difference in farm management styles,
cropping patterns and levels of production. Implicit in this process, of course, is the differential use and transformation of knowledge: that is, agricultural knowledge varies and is accorded different social meanings depending on how it is applied in the running of farms. This is readily seen in the use of different technologies, but is also evident in the specific meanings that a particular technology or factor of production acquires (Vender Ploeg, 1986).

Thus gender, age, kinship, ethnicity, economic circumstances and socio-political status all affect the opportunities and activities of specific individuals. It is often advisable to acknowledge and include the various social groupings which people themselves recognize in the community; for example, women's groups, a smallholder farmer, a group of herders, etc in a given community.

Agricultural recommendations, thus, must be socially and culturally relevant. They cannot just be pulled 'off the shelf' and extended as if all farmers were the same as one another.

3.2.10 Group dynamics

It is difficult for the poor to break away from the vicious circle of dependence and poverty individually. It is only through collective effort and organization that they can reduce dependence and initiate a course of participatory, self-reliant development (Wignaraja, 1984). The most important instrument in the self-reliant participatory development process is a small group in which members have a common interest in working together to individually and collectively improves their lives.

Generally, it is now recognized that farmers' groups can be instrumental actors in most rural development ventures. Through groups, it is believed that farmers can be able to increase their political and economic power to influence policy decisions, and to propose plausible solutions to their problems. In addition, farmers' groups are seen as multipliers of innovations as they facilitate the diffusion process and allow more farmers to be reached.

Rwenyagira (1989) defines a group as a: 'collection of two or more farmers who are in close contact with one another and aware of each other's objectives, have common goals and therefore are consciously interacting to attain these goals.'

The first principle of group formation is that the poor must themselves be motivated to come together to work for their own common good. Many agencies organize people into groups in order to carry out activities which the agency has decided are for the good of the people. This will not lead to a viable people's organization.

Voluntary membership is the second key principle of group formation. No one should be forced to join a group against their own wishes.

The third principle of group formation is that the members must share a common interest. This will normally be a result of the motivation of the individual members for coming together to form a group. The crucial factor for successful groups is that each member perceives some direct or indirect benefit. The concept of 'for the common good' is relevant only when the individual member sees himself/herself as part of that communality.
The other important principle of group formation is that the group must be autonomous: it must have total sovereignty in making decisions regarding the composition of the membership, the size of the group, objectives, bylaws, leaderships, finances and activities.

Thus successful groups are almost always those which have taken the time to discuss and decide upon their objectives and the rules and regulations, or bye-laws, by which the group will operate. Change agents should assist groups to identify those objectives which will contribute to the unity of the group and which are achievable in the foreseeable future.

Thus, if farmers have to play a significant role in the research process, they need to be facilitated to form research groups. The potential benefits of working with farmers organized in groups include:

- Strong farmer groups have better prospects than individuals of exerting pressure on research and extension institutions for the development of demand driven technologies.
- By working with groups, researchers can economize on the time and effort required to interact with farmers.
- Farmers research groups are useful to re-orient the research agenda and its operational culture of research and extension towards farmers' priority needs, and to share responsibilities with research and extension in problem identification, testing and dissemination of technologies.
- Groups contribute to a sustainable informal technology diffusion network to adjacent villages and among the wider farming community.
The Federal Government’s policy and strategy for economic development not only emphasizes the role of agriculture as the main engine for fuelling the national economy, but also focuses on raising agricultural production and productivity in smallholder farming communities through facilitating the supply of improved technologies and credits. There is clear commitment to the idea of grass-root participation in the planning and implementation of agricultural development projects, including, presumably, in the generation and transfer of technologies. Similarly, the Five Year Plan for Development, Peace and Democracy announced by the Regional Government of the Southern Region follows the lead of the Federal Government in focusing its agricultural development strategy on raising agricultural production through improving the conditions for smallholder, resource-poor farmers.

To facilitate the generation of improved appropriate agricultural technologies, the national agricultural research services (NARS) have been assigned to the regional administrations as autonomous regional institutes of agricultural research. The Ethiopian Agricultural Research Organization (EARO) is the federal organ that operates under a Board. It has no direct jurisdiction over the regional systems, but facilitates co-ordination among the different regional NARS, and has responsibility for directing overall policy.

The strategy being promoted by EARO for effective and efficient agricultural technology generation and transfer process is through the proper functioning of the Agricultural Knowledge and Information System (AKIS). AKIS for rural development links people and institutions to promote mutual learning and generate, share and utilize agricultural-related technology, knowledge and information. The system integrates farmers, agricultural educators, researchers and extensionists to harness knowledge and information from various sources for better farming and improved livelihoods.

The AKIS in general consists of:

- The Research sub-system (technology generation)
- The Extension sub-system (technology transfer)
- The Utilizer sub-system (technology utilization)
- The support system (technology generation, transfer and utilization)
- Technology multiplying institutions
- Agricultural marketing institutions
- Policy-making institutions/bodies
- Input-supplying institutions
- Rural institutions
- Infrastructure

Hence, it is the strengthening not only of each of the sub-systems alone, but also the linkages among the sub-systems in particular, and all the actors involved in
the process in general, that determines the effectiveness of agricultural technology generation and transfer process. Effective linkage strategies enable both research and extension to promptly respond to client priority needs and cope with routine challenges. This will eventually favour adoption of research recommendations by improving the availability, in terms of timeliness and relevance, of improved technologies and inputs, and also warrants the net return from large investment on both research and extension.

The national agricultural extension system has also been reorganized and made to operate in a two-tier system, with the actual planning, implementation and supervision of agricultural extension activities given to the regional Bureaus of Agriculture. The Agricultural Extension Department under the Federal Ministry of Agriculture is mainly responsible for general guidance and technical support for the regional agricultural offices.

The nation's economic policy, known as 'Agriculture Development-Led Industrialization' (ADLI) is the focal point of the agricultural sector strategy. The key elements and direction of this policy are:

- **Enhancement of the production and productivity of smallholder farmers.**
- **Assisting the development of the private sector / private commercial farms.**
- **Improving the infrastructure (irrigation, roads, market, agricultural inputs etc.) for effective agricultural development.**

The key issues that have been considered for drawing up the extension strategy include setting clear objectives, identifying target beneficiaries, defining extension content, analysing previous extension methods used as well as extension organizations and management in terms of resources and accountability as well as organizational structure and staffing. The new extension system, called 'Participatory Demonstration and Training System', has been introduced to bring this new approach into effect. Major features of the new extension system include:

- **Participatory demonstration and training**
- **Focus on package approach**
- **Focus on large-scale demonstration based on the cluster diffusion approach**
- **Maintaining strong research–extension linkages**
- **Encouraging farmers' participation**
- **Encouraging the provision of incentives**
- **Addressing the interests of different target groups**
- **Giving emphasis to extension organization based on functions**
- **Encouraging the use of different communication channels**
- **Working in close collaboration with government and non-governmental organizations engaged in agricultural development**

The main focus in demonstration is to work on a realistic plot size, ensuring the availability of agricultural inputs, provision of credit services for inputs and provision of training to undertake demonstrations.
CHAPTER 5
THE OVERALL PROCESS OF FPR/E

5.1 CURRENT EXPERIENCES

Seven Farmer Participatory Research (FPR) projects have been carried out in Ethiopia. Each of these have used a different combination of elements to interact and develop the dynamics needed for FPR – see Table 2. This shows that FPR/E is a dynamic and flexible process that does not have only one way of being implemented. However, the process involves a generalized sequence that is roughly common to all the different examples presented.

The seven projects are the Farmers Research Project of FARM-Africa, the Farmers Field School (FFS) of Save the Children Fund/UK, the PRIAEM of Melkassa Research Center, ISCW II/PFI of Mekelle University, the JV Project in Debrezeit, experiences from the African Highlands Initiative carried out in Awassa and Areka Research Centers, and adaptive on-farm trials of the Bureau of Agriculture. Representatives from all these projects met and reviewed their FPR experiences in the Second Farmer Participatory Research Forum hosted by FARM Africa in June 2000.

5.2 ELEMENTS OF FARMER PARTICIPATORY RESEARCH AND EXTENSION (FPR/E)

Twelve elements of the participatory research and extension process were identified during the Forum. These are presented below. However, it should be noted that neither the elements nor the sequence in which they are presented are strict rules to be followed by every organization. For each element of the process it is essential to identify its purpose, principles, expected outcome, the participants to be involved, the activities to be carried out, and the methods and tools to be employed. These are summarized in Table 3.

1) Sensitisation and planning workshop, to include the identification of clear objectives, target beneficiaries, institutional partners and the geographical area to be covered.
2) Training of participating staff in FPR/E approaches and tools.
3) Understanding the local situation through diagnostic surveys.
4) Participatory identification of problems, opportunities and potential solutions.
5) Participatory selection of participants and selection of sites for participatory research.
6) Participatory selection of treatments and design of trials using experimentation principles.
7) Implementation and participatory monitoring of trials and other interventions.
8) Participatory evaluation and analysis of the trials and other interventions.
9) Dissemination and uptake of results and experiences.
Table 2: Elements of the FPR/E process used by seven projects and programs in Ethiopia

<table>
<thead>
<tr>
<th>ELEMENTS</th>
<th>SCF (UK) (Farmer field schools)</th>
<th>FARM-Africa FRP</th>
<th>Melkassa R. Centre PRIAEM</th>
<th>Awassa &amp; Areka R. Centres</th>
<th>Adaptive On-farm trials BoA</th>
<th>Debre Zeit JV Project</th>
<th>Mekelle University ISWC II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (area/objectives)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sensitisation workshop</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Inventory of farmer innovations</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Collection of varieties</td>
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<tr>
<td>Baseline survey</td>
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<td>✓</td>
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<td>Diagnosis</td>
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<td>✓</td>
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<tr>
<td>Formation of multi-disciplinary teams</td>
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<td>Planning (approaches)</td>
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<td>Training of DAs and SMS</td>
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<tr>
<td>Village meetings</td>
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<td>Problem identification/prioritisation</td>
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<tr>
<td>Selection of participating farmers</td>
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<tr>
<td>Visits to innovators</td>
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<tr>
<td>Implementation of trials</td>
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<tr>
<td>Monitoring (PM&amp;E)</td>
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<tr>
<td>Evaluation (PM&amp;E)</td>
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<td>Validation</td>
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<tr>
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<tr>
<td>Training of farmers</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Review and reflection (PM&amp;E)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Materials multiplication (e.g. seed)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Demonstration</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Formation of FRGs</td>
<td>✓ (FFS)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Formation of task forces</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Feedback of FPR/E results into other components of the extension, research and input supply systems</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
10) Participatory review and reflection to identify improvements and technologies appropriate to specific situations.

11) Feedback to other components of the research, extension and input supply system.

12) Feedback to donors and policy makers.

Table 3 summarises the purpose, principles, expected outcome, participants to be involved, activities of each element, and the methods and tools to be employed in each element.

Table 3: The elements of FPR/E with their purpose, principles, expected outcomes, expected participants, activities, methods and tools

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>1A. SENSITISATION WORKSHOP AND IDENTIFICATION OF INSTITUTIONAL PARTNERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Clarify objectives&lt;br&gt;Clarify target beneficiaries and project partners&lt;br&gt;Make all partners aware of the proposed program&lt;br&gt;Prepare operational calendar for action&lt;br&gt;Identify stakeholders</td>
</tr>
<tr>
<td>Principles</td>
<td>The relevant institutions need to participate in every element of the process</td>
</tr>
<tr>
<td>Expected outcome</td>
<td>Awareness of the proposed program&lt;br&gt;A report on the findings of the workshop&lt;br&gt;Identified stakeholders</td>
</tr>
<tr>
<td>Participants</td>
<td>Relevant institutions&lt;br&gt;Farmers (female and male)</td>
</tr>
<tr>
<td>Activities</td>
<td>Plan and design the workshop with the relevant institutions&lt;br&gt;Define the workshop objective&lt;br&gt;Agree on the workshop plan of action (when, where and how to do it)&lt;br&gt;Select participants and facilitators&lt;br&gt;Arrange necessary logistics and budget&lt;br&gt;Share responsibilities&lt;br&gt;Get the feedback of the workshop participants</td>
</tr>
<tr>
<td>Methods and tools</td>
<td>Meeting&lt;br&gt;Group discussion&lt;br&gt;Matrix ranking&lt;br&gt;Brainstorming&lt;br&gt;Stakeholder analysis&lt;br&gt;Case studies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>1B. PLANNING, INCLUDING IDENTIFICATION OF GEOGRAPHICAL AREA TO BE COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Develop and discuss on the proposed action plan&lt;br&gt;Define the responsibilities of each partner&lt;br&gt;Identify geographical area to be covered&lt;br&gt;Agree on the plan of action, including activities, dates, costs and logistics</td>
</tr>
<tr>
<td>Principles</td>
<td>The relevant institutions need to participate in every element of the process</td>
</tr>
<tr>
<td>Expected outcome</td>
<td>Developed action plan which includes what, when, where, who and...</td>
</tr>
<tr>
<td>how to do it</td>
<td>Identified geographical area to be covered</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------------------</td>
</tr>
</tbody>
</table>

| Participants | Relevant institutions  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers (female and male)</td>
</tr>
</tbody>
</table>

| Activities | Meet with the relevant institutions  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree on the steps and procedures of action plan</td>
</tr>
</tbody>
</table>

| Methods and tools | Group meetings  
|-------------------|--------------------------------|
|                   | Workshops  
|                   | Brainstorming |

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>2. TRAINING OF PARTICIPATING STAFF IN FPR/E APPROACHES AND TOOLS</th>
</tr>
</thead>
</table>

| Purpose | Discuss basic concepts and principles of FPR/E  
|---------|-------------------------------------------------|
|         | Practice the approach and the tools of FPR/E  
|         | Understand how to analyse a farming system and farmers' local conditions  
|         | Create a team spirit among partners |

| Principles | Involve participants in the learning process  
|------------|-------------------------------------------------|
|            | Review the day-to-day activities and sessions  
|            | Maintain balance between tasks and process  
|            | Be flexible |

| Expected outcome | Discussed concepts, principles and tools of FPR/E  
|-----------------|-------------------------------------------------|
|                 | Common understanding of FPR/E concepts as practised in the FPR/E approach and tools  
|                 | Good team spirit among partners |

<table>
<thead>
<tr>
<th>Participants</th>
<th>Staff from institutions participating in FPR/E</th>
</tr>
</thead>
</table>

| Activities | Plan and design the training with the relevant institutions  
|------------|-------------------------------------------------|
|            | Define the training objective  
|            | Agree on the workshop plan of action (when, where and how to do it)  
|            | Select participants and facilitators  
|            | Arrange necessary logistics and budget  
|            | Share responsibilities  
|            | Get the feedback of the participants |

| Methods and tools | Group discussion  
|-------------------|--------------------------------|
|                   | Brainstorming  
|                   | Role plays  
|                   | Case studies  
|                   | Video show |

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>3. DIAGNOSTIC SURVEY OF THE LOCAL SITUATION</th>
</tr>
</thead>
</table>

| Purpose | To gain an in-depth, common understanding of the social, economic, physical, natural and human assets and constraints of the area to be covered |

| Principles | Bringing together the knowledge bases of farmers, other key informants, researchers and extension workers  
|------------|-------------------------------------------------|
|            | Develop respect for each others knowledge  
|            | Acknowledging heterogeneity  
|            | Information sharing with a copy of information gathered left with community |

| Expected outcome | Increased respect and trust between researchers, extension workers and farming communities |
| **In-depth understanding of the situation** |
| Survey report |

| **Participants** |
| Farmers, researchers, extension staff and other partners |

| **Activities** |
| Plan the diagnostic survey |
| Contact traditional and local government leaders to get their approval of the diagnostic survey and follow-up activities |
| Obtain and analyse secondary sources of information |
| Conduct survey |
| Write and circulate report |

| **Methods and tools** |
| Wide range of PRA tools, including area maps, resource maps, social mapping, time lines, stories, resource flow diagrams, transect walks, semi-structured interviews, focus group discussions, individual interviews (case studies), use of aerial photos and videos, Venn diagrams, wealth ranking (proportional piling), seasonal and labour calendars, etc. |

## ELEMENT 4. PARTICIPATORY IDENTIFICATION OF PROBLEMS, OPPORTUNITIES AND WAYS OF ADDRESSING THESE

| **Purpose** |
| Enable the community members to discuss, analyse and prioritise their problems and opportunities |
| Identify community members priorities and preferences |

| **Principles** |
| As for 3, but also note that the problems and opportunities are very different between men and women, between young and old and between rich and poor |

| **Expected outcome** |
| Community members identify, analyse and suggest best possible solutions |

| **Participants** |
| Community members representing different groups in the community |
| Researchers |
| Extension staff |

| **Activities** |
| Identify problems and opportunities using PRA tools for different gender, age and wealth groups |
| Choose a suitable place for discussion with community members |
| Present lists of major problems identified by the study team for different groups |
| Ask the community members if they have any addition to the list |
| Divide community members into groups by wealth, age and sex |
| Ask them to put the problems in order of their priorities. Record the criteria they use for ranking |
| Discuss the root causes for the prioritised problem |
| Analyse interrelationships between problems and causes |
| Discuss with farmers their coping mechanisms to address the problems |
| Suggest alternative solutions |

| **Methods and tools** |
| PRA tools (Ranking, scoring, focus group discussions, mass meeting) |

## ELEMENT 5. PARTICIPATORY SELECTION OF PARTICIPANTS AND SELECTION OF SITES

| **Purpose** |
| Community members select participants who take part in research |
| Select trial sites |

<p>| <strong>Principles</strong> |
| Selection of participants and sites should reflect the objectives of the research |</p>
<table>
<thead>
<tr>
<th><strong>ELEMENT</strong></th>
<th><strong>6. PARTICIPATORY SELECTION OF TREATMENTS AND DESIGN OF TRIALS USING EXPERIMENTATION PRINCIPLES</strong></th>
</tr>
</thead>
</table>
| **Purpose** | Develop joint understanding of the objectives of the research  
Develop joint understanding of the principles of experimentation  
(replication, uniformity, comparisons without confounding, precision etc.)  
Develop understanding of the trial design options that are appropriate for the objectives of the research  
Discuss and agree on the design of trial (i.e. layout, plot size, replications etc.)  
Identify treatments appropriate to the objectives of the research and the circumstances of farmers |
| **Principles** | Farmers (and others involved) all need a good understanding of experimental principles, the objectives of the research and the implications of different treatments before making well informed choices. |
| **Expected outcome** | Understanding of trial design concepts  
Discussed and agreed design and treatments for the trial |
| **Participants** | Researchers  
Extension staff  
Participating farmers |
| **Activities** | Meet with the participating farmers  
Brainstorm farmers/experts experience on possible treatments  
Discuss further on the identified treatments  
Agree on the treatments with participating farmers  
Conduct training in experimentation principles  
Discuss the plot size, replications and layout |
| **Methods and tools** | Group discussion  
Brainstorming |

<table>
<thead>
<tr>
<th><strong>ELEMENT</strong></th>
<th><strong>7. IMPLEMENTATION AND PARTICIPATORY MONITORING OF TRIALS AND OTHER INTERVENTIONS</strong></th>
</tr>
</thead>
</table>
| **Purpose** | To conduct POFTS  
To track the progress made by the POFTS  
To generate useful data for periodic review/evaluation |
| **Principles** | Joint monitoring of POFTS between SMS, DAs, researchers and farmers  
Joint learning |

Greater ownership and better dissemination results if community select trial farmers.
| **Expected outcome** | Team spirit  
| Well managed POFTS  
| Monitoring data |
| **Participants** | Trial farmers  
| Subject matter specialists |
| **Activities** | Training of farmers and extension staff in collection and recording of information  
| Trial layout  
| Sowing /seeding different varieties  
| Follow-up of progress (visits, structured discussions)  
| Gather monitoring data |
| **Methods and tools** | POFT methods and tools (see Chapter 10) |
| **ELEMENT** | **8. PARTICIPATORY EVALUATION OF THE TRIALS**  
| **Purpose** | To review the performance of the different treatments  
| To select technologies suited to specific situations  
| To draw important lessons for future trials |
| **Principles** | Active involvement of farmers  
| Collegial relationship and team spirit among farmers, researchers, DAs and SMS |
| **Expected outcome** | A participatory evaluation report  
| Farmers able to pass on evaluation to community and visitors  
| Lessons learnt and problems encountered  
| A guide for future action |
| **Participants** | Trial farmers  
| SMS  
| Non-participant farmers |
| **Activities** | Call a joint meeting of farmers and SMS  
| Discuss as to how to carry out the evaluation  
| Generate evaluation criteria jointly  
| Rank and score the results according to the criteria |
| **Methods and tools** | Ranking and scoring  
| Participatory workshops  
| Group discussions |
| **ELEMENT** | **9. DISSEMINATION THROUGH VISITS, FIELD DAYS, MEDIA ETC. USING PARTICIPATORY AND CONVENTIONAL MEANS**  
| **Purpose** | To introduce the findings to intermediaries and end users (farmers, private enterprise, extension services, NGOs and donors)  
| To prepare the uptake environment for the final end use of the farmer-select technology |
| **Principles** | Joint learning  
| Being inclusive (gender, old, poor)  
| Needs-based  
| Use of multiple dissemination routes |
| **Expected outcome** | Demand for the technology  
| Improved uptake environment  
| Awareness creation on the importance of the technology |
| **Participants** | Trial farmers  
<p>| SMS |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Purpose</th>
<th>Principles</th>
<th>Expected Outcome</th>
<th>Participants</th>
<th>Activities</th>
<th>Methods and Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-trial farmers</td>
<td>Media people</td>
<td>Private enterprise</td>
<td><strong>Activities</strong></td>
<td><strong>Methods and tools</strong></td>
<td><strong>Element</strong></td>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Organization of visits</td>
<td>Meetings</td>
<td><strong>10. UPTAKE ACTIVITIES, E.G. FACILITATING SEED MULTIPLICATION OR FARMER TO FARMER SPREAD OF SKILLS AND KNOWLEDGE</strong></td>
<td>To multiply the selected technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Summon all concerned to a common place</td>
<td>Field days</td>
<td></td>
<td>To enhance farmer to farmer spread of skills and knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Explain the outcome and the selected technology</td>
<td>Cross visits</td>
<td></td>
<td>To improve the uptake environment of the technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadcasts about the media</td>
<td>V.I.P. field visits</td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td>Group discussion</td>
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<td></td>
<td></td>
<td>Using the newspaper and radio</td>
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<td></td>
<td>Journal articles</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extension materials (including video)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Expected outcome** | Improved information exchange between researchers and extension workers  
| | Improved, location specific PADETs  
| | Improved system of research, extension and input supply  
| | Improved and up-to-date research agendas |
| **Participants** | Researchers  
| | Extension workers  
| | Farmers  
| | Input suppliers |
| **Activities** | Prepare brochures, leaflets, scripts to radios and videos  
| | Prepare and or organize workshops, conferences  
| | Use the local and national media to disseminate information to the public |
| **Methods and tools** | Use of the media  
| | Prepare publications, brochures and leaflets  
| | Workshops and conferences |

**ELEMENT 12. FEEDBACK TO DONORS AND POLICY-MAKERS**

| **Purpose** | To inform donors on the progress of the project  
| | To secure timely procurement of funds |
| **Principles** | Team spirit  
| | Joint two way learning  
| | Flexibility  
| | Harmony |
| **Expected outcome** | Progress and final reports  
| | Publications of special types  
| | Correspondences with donors and other stakeholders |
| **Participants** | Project coordinator  
| | Project staff and collaborators |
| **Activities** | Prepare up-to date monthly quarterly progress reports  
| | Prepare and submit special technical publications  
| | Distribute the report to donors  
| | Receive feedback from donors |
| **Methods and tools** | Report writing procedures and rules  
| | Meeting & brainstorming of project staff  
| | Meeting & discussions with other stakeholder and with institutions |
Picture 1: Farmers' Participatory Research Forum, July 2001
CHAPTER 6
TOOLS AND METHODS FOR IMPLEMENTATION OF THE ELEMENTS OF FPR/E

6.1 Sensitisation workshop and identification of project partners: planning and stakeholder analysis

6.1.1 Planning

What is planning?

Planning refers to making decisions in advance on how to organize and implement activities (what, where, who, when, how).

Planning can be carried out for a complete project or program, or for a component activity.

Plans can be dynamic (i.e. they can be adjusted in the light of experience or changing circumstances).

Techniques such as the logical framework (log-frame) are a useful aid to planning and also for monitoring.

Good plans require creative thinking and sound decision-making skills.

Planning refers to the whole process, and includes:

- Deciding on objectives
- Deciding on target-groups
- Deciding on geographic areas
- Deciding on content
- Deciding on roles and responsibilities and logistical issues

Methods and tools - various methods can be used:

1. Secondary data collection: Secondary data is information that has already been collected (often for different purposes). It will include census data, reports, maps etc.

2. Acquiring new data for planning purposes: This data can be acquired through individual contacts, visits, direct observation, group discussions among different stakeholders, etc. It can also be acquired using PRA tools, like the Diagnostic Survey phase of the project, or using formal surveys, or case studies.

3. Workshops: Workshops can be 'real' (face to face) or 'virtual' (conducted through the internet). Often participatory stakeholder workshops are held at the beginning of a project to plan the implementation of that project, using log-frame and GOPP (goal-oriented project planning) techniques.

Principles of planning

- All those working on the implementation should be involved in the planning.
Communication among the team members and properly used planning tools help both in organizing, and later assessing, the work.

6.1.2 Stakeholder analysis

**What is stakeholder analysis?**

Stakeholder analysis is an approach for understanding a system by identifying the key actors or stakeholders in the system, and assessing their respective interests in that system and their potential impact on that system.

**Who are stakeholders?**

Stakeholders include all those that affect, and are affected by, the policies, decisions and action of the system; they can be individuals, communities, other social groups or institutions of any size or level in society. The term includes policy makers, planners and administrators in government and other organisations, as well as commercial and subsistence user groups (Grimble et al., 1995 in **)

**Why is stakeholder analysis important?**

- It uncovers/makes visible existing patterns of interaction.
- It improves mechanisms for interventions.
- It is a tool to predict conflict.
- It is a strategic entry point for participatory work because it gives answers as to who we are dealing with, who we should be dealing with and their inter-relations.

**Key questions:**

What is the system, its problems and conflicts?

How does the problem(s) affect different stakeholders, and how do they perceive the problem?

What are the stakeholders' characteristics, perceptions, perspectives, interests and responsibilities?

Who has access and control over resources?

What solutions are proposed and what does each stakeholder gain or loose by that solution?

Who takes decisions about what?

Who does what? What are their roles?


**Stakeholder analysis helps us:**

- To better understand the interests of stakeholders (how they might influence a project, or stand to gain or lose);
- To help identify who should participate in project identification, design, management, monitoring, evaluation, and how they should participate;
To assess the capacity of different stakeholders to participate in the project (level of power or influence);
To identify the potential conflicts between stakeholders which may prevent the project achieving its aims;
To identify existing or potential areas and mechanisms for collaboration among different stakeholders and mechanisms for conflict resolution.

**Key steps in a stakeholder analysis**

**Scoping**
- Identify objectives of your stakeholder analysis
  - Identify and prioritise stakeholders
  - Identify stakeholder interests
  - Conduct specialised analyses
  - Identify follow-up actions

Remember, wherever possible this should be an iterative, participatory process!

When you have identified your stakeholders, you can classify them in various ways. A useful analysis is to classify them according to their **importance** to achieving the project aims (e.g. direct collaborators and primary beneficiaries), and the **influence** that they have on the project's direction and methods, as shown in Figure 6. It is clear that each set of stakeholders (A, B, C, D) will require a different approach.
Figure 6: Classification of stakeholders according to importance and influence

High Importance

A

B

C

D

Low importance

Low influence

High influence

A  Stakeholders of high importance to the project, but with low influence. This implies that they will require special attention if their interests are to be protected.

B  Stakeholders appearing to have a high degree of influence on the project, who are also of high importance for its success. This implies that the project manager will have to construct good working relationships with these stakeholders, to ensure an effective coalition of support for the project.

C  Stakeholders, with low influence on, and/or importance to the project's objectives are of low priority and are unlikely to require specific attention or consideration in project design and evaluation.

D  Stakeholders with high influence, who can therefore affect the project outcome, but whose interests are not the target of the project, i.e. the project is of low importance to them. This conclusion implies that these stakeholders may be a source of significant risk, and they will need careful monitoring and management.

Gender analysis can be seen as a subset of stakeholder analysis. This highlights the need to treat men and women as different stakeholders in a project as they often have different roles, interests, capabilities and perceptions. More detail is given in section 6.3.6.
Picture 2: Examples of training in FPR/E approaches with lecture/seminar at the top, group discussion in the middle and a field visit at the bottom.
6.2 Training of staff in FPR/E approaches and tools

6.2.1 Methods for training of staff

Many methods of instruction can be used during training. No single one is better than the rest, although formal lectures are still the most widely used. For a training that stresses active participation and open dialogue, it is essential that trainers use a style of training that is consistent with the values of participation.

It is best to use a combination of learning methods and to alter the tempo of the training. A regular change of both the methods and pace will keep trainees interested and ready to learn. It will also be more interesting and less tiring for you as a trainer. The methods described in the next sections can also be used to good effect in a training session on participatory approaches (Scoones et al., PLA manual).

<table>
<thead>
<tr>
<th>Training Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture or seminar</td>
</tr>
<tr>
<td>Group discussion</td>
</tr>
<tr>
<td>Field visit/trip</td>
</tr>
<tr>
<td>Practical</td>
</tr>
<tr>
<td>Case-studies</td>
</tr>
<tr>
<td>Role play</td>
</tr>
<tr>
<td>Video</td>
</tr>
</tbody>
</table>

6.3. Understanding the local situation through participatory diagnostic studies using PRA methods

A wide range of tools is available under the general headings of PRA (Participatory Rural Appraisal) and PLA (Participatory Learning and Action). Each situation requires a different mix of these tools. A selection of tools is illustrated in this section. Try to use them in a logical sequence. Often it is useful to get a general history of the development of the area (using Timelines and accounts from elders) followed by a general physical map of the area. Once these are available, you can use these as tools to identify areas for deeper investigation. For example, use the Timeline to identify problems of natural resource degradation, or use the map to identify a good route for a transect walk.

6.3.1 Timelines

Timelines are a calendar of historical events and changes in the village, as far back as anyone can remember. Timelines are useful as an introductory exercise, for familiarization with village background and history.

- They can cover general history or focus on a particular issue, e.g. agriculture, health, education etc.
- They can be done at individual, village, community or institutional levels.
They help to establish rapport (a working relationship with mutual understanding and respect).

Timelines can make the changes over time visible, encourage discussion of the reasons for change, and associated perceptions and values, and raise questions about future trends.

Who should be involved? Old people and longer-term residents are particularly important in constructing timelines. The activity can reinforce respect for their knowledge.

Life events can be linked to actual years despite people not remembering specific dates, by relating them to significant events in the wider community or country that can be dated with some certainty.

Table 4: Time line of land-use and cropping pattern changes  
(based on interviewing 5 old men)

<table>
<thead>
<tr>
<th>DATES</th>
<th>MAJOR EVENTS</th>
</tr>
</thead>
</table>
| 1930 E.C.   | Italian Occupation:  
Crop production was less  
Type of crops: maize, sorghum, enset, barley, yam, welaita dono, finger millet, emmer wheat  
The soil fertility was high  
Less human population  
High production of crops from small area, and high production from animals  
Large area of grazing (communal) land  
Large number of livestock  
Large area of natural forest  
People were kind to each other |
| 1950 E.C.   | Land tenure under feudal system (feudalism era):  
Land was provided to the feudal landlords  
Expansion of agricultural land  
High population growth  
Number of livestock decreased due to grazing area allocation to farm land  
Communal forest and grazing area taken away by the feudal lords  
The feudal encouraged individuals to expand agricultural land and productivity |
| 1962 E.C    | WADU Agricultural extension / minimum package programme:  
Encouraged farmers to plough land over a larger area  
Introduced tree plantations  
Introduced modern cropping methods  
Introduced fertilisers and their application methods  
High population growth and the size of land owned became smaller and smaller  
Improved crops such as maize varieties; Kenya, Alemaya composites, and teff, (white colour, Minjare) and haricot beans (white) were introduced |
| 1967 E.C    | The 'Derg' Regime:  
Land was provided to individual farmers  
High taxation  
Producer cooperatives and service cooperatives established  
Less efficiency of the farmers in agricultural production  
Farmers became traders  
Farm land became smaller e.g. 0.5 ha/house hold |
<table>
<thead>
<tr>
<th>DATES</th>
<th>MAJOR EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communal grazing area was owned by the PA and individual</td>
<td></td>
</tr>
<tr>
<td>The soil fertility was depleted/ became unproductive</td>
<td></td>
</tr>
<tr>
<td>Input supply was limited</td>
<td></td>
</tr>
</tbody>
</table>

**1972 E.C.**

Socialism era:
- Productivity of the soil became lower
- The size of population and the rate of consumption became very high
- Weather variation affected agricultural production, low soil fertility, and draught etc, contributed to low yielding of the crops.
- The farm land owned by the farmers became very small
- Grazing and forestry areas became lesser due to expansion of farmland. The size of a family increased
- Soil erosion became one of the factors for low yield (sheet erosion on the farm land)
- Eucalyptus became one of the problems of the soil fertility in the PA. Because around almost all farm boundaries the tree is planted. This tree by its nature has got high absorption capacity of soil moisture and nutrients and it is deep-rooted plant. There is high competition between crops and eucalyptus trees for land and water.
- The youth, agriculturally active part of the community, were forced to join the military service.
- Agricultural marketing corporation quota was high. Thus, forcing farmers to sell most of their crops with a minimum price.

FARM Africa, Addis Ababa

6.3.2 Participatory mapping

**Description:** Participatory mapping uses local knowledge to produce a physical map of the area, highlighting certain features.

People use local materials, such as sticks, stones, grasses, wood, trees leaves, colored sands and soils; but may also bring outside materials, such as colored chalks, pens and paper.

**How to do Participatory mapping**

1. Decide what kind of map
   - Social map
   - Natural resources map
   - Watershed map, etc.

2. Find people who know and are willing to share their knowledge. Explain the idea of mapping.

3. Find a suitable place and medium.

4. Ask people to identify the key features and landmarks first (rivers, school, road, pond etc.).

5. Sit back and watch.

6. Revise and add details to the map during fieldwork.

7. Keep a permanent paper record of the map, including the map-makers' names to give them credit, and/or take a photo.
8. Sometimes a succession of maps works well. Different groups (e.g. men and women) will have different perceptions.

9. Lead on from the map to other tools, e.g. transects, wealth ranking, etc.

Picture 3: Farmers preparing a map of their area through marking out areas on the ground

An example of a map transferred to paper
6.3.3 Venn-diagram

**Description**: Venn diagrams are commonly used to analyze inter-relationships between institutions. This helps us to understand working relationships, relative importance of institutions and power structures at the local level.

**Procedure**: Work with a small group of local people (it is often good to work with separate groups of men and women) to:
- Identify key institutions (formal and informal)
- List the role of each institute
- Represent institutions by different colors or by writing the name of the institution in the circle that represents it
- Different size of circle represents the relative importance of the institutions (remember to record in what way is it considered important by the participants?)
- Place the circles in overlapping manner, such that the extent to which they overlap represents the degree to which there is contact between them.
- Use the diagram to initiate discussion on the roles of different institutions, and their impact on the lives of participants.

**Comment**

*The degree of overlap indicates the situation from no contact (separate circle) to considerable cooperation. Venn diagrams can be used to reflect the present relationships as well as anticipated relationships for better performance. By doing so key actors can be identified with their roles, and a sensitisation workshop can be held with these institutions.*
Picture 4: A participant in a workshop explaining a Venn diagram to show relationships among institutions with the community.
Figure 7: Example of Venn diagram: The degree of relations of various social institutions in Kejima-umbullo Peasant Association

6.3.4 Transect walk

**Description:** This is a walk or series of systematic walks to locate key information in the area of interest. During the walk(s), information is collected by:

- observing,
- asking,
- listening,
- looking,
- identifying different zones,
- finding problems and possible solutions.

The findings can be mapped on to a transect diagram. Transect walks help to compare the main features of an area, and the resources, uses and problems found in different zones.

**How to do transect walk**

1. Find community members who are knowledgeable and willing to participate in a walk through their village and surrounding area.

2. Discuss with them the different factors to be drawn in the transect (crops, land use, trees, soil etc.) and which route to take.

3. Walk the transect

4. Observe, ask, listen (do not lecture).

5. Discuss problems and opportunities.

6. Identify the main natural and agricultural zones and sketch distinguishing features. For each zone describe: soil, crops, livestock, other natural resources like springs, trees, and also identify problems, solutions, and opportunities.

7. Draw the transect

8. Crosscheck the information from the transect with key informants.

*Picture 5: Farmers and FPR staff making a transect walk*
Figure 8: Transect walk and supporting table of Arfaide-Lehayte Peasant Association

<table>
<thead>
<tr>
<th>Soil</th>
<th>'Kerata' (sandy)</th>
<th>'Kerata' (red)</th>
<th>'Kerata' (sand)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>'Timaita' (red soil)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crops</td>
<td>Maize, sorghum, teff, cassava, pigeon pea, haricot bean, papaya</td>
<td>Maize, sorghum, teff, pigeon pea, sunflower, cotton, chat, pumpkin, sweet potato</td>
<td>Maize, sorghum, teff, haricot bean, cotton, pigeon pea, sunflower</td>
</tr>
<tr>
<td>Livestock and other domestic animals</td>
<td>Chickens, cattle</td>
<td>Cattle, donkey</td>
<td>Cattle, sheep, goats</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Ficus vasta, Eucalyptus, Croton spp., Euphorbia spp., Acacia spp. Moringa stenopetala, Terminalia brownii, 'kawreata'</td>
<td>Terminalia brownii, Moringa stenopetala, Lapada, Castor, Eucalyptus spp., Chat, Ficus vasta, Acacia spp. 'kawreata'</td>
<td>'baata', Olea europeae subsp cuspidata, Cordia africana, Dodonea angustifolia, 'kataata', Solanum incanum, Acacia spp., 'kawreata'</td>
</tr>
<tr>
<td>Land use</td>
<td>Scattered villages, farm land, private grazing land</td>
<td>Same</td>
<td>Same</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B około and shrubs, Acacia spp., Melia azadarachta, Eucalyptus, 'gesho', cactus, Cordia africana, 'kawreata' 'hankalta'</td>
</tr>
<tr>
<td>Activity</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Apiculture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cropping system</td>
<td>Agro-silvo-culture Inter-cropping fallow</td>
<td>same</td>
<td>same</td>
</tr>
<tr>
<td>Institutions</td>
<td>Church</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed</td>
<td>Teff straw, maize stalks, grass</td>
<td>same</td>
<td>same</td>
</tr>
<tr>
<td>Water resource</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water and soil conservation measures</td>
<td>Stone and soil bunds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cottage industry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil degradation</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

6.3.5 Understanding diversity in livelihoods

Communities are not homogenous – there is often great diversity in access to assets, e.g. land ownership, livestock, housing, social support, finance and skills. It is important to explore and understand this diversity to identify the different opportunities, priorities and constraints facing different groups.

Specific methods are needed, particularly to find out about disadvantaged and deprived groups, as often the poorest find it the most difficult to make their views and problems heard. Analysis of social differences can help to identify in detail the positions of different stakeholders and the likely benefits to them from different interventions. Discussions with different groups can lead to detailed problem analysis and joint planning of actions and interventions to improve local livelihoods.

Social mapping

Social mapping gives a picture of the social and spatial characteristics of communities. It uses drawings and symbols to map differences between different parts of the town/village or between different households in terms of their social and economic status and patterns of livelihood. It can show caste and class distributions, indicating wealth and poverty differences within the same areas. To complete this successfully, participants require familiarity with their neighbours. Maps are useful to stimulate discussion and to explore farmers understanding of their social environment.

Below is an example of a social map made by the farmers of Yetachignaw Ambicho Peasants Association. The original writing is in Amharic.

![Social Map of Yetachignaw Ambicho PA](attachment:image.png)
Wealth (or well-being) ranking

Description: There are inequalities and differences in wealth in every community. These differences influence or determine people's behaviours, coping strategies, and views. Wealth (or well-being) ranking is a technique for understanding the distribution of wealth in a community. It is based on how village people themselves understand 'well-being' and poverty, and how they rank their fellows according to these criteria. Wealth ranking analysis is easier to manage if the social unit is less than 50 households.

Wealth ranking allows us to:
- Investigate perceptions of wealth differences and inequalities in a community.
- Discover local indicators and criteria of wealth and well being.
- Establish the relative position of households in a community

This type of socio-economic community profile may be used as a basis for the sampling of households for later interviews, to identify and target project participants (e.g., the poorest training candidates etc.), and to see whether families who are project participants improve their scores over time compared with those who do not participate in the project. It is also useful as an introduction to discussing coping strategies, opportunities, problems, and possible solutions.

Wealth ranking is based on the assumption that the community members have a good sense of who among them is more or less well-off. It should be kept in mind that this is the community's own perception of the situation. It is good practice to cross-check this with another method (e.g. direct observation checklist) to verify the results.

How to do wealth ranking

A. Card sorting

1. Make a list of all households to be ranked. Use a social map of the community.
2. Write the name and number of each household on a card.
3. With advice from community leaders find a willing and able informant (man or woman) who knows the community well.
4. Find a quiet place to discuss well-being.
5. The informant puts the cards into piles – make as many piles as possible.
6. Read out the name on each card.
7. Ask the informant to place households in different piles according to perceived wealth – richest, poorest, middle etc.
8. Discuss the criteria used by the informant for judging whether someone is better off, or poor. For example, differences between a rich and poor household might be seen as related to: having cattle, having employment, participating in social occasions, owning a business, what the house is built of, owning a vehicle or other special equipment, family size, size of farm, etc.
9. Repeat this exercise with two or three more informants.
Compute and group (see also card sorting)

- Calculate the score for each household for each informant (HH = household)
  
  \[ \text{SCORE} = \text{Pile number in which HH is located} \]
  
  Total number of piles made by the informant

- Write the household numbers in a line and use this to record the scores

- Calculate the average score.

  \[ \text{AVERAGE SCORE} = \frac{\text{Total of its score}}{\text{Number of groupings}} \]

- Put the cards in order from lowest to highest average score (poor to rich).

- Study any unreliable scores.

Finally discuss in detail what makes a difference in wealth between the groups. Try to distinguish between the signs (the visible indicators) and the causes of wealth/poverty.

These techniques can help identify social groupings from which families can be contacted for more detailed discussion, e.g. large, medium and small farmers, those with/without livestock, age groups, occupational/skill groups, women, the very poor, etc.

Wealth status in the Peasant Association (wealth ranking)

A group of 12 middle-aged farmers put forward the local criteria for classifying wealth within their Peasant Association (PA) – see Table 5. The size of a family's farm holding and livestock ownership (which are usually positively correlated) were mentioned as the principal factors (criteria) in categorising any one farm family into the wealth statuses of rich, medium, and poor. 'Poor' farmers were further sub-categorised into the poor, poorer and poorest of all (poorest of the poor).

Farmers in Gallo Argessa PA use their own unit for measuring (estimating) the size of their farmland. They use a measurement unit known as a 'bakafa': 26 'bakafa' are roughly equivalent to one 'Timad' or a quarter of a hectare. Thus, 104 'bakafa' are equivalent to one hectare.

Based on the wealth criteria given in Table 5, informant farmers indicated the relative proportion of farmers in the different wealth strata. These were:

- Rich farmers constituted 15% of the PA
- Medium farmers constituted 30%
- Poor, poorer and poorest farmers constituted 55% together

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1 A 'timad' is the area that a pair of oxen can plough in one day; a quarter of a hectare.
Table 5: Categories of wealth status in Gallo Argessa Peasant Association (based on the opinions of 12 middle-aged farmers)

<table>
<thead>
<tr>
<th>Category</th>
<th>Land holding</th>
<th>Livestock holding</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cow</td>
<td>Ox</td>
</tr>
<tr>
<td>Rich farmer</td>
<td>3-4 ha</td>
<td>70</td>
<td>6</td>
</tr>
<tr>
<td>Medium farmer</td>
<td>2 ha</td>
<td>30</td>
<td>4</td>
</tr>
<tr>
<td>Poor farmer:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>1 ha</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Poorer</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Poorest</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>


This shows that people in the PA are predominantly poor. Some attempts were made by the study team to get figures for representation of different ethnic groups within the 'poor' category, but this was not successful.

Picture 6: Sorting cards with household head names on them for wealth ranking with farmers
6.3.6 Gender

**Description:** What is gender? It is a characteristic of men and women that is socially determined, whereas sex is a characteristic that is biologically determined—as male and female. However, the sex of a person is usually the most important feature in determining their social gender role.

Gender roles for men and women vary, and are different from one culture to another, and from one social group to another, because of many reasons.

![Figure 9: Diagram of social roles and gender analysis](image)

As gender roles are different, gender needs are also different. There are two types of gender needs. Practical and strategic needs. The distinction between the two, and an analysis of women’s roles are part of the situation analysis and gender planning in a project.

Work in any society is divided and allocated to people in different ways according to social roles. This is termed as the **division of labour**. Different groups may do manual, intellectual, political or artistic work. Specialization can lead to greater efficiency and overall production, although not all work is rewarded equally. Gender is important, as it is one of the main bases for the social division of labour. The gender division of labour is the allocation of work roles, responsibilities, opportunities and rewards on the basis of gender.

**Gender** refers to the social relationships between women and men, not just the biological differences.

**Gender** is a basis for the division of labour, which varies according to context and culture.

The lives of men and women in the household and the wider economy are closely interlinked—changes affecting men affect women, and the other way round.
Roles may be complementary, but they can involve an unequal exchange of effort (e.g. of work time, resources or money).

Women often have less access to resources, rewards and power, (lower incomes, less political and social influence, less control over personal and reproductive lives).

Gender analysis:

- Leads to the identification of the needs of men and women at the grassroots.
- Differentiates the needs, priorities and interests of men and women at different stages in their lives; as youths, working adults, elders.
- Helps to disaggregate the important information among the main problems and sets out possible solutions.

Gender is a valuable concept – it helps us to identify social structures, practices and beliefs that maintain the unequal positions of women and men. By understanding these, we can start to develop strategies to reduce the inequalities. For example:

- Development research programmes that disaggregate data so that outputs differentiate impacts of selected policies on men and women.
- If male experience is regarded as the norm in planning, it can result in the exclusion of women's interests.
- Limited female access to education, land and resources affects women's needs.
- An understanding of gender relationships can help to identify and address social practices and structures that perpetuate inequality.
- The analysis of gender relationships can help to formulate more realistic, effective and equitable development policies.

Table 6: An example of the distribution of labour by gender

<table>
<thead>
<tr>
<th>Activities/types of labour</th>
<th>% of total labour hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
</tr>
<tr>
<td>Cuts forest, stakes fields</td>
<td>95</td>
</tr>
<tr>
<td>Turns the soil</td>
<td>70</td>
</tr>
<tr>
<td>Plants seeds and cuttings</td>
<td>50</td>
</tr>
<tr>
<td>Hoes and weeds</td>
<td>30</td>
</tr>
<tr>
<td>Harvests</td>
<td>40</td>
</tr>
<tr>
<td>Transports crops home</td>
<td>20</td>
</tr>
<tr>
<td>Stores crops</td>
<td>20</td>
</tr>
<tr>
<td>Processes food crops</td>
<td>10</td>
</tr>
<tr>
<td>Markets crops</td>
<td>40</td>
</tr>
<tr>
<td>Carries water and fuel</td>
<td>10</td>
</tr>
<tr>
<td>Cares for domestic animals</td>
<td>50</td>
</tr>
<tr>
<td>Trims tree crops</td>
<td>90</td>
</tr>
<tr>
<td>Hunts</td>
<td>90</td>
</tr>
<tr>
<td>Feeds and cares for the young, the men and the aged</td>
<td>5</td>
</tr>
</tbody>
</table>

A lack of knowledge about the role played by women has sometimes led to their exclusion in development and research projects. Where they are included, a limited understanding of gender roles can result in a failure to provide appropriate technologies or training services to women as producers. In most countries the majority of extension staff are men. Direct contact between these extension officers and women is often less frequent than with male farmers. Male extension officers often assume that men speak for women in their community and communicate messages back to them, although this is by no means always the case.

Gender needs

Everyone has needs, but gender needs refer to the different needs of men and women arising because of the division of labour, and women’s limited access to power and resources. Broadly two types of gender needs can be distinguished:

**Practical gender needs**

- To meet inadequacies in living conditions.
- To assist women and men to perform their existing roles.

**Strategic gender needs**

- To challenge or change existing gender roles – to promote women’s equality, access to resources and control over their own lives.

*Picture 7: Two examples of women’s work – cooking, here with an improved stove, and carrying, in this case the harvest of barley from the field to the homestead.*
Table 7: Addressing women's gender needs

<table>
<thead>
<tr>
<th>Examples of Actions that Address women's Practical Needs</th>
<th>Examples of Actions that Address women's Strategic Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing their workload, for example the convenient location of water stand-pipes and hand-pumps; providing grinding mills; developing fuel-efficient stoves.</td>
<td>Improving education opportunities, for example adult literacy classes; female teachers provided as role models; gender neutral textbooks.</td>
</tr>
<tr>
<td>Improving health, for example primary health centres; child spacing/family planning advice; clean water supply.</td>
<td>Improving access to productive assets, for example legal status on land ownership; rights to use common property; bank accounts.</td>
</tr>
<tr>
<td>Improving services, for example primary schools; transport facilities; housing infrastructure.</td>
<td>Allowing women to take part in decision making, for example local committee membership; participation in elections; establishing and supporting women's groups.</td>
</tr>
<tr>
<td>Improving income, for example skills training; credit groups; access to markets.</td>
<td>Allowing equal opportunities for employment, for example access to jobs traditionally done by men; equal pay for comparative jobs even if there is a gender division of labour.</td>
</tr>
</tbody>
</table>

Gender roles

Awareness of gender roles is important because technology needs and their impact may be different for men and women. For example, the same technology, which can increase production and men's incomes, could increase the labour burden on women. It is therefore important for people working in technology development to have an understanding of gender roles at household and community level, including the different responsibilities in the household, decision-making, control and the distribution of benefits.

Because of the division of labour and the different roles of men and women, and boys and girls within the household, care should be taken when talking of 'household' characteristics and needs. Assumptions around the 'household' can be challenged from a gender perspective. Households in different countries and cultures have different structures (e.g. polygamous, extended etc.). They divide tasks in different ways and have different norms regarding access to and control over resources and decision-making.

One method of analysing gender roles is to distinguish three different types of roles; a reproductive role, a productive role and a community management role.
### Table 8: Triple Roles

<table>
<thead>
<tr>
<th>Productive Role</th>
<th>Reproductive Role</th>
<th>Community Management Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities that generate income for the household:</td>
<td>Domestic activities that increase household resources:</td>
<td>Provision and allocation of community resources:</td>
</tr>
<tr>
<td>Paid employment, e.g. labouring jobs; management or professional positions; Income in kind, e.g. work on family farm.</td>
<td>Creative role, e.g. bearing, looking after and educating children; Maintenance role, e.g. cooking food, washing clothes, growing food for home use.</td>
<td>Creation and distribution of items for collective consumption, for example clean water; medical services; Membership of committees, but positions of leadership and influence are frequently occupied by men.</td>
</tr>
</tbody>
</table>

**Tools for gender analysis**

The following tools can be used in a more thorough gender analysis of activities, access to resources, benefits and incentives, and development needs, which should precede the planning of a development or research programme.

- **Activity profile**: explore time allocation and task analysis by gender, describing patterns of labour locations and hours. Work relating to the reproductive role – time spent in childcare, fetching water, cooking etc., and tasks related to the productive role – growing food and cash crops, processing products, looking after livestock, and marketing. What demands do men make on women’s labour?

- **Daily routines**: an understanding of daily calendars/daily routines helps us to learn about daily chores. One should ask the relevant people what s/he does each day, how much time one spends in each activity, and the order of activities. Daily routines reveal differences in the workload of men and women, as well as gender roles.

- **Access to resources**: control and access to land (inheritance, purchase, customary allocation etc), implements, cash, credit, livestock, etc.

- **Benefits and incentives**: control over products. Who earns what, who pays for what, who decides on purchases and sales, who controls the money?

- **Needs analysis**: prioritisation of problems and interests by gender.

It is useful to bear in mind that men and women often have different perspectives about their responsibilities. When discussing gender roles, men often estimate women’s contribution, particularly to decision making, at a lower level than women describe for themselves.

A second caution is that women are not a homogeneous group. It is important to explore variations in roles and needs, according to wealth and status, age and stage of family development.
Picture 8: Interview with a key informant – here it is a potter on his way to market

Figure 9: Group interview with selected representatives

Picture 10: Focus group discussion with a group of young people
6.3.7. Semi-Structured Interview (SSI)

Description: Semi-structured interviewing (SSI) is a form of guided interviewing where only some of the questions are predetermined. The interview is guided by a checklist, but also allows for supplementary questioning (probing), or the avoidance of questions if they are thought to be too sensitive. It is a method for gaining information using open questions in a structured, but relaxed way that puts those being interviewed at ease. Many of the rules of semi-structured interviewing also apply to the other PRA tools where questions are asked of local people.

Types of Semi-structured Interviews

**Individual interviews:** These are conducted with a sample of purposely-selected individuals. The sample might include farmer leaders; innovative farmers who have tried recommended technologies or successfully developed improved technologies, women household heads, resource poor farmers, etc. Interviewing a number of different farmers on the same topic will quickly reveal a wide range of opinions, attitudes, and strategies. It is advisable to ask individual respondents about their own knowledge and behaviour.

At the same time, many communities have at least one 'trouble-maker' who disagrees with every thing. Responses from these persons can provide valuable crosschecks and reveal useful insights that may not result from other interviews. Random interviews with passers-by may also reveal useful information and unexpected viewpoints.

**Key informant interview:** A key informant is anyone who has special knowledge on a particular topic. Key informants are expected to be able to answer questions about the knowledge and behaviour of others and especially about the operations of the broader systems. While there are risks of being misled by key informants' answers, and crosschecking is necessary, key informants are a major source of information. Outsiders who have come to live in the community can be valuable key informants.

**Group interview:** Interviewing a group can provide access to a larger body of knowledge (or community level information), and provide an immediate crosscheck on information. As information is given by one member of the group, the others will immediately offer comments if they think the information is unfair or incorrect. When groups become too large (as a rule of thumb more than 20-25), management can become more difficult.

Group interviews are not useful for discussions of sensitive information. They can also be seriously misleading when the questioner is believed to have the power to control benefits or sanctions. Thus, the interviewers should encourage alternative views and opinions to be forwarded, and to probe to avoid group pressure. Informal conversations after the meeting can be useful to get information from those who were not able to express their opinions during the group interview.

**Focus group discussion:** This type of discussion helps to focus on specific topics in detail with a small group of people (6-12) who have an intimate knowledge about the topic. Often, a facilitator is chosen to ensure that the
discussion does not diverge too far from the original topic and that no
participant dominates the discussion.

Whatever form the semi-structured interview may take there are important
considerations to take into account.

1. The interviewing team should consist of 2-4 people of different
disciplines.

2. Begin with traditional greetings and state that the interview team is
here to learn.

3. Begin the questioning by referring to someone or something visible.

4. Conduct the interview informally and mix questions with discussions.

5. Be open minded and objective.

6. Let each team member finish their line of questioning (don't interrupt)
before starting a new item.

7. Carefully lead up to sensitive questions.

8. Assign one note taker (but rotate this responsibility among the team
members).

9. Be aware of non-verbal signals.

10. Avoid leading questions and value judgments.

11. Avoid questions which can be answered with 'yes' or 'no'.

12. Individual interviews should be no longer 45 minutes.

13. Group interviews should be no longer than two hours.

14. Each interviewer should have a list of topics and key questions written
down in his/her notebook as a checklist to guide the interview and make
sure that all the important topics are covered.

Procedures for conducting group discussions

- Need to work through local structures and culturally appropriate
  authorities.
- Need for clear introductions and explanations of the working
  approach.
- Recognition of the community – not just individuals. Solutions have
to be worked out on through the community.
- Recognise other change agents in the area.
- Important to recognise the range of community needs.

Communication skills

Communication between researchers and local people is greatly facilitated by
appropriate attitudes on the part of the researchers. Team members need to
be sensitive and alert. Defining team roles in interviewing is useful.
SSI common mistakes

- Failure to listen closely
- Repeating questions
- Helping the interviewee to give an answer
- Asking vague questions
- Asking insensitive question
- Failure to probe (cross-check) a topic
- Failure to judge answers (believing everything)
- Asking leading questions
- Allowing interview to go on too long
- Overgeneralization of findings
- Relying too much on what the well-off, the better educated, the old, the men have to say
- Ignoring anything that does not fit the ideas and preconceptions of the interviewer
- Giving too much weight to answers that contain 'quantitative data' (for example 'how many goats do you own?')
- Incomplete note taking

Probing is very important in gaining a fuller understanding of explanations given by participants. Asking questions starting with the following six questioning words, called the 'six little helpers', can help uncover information.

The six little helpers

- Who?
- Why?
- What?
- When?
- Where?
- How?

Several methods are available to help increase participation:

- Use visual aids – flip chart, pens, post-its, to record information as it is given. Leave the originals with the group and take a copy.
- Try to bring quieter people into the discussion, both men and women, young and old.
- Try to keep the discussion informal, using everyday language, not jargon or scientific paper language.
- Avoid acronyms, and ‘in group’ phrases.
- Take care with ‘body language’, see section??
- Watch out for sensitive subjects. Concentrating on personal or personalized questions are likely to get incorrect information.
- Listen and learn, do not write anything down except for note taker, who should first ask permission.
Allow sufficient time for people to discuss questions. Be sensitive to the level of interest by the group and observe when the group gets restless or tired.

Ask if any community-based workers, like development agents, are present.

Ask if any special groups are present - e.g. house builders, blacksmiths, potters, weavers, traditional healers, midwives, etc.

Do not jump to conclusions about possible solutions.

Table 9: Do's and don'ts of Semi-structured Interviewing

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T / DO NOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spend time preparing a comprehensive interview guide or checklist. Use it for guidance during interviews</td>
<td>Don't interrupt each other</td>
</tr>
<tr>
<td>Remember the interview is structured by the team for a purpose</td>
<td>Don't debate issues within the PRA team and not with farmers</td>
</tr>
<tr>
<td>Be relaxed and intense (body relaxed but mind in gear)</td>
<td>Don't accept the first answer – probe all topics</td>
</tr>
<tr>
<td>Explain clearly who you are</td>
<td>Don't ask leading questions. Any question that can be answered with a 'yes' or 'no' is a leading question.</td>
</tr>
<tr>
<td>Let each team member finish their line of questioning, before another is started</td>
<td>Don't interrupt or pressurise informants</td>
</tr>
<tr>
<td>Probe a topic by using the 'six helpers': what, when, where, who, why and how. Also use the key probes: how do you mean?, tell me more about that, anything else? But why?</td>
<td>Don't blame, suggest or promise</td>
</tr>
<tr>
<td>Also probe by asking informants to role play - 'suppose ................!'</td>
<td>Don't side with opinion leaders or agitate</td>
</tr>
<tr>
<td>Listen closely</td>
<td>Don't supply answers for an informant who is hesitating.</td>
</tr>
<tr>
<td>Record information and write up notes</td>
<td>Don't switch or drop subtopics</td>
</tr>
<tr>
<td>Review progress between interviews.</td>
<td>Don't interview the translator</td>
</tr>
<tr>
<td>Arrange visits beforehand. Work through appropriate authorities and local structures</td>
<td>Don't repeat questions asked by somebody else</td>
</tr>
<tr>
<td>Make clear introductions and explanations of working approach – community, groups and individuals.</td>
<td>Don't ask vague or insensitive questions</td>
</tr>
<tr>
<td>Choose appropriate locations for individual interviews (privacy), or group discussions – find somewhere to sit comfortably, and an appropriate time that fits with people's work hours (men and women)</td>
<td>Don't violate taboos and norms</td>
</tr>
<tr>
<td>Use everyday language</td>
<td>Don't concentrate on your own interests</td>
</tr>
<tr>
<td>Use analogy</td>
<td>Don't manipulate or create needs.</td>
</tr>
<tr>
<td>Build up a dialogue</td>
<td>Don't dominate proceedings by using inappropriate non-verbal behaviour.</td>
</tr>
<tr>
<td>Learn from what is not said</td>
<td>Don't take up too much time of an informant who is busy.</td>
</tr>
<tr>
<td>Find out about taboos and norms</td>
<td>Don't show disapproval or distaste about local conditions or drinks or food offered.</td>
</tr>
<tr>
<td>Be neutral and objective</td>
<td>Don't indicate disbelief by criticising or even just smiling.</td>
</tr>
<tr>
<td>Be creative, adaptable and innovative</td>
<td></td>
</tr>
<tr>
<td>Learn from errors</td>
<td></td>
</tr>
<tr>
<td>Use a variety of PRA techniques</td>
<td></td>
</tr>
<tr>
<td>Cross check information</td>
<td></td>
</tr>
<tr>
<td>Respect farmers' perceptions and knowledge</td>
<td></td>
</tr>
</tbody>
</table>
Table 10: Listening Techniques

<table>
<thead>
<tr>
<th>TYPES</th>
<th>PURPOSE</th>
<th>POSSIBLE RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarifying</td>
<td>To get at additional facts.</td>
<td>'Can you clarify this?' 'Do you mean this?' 'Is this the problem as you see it now?'</td>
</tr>
<tr>
<td></td>
<td>To help the person explore all sides of a problem.</td>
<td></td>
</tr>
<tr>
<td>Restatement</td>
<td>To check out the meaning and interpretation with another.</td>
<td>'As I understand it, your plan is .......' 'Is this what you have decided to do ... and the reasons are ....'</td>
</tr>
<tr>
<td></td>
<td>To show you are listening and that you understand what the other has said.</td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>To convey that you are interested and listening.</td>
<td>'I see' 'I understand.' 'That is a good point'.</td>
</tr>
<tr>
<td></td>
<td>To encourage the person to continue talking.</td>
<td></td>
</tr>
<tr>
<td>Reflective</td>
<td>To show that you understand how the other feels about what (s)he is saying.</td>
<td>'You feel that ...' 'It was shocking as you saw it.' 'You felt you didn't get a fair hearing.'</td>
</tr>
<tr>
<td></td>
<td>To help the person to evaluate and temper his or her own feelings as expressed by someone else.</td>
<td></td>
</tr>
<tr>
<td>Summarising</td>
<td>To bring all the discussion into focus in terms of a summary.</td>
<td>'These are the key ideas you have expressed .....' 'If I understand how you feel about the situation ....'</td>
</tr>
<tr>
<td></td>
<td>To serve as a springboard to the discussion of new aspects of the problem.</td>
<td></td>
</tr>
</tbody>
</table>

What is wrong with these questions?

Is it true that it is difficult to get your cattle to the veterinary clinic?
How do you get your medicine?
Wouldn't you prefer to grow improved maize varieties?
What do you do as a local extension agent?
Isn't the new clinic improving child health?
Do you sow seeds in a straight row?
How do you find the school?
Shouldn't you cover your water storage pot?

The leading questions 'lead' the respondent to say yes or no, whereas an open-ended question that uses 'what? when? where? who? why? or how?' opens up the conversation. There may, however, be occasions when closed questions are correct and necessary. There is no absolutely correct or incorrect question; it depends on the stage of the interview, the topic and the context.
6.3.8 Ranking

**Description:** Ranking allows us to see individual and group priorities among a number of problems or possibilities.

**Preference ranking**

**Description:** This is one of the easiest forms of ranking, and can be used quickly to get a good idea from people about their priority problems or preferences.

**How to do Preference Ranking**

1. Choose a set of problems or preferences to be prioritized. This can be done through brainstorming, or it can be done based on data gathered during previous informal or semi-structured interviews and observation. In practice such a list includes 3-6 items. Using more than six can be confusing for people.

2. Ask each person to arrange the items in the set from ‘most important’ to ‘least important’. This can be done in individual interviews, or it can be done in a group by voting with different markers. It can be done publicly by queuing or on a chalkboard, or privately by voting.

3. Tabulate the results (see the example in Table 11) and discuss the priorities given by the group.

**Table 11: Farmers preference of Enset clones based on different criteria**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Shena</th>
<th>Shela</th>
<th>Bezede</th>
<th>Chenga</th>
<th>Nippo</th>
<th>Zinca</th>
<th>Chetto</th>
<th>Genticho</th>
<th>Zergula</th>
<th>Sholola</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought resistance</td>
<td>1</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>10</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Early maturity</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Food test</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Market demand</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>9</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Yield potential</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>9</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Disease resistance</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Rank</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>9</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Lower number indicates high demand and use value,
Higher number indicates low demand and use value.

**Informants**
Admassu Adule and Tilahun Boeto, Date 18/2/92 E.C
Source: Diagnostic survey of Kore-Biko (Amaro)
(Report of Diagnostic survey of Kore PA in Amaro Special Wereda, Organized by BOA and FARM Africa. Edited by Helen Kassa and Assefa Zeleke)
Pairwise Ranking

**Description:** Like preference ranking, pairwise ranking can be used quickly to get a good idea about what people think are the most important problems or priorities. It is more useful for interviewing and exploring the reasons why people prefer one possibility over another.

**How to do Pairwise Ranking**

1. Choose 3–6 of the most important problems or preferences on the basis of previous research, which the people have indicated as problems or possible priorities. For example, problems related to food production:
   - drought
   - pests
   - weeds
   - cost of inputs
   - poor soil

2. Draw a picture or write each of the problems or preferences on separate sheets of cardboard or paper.

3. Show the different problems to the participants until all combinations of pairs have been covered. As each pair is presented,
   - ask which item in each pair is the most serious problem/priority
   - ask the reasons for choosing the item
   - record on a matrix (chart) the answer that is given
   - ask if there is anything about the second choice which is also important. Note this as well.

4. When you have finished the matrix, quickly tabulate it and check with the interviewee to confirm that he/she agrees with the prioritizing. Ask if there are any problems or priorities which have been left out.

5. After doing a number of interviews tabulate the responses from all of them.

**Table 12: Example of pair-wise ranking matrix for problems in food crops production**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought (DR)</td>
<td>DR</td>
<td>a</td>
</tr>
<tr>
<td>Pests (PE)</td>
<td>IN</td>
<td>b</td>
</tr>
<tr>
<td>Weeds (WE)</td>
<td>DR</td>
<td>c</td>
</tr>
<tr>
<td>Cost of inputs (IN)</td>
<td>PE</td>
<td>d</td>
</tr>
<tr>
<td>Poor soil (SO)</td>
<td>SO</td>
<td>e</td>
</tr>
<tr>
<td>Poor soil (SO)</td>
<td>IN</td>
<td>f</td>
</tr>
</tbody>
</table>

For example, problems related to food production:

- Drought
- Pests
- Weeds
- Cost of inputs
- Poor soil
Table 13: Pair-wise ranking of problems by poor ("Eyessa") group.

<table>
<thead>
<tr>
<th>Feed shortage and poisonous plant</th>
<th>Animal disease and poor health services</th>
<th>Water shortage</th>
<th>Market problems</th>
<th>Low ownership of livestock</th>
<th>Bush encroachment</th>
<th>Conflict</th>
<th>Lack of social services</th>
<th>Financial shortage</th>
<th>Asset ownership</th>
<th>Frequency/ Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed shortage and poisonous plant</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>1</td>
<td>1/10</td>
</tr>
<tr>
<td>Animal disease and poor health services</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>7/2</td>
<td></td>
</tr>
<tr>
<td>Water shortage</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>2/7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market problems</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>3/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low ownership of livestock</td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td>5</td>
<td>6/3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bush encroachment</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>2/7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conflict</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>10/1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of social services</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>6/3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial shortage</td>
<td>9</td>
<td>6/3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset ownership</td>
<td>2/7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DirecMatrix Ranking

Description: Direct matrix ranking is a way in which various items, e.g. trees, houses etc., can be compared through the different values given by people to various qualities. It is very useful when trying to understand and make a decision among alternatives.

How to do direct matrix ranking

1. Have people select a class of objects that is important to them, e.g. cooking fuels.
2. List the most important different kinds or items in that class. Try to keep the list to 6 or fewer, e.g. wood, charcoal, kerosene, LP gas.
3. Ask people to discuss and list the most desirable or positive characteristics for the class: e.g. the most desirable characteristics of good cooking fuel could include cleanliness, safety, low cost, availability, heat control.
4. Draw the matrix.
5. For each characteristic, ask which item in the class is 'best', 'next best', 'worst', 'next worst'. As you are doing this complete the matrix and tally the results.
6. Ask which criteria is the most important, then force a choice by asking if people could only have one kind of item, which would they choose.

Table 14: Example of direct matrix ranking: Sweet potato cultivars as ranked by three farmers.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Taste</th>
<th>Texture when cooked (1 = watery, 6 = dry or powdery)</th>
<th>Area (ha.) (1 = little or none; 6 = widely grown)</th>
<th>Maturity (1 = early, 6 = late)</th>
<th>Pest tolerance (1 = high, 6 = poor)</th>
<th>Drought tolerance (1 = high, 6 = poor)</th>
<th>Length of time under cultivation (1 = long time, 6 = recently introduced)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bota Erbo</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Erbo Gessa</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Aelkeshe</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Lisane</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fino</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Gojam</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>


6.3.9 Seasonality analysis/ seasonal calendars

Description: Calendars of activities and events map out the seasonal constraints and opportunities by showing changes by month throughout the year. They help to:

❖ Understand changes over the year
❖ Explore connections
Identify problems/periods of stress, and identify the most appropriate time of the year to introduce a new technology, for example.

Seasonal calendars can be done on several issues including rainfall pattern, crop calendar, labour demand, health problems, availability of feed, income and expenditures, market prices, migration patterns, availability of food, prevalence of pests and diseases.

**How to do a seasonal calendar**

1. Identify the type of seasonal pattern you wish to learn about.
2. Find one or more people able and willing to share their knowledge and their views.
3. Find a suitable place with enough space for making the diagram and shade from sun or rain.
4. Explain the purpose of the exercise carefully.
5. Ask when ‘their’ year starts.
6. Ask how they divide the year. In particular, it is advisable to use the local calendar and names of months, religious festivals, and agricultural operations, etc.
7. Have the informant mark the unit on the ground, the floor or on a large sheet of paper.
8. Ask probing questions, particularly when? and what?
10. Ask the participant(s) to mark which month is or months are at the extremes, the very beginning and end of an activity.
11. Continue comparing each month with the extremes until the whole year is completed.
12. Make a permanent record.
13. Analyse the information from different calendars.
14. Compare the months to identify periods of stress and comfort, as applicable.
Figure 9: Food availability in Cheri Dhedhertu

Source: Diagnostic survey of Cheri Dhedhertu, Yabelo woreda, Oromia Region. Action For Development.

Picture 11: Preparing a seasonal calendar with farmers and development agents
CHAPTER 7
PARTICIPATORY IDENTIFICATION OF PROBLEMS AND OPPORTUNITIES, AND THEIR PRIORITIZATION

7.1 Problem analysis

Description: Problem analysis involves the identification of problems, as well as their probable causes and possible solutions. The list of problems (from different groups identified through formal and informal surveys) needs to be clearly defined and prioritised. In order to identify appropriate solutions, a clear understanding of their causes is an important aspect of problem analysis. The process involves causal chain analysis to enable participants/community members to develop a systematic approach to identification of possible solutions.

One does not begin a PRA or PLA exercise by asking for problems from the community. A whole list of undifferentiated problems would be thrown at the team. Rather, the appraisal or learning exercises allow the investigators to understand the situation in the community; and then to work with them to diagnose the specific problems the team is best able to support/analyse.

7.1.1 The steps in problem analysis are as follows (see Figure 10)

1. Identify the problems specific to your area of interest or influence. Not only must problems be identified, but also their relevance to the community or particular group under study must be ascertained.

2. The problems must then be defined and substantiated. What type of problem is it? Is it something that can be tackled by resources and skills of the team and/or project? If not, who can be told about the problem and asked to assist in its solution?

3. Rank or prioritise those problems that are clearly defined and have sufficient evidence.

4. Analyse cause/s of problems.

This allows the interrelations between problems, causes and consequences to be illustrated and discussed. Often causes of one problem may be a consequence of another. If a number of problems have the same cause, a solution aimed at the joint cause may be most effective. The symptoms of problems are often seen as problem in themselves, and an analysis of the symptoms (such as land availability being a symptom of population increase) can identify these.

5. Solution identification and evaluation is the next step.

The casual chain analysis should help to identify entry points into the causes of the problem, where solutions may be suggested. The next step, also known as option generation, identifies one or more alternative solutions, or options, to each problem. It is important to study each option and evaluate it in order to verify who would benefit from the option and whether:

⇒ it addresses the real causes of the problem;
⇒ it is realistic (will the technology function?);
⇒ it is compatible with the farming system;
⇒ it is something farmers can do by themselves, (is it something they can test for themselves?);
⇒ it is something that farmers can do but requires some technical advice, or;
⇒ it is something that requires outside assistance.

The evaluation must also establish the resources required, including time, finances, personnel and responsibilities, and whether these are available.

7.1.2. Understanding the constraints

a) Problem analysis: For animal diseases, the causes and the effects of the disease are listed by farmers, and arranged in hierarchical order. This allows one to identify measures that might be taken to ameliorate the causes of the problem, rather than simply treating the symptoms.

b) Focused system analysis: Putting animal health at the centre, the biophysical and socio-economic factors affecting that constraint are listed and arranged in a 'spider' diagram that depicts their interactions. Again this can suggest ways in which some of the interacting factors could be tackled in order to reduce the constraint. The simplified diagram below illustrates this point.

Figure 10: Spider diagram to relate causes with a problem

![Spider diagram]

Nutrition
Grazing in swampy area
Animal Health
Breed
Housing
Workload
Access to veterinary services


c) Mini-surveys using PRA tools: These can be used to deepen understanding of the nature of the problem in several dimensions:

哈利 What is the origin of the problem? When and how did it arise? How did it develop?
哈利 What is the distribution of the problem? Who does it affect? How far does it spread?
哈利 What is the severity of the problem? Is it as bad every year?


d) Local knowledge: Having explored the nature of the problem from different perspectives, it is now time to bring out what farmers have to offer in terms of local knowledge. This might be explored under four headings:

哈利 Traditional knowledge (that handed down from father to son, mother to daughter, skilled artisan to apprentice, etc)
Local experimentation based on things people have seen elsewhere
Local innovation: new things being tried out locally
Coping strategies that are being implemented to minimise the impact of the problem

e) Are there major gaps in knowledge? If there are major gaps in understanding of the problem, it may be necessary to conduct a special study to investigate these.

7.1.3 Joining farmer's knowledge and scientist's knowledge

It is now time to bring local and technical knowledge together. The following sequence is suggested:

a) Farmers present the findings of the diagrams and mini-surveys described above;
b) Researchers explain the technical basis of the problem;
c) Discussion groups are formed to identify possible solutions from the perspectives of their participants;
d) The possible solutions are discussed in plenary, against criteria which would include:
   => Sustainability of any technology arising from the intervention
   => Cost of experimentation, and of the resulting technology
   => Versatility of resulting technology
   => Social and farming systems compatibility of the intervention

A caution!
The steps outlined would lead to much improved farmer participation in the identification of possible solutions that are based on a joint understanding of the problem, and a much wider choice of ways to address the problem. However, there may be limitations to the wholesale introduction of these 'extra' steps in the FPR process.

One limitation is the time that these steps would take.

Secondly, there is an attitudinal change required on the part of researchers and farmers before each side will accept that farmers have a major role to play in the identification of solutions to technical problems. As the relationship between farmers and researchers matures, and as researchers become more involved in participatory work, these attitudinal problems may be overcome.

It is suggested that a discussion on raising the quality of participation at this vital stage be included in PRA and POFT training.

7.1.4 Planning based on Analysis of Problems and Potentials (PAPP)

This approach also involves problem analysis that will lead to the development of proposals to address identified problems.
Existing situation = Problem

Influencing factors = Causes of the problem

Resources available to solve the problem = Potentials

Measures to be taken = Proposed project

| Problems identified during participatory situation analysis are written into this column in their priority order. They have to be carefully selected so that they reflect the real priorities of the community. Attention should be given to the interest of social groups with specific problems and needs. |
| List the assumed causes of the problems. For each problem more than one underlying cause can be identified. The causes of the problem can also be interrelated. |
| List the resources available in and outside the community that can be used to solve the problem, including natural resources, human resources and material resources. |
| Write down measures that should be taken to solve the problem. They can be targeted at solving the problem(s) listed in the first column or the causes listed in column 2, depending on the interrelation of the problems and the resources available. The measures to be taken are not yet specified as concrete activities, but are formulated as project or program titles. |

7.1.5 Ranking

The ranking (or prioritisation of options) can be done using the ranking methods described in Section 6.3.8.

![Picture 12: A group of farmers discussing the relative importance of their various problems](image)
CHAPTER 8

PARTICIPATORY SELECTION OF PARTICIPANTS AND TRIAL SITES

The selection of trial sites and participants can have a great influence on the validity and transferability of research results.

Socio-economic variables, like distance from markets or wealth status, should be taken into account when selecting participants. The resource status of a participant will influence her/his response to a technology, so it is important to know that status in order to be able to interpret comments and evaluations.

A key tool in the selection of representative participants is stratification, which means division into layers (e.g. rich, medium and poor for wealth ranking). Stratification of chosen communities is best done before participant selection, so that they can be chosen on a systematic basis against carefully defined criteria. For some trials it may be important to have strong representation from one group only; for others the trial objectives may require representation from all groups.

8.1 PARTICIPANT SELECTION

The strategy for selection of those to be involved relates to the objectives of the trial and whether the trial is of a contract, or collaborative, or consultative, or collegiate type. Options are:

A. Individual volunteers as participants.
   * The advantage is that it involves those who are willing.
   * Assumes that volunteers find the trial relevant. However, be aware that the volunteers may be motivated by expectations of other benefits (free inputs, prestige, first chance to exploit the benefits arising from the research etc.).
   * Suits contract or collaborative research if the plot is physically appropriate.
   * Farmers’ interest and commitment are essential if the trial is consultative or collegiate.

B. Extension workers select willing individual participants, often on the basis of personal contact with ‘progressive farmers’. The extension worker can often judge whether commitment exists or not. However, the following are drawbacks to this system of selection.
   * ‘Progressive’ may be an indication of a better resource base, and such farmers may not be representative of the circumstances of the majority of small farmers.
   * The illiterate, women and the poor risk being excluded.
   * If the technology is sensitive to resource levels, the results from the progressive farmers may be of limited applicability.

C. Purposely chosen participants.
Chosen from categories of farmers for whom the problem/trial is particularly relevant as shown through the farming systems problem analysis, mapping, gender analysis and wealth ranking.

Their agreement is necessary.

D. Selection by the farmers themselves, either from farmers' groups or by members of the communities. The following points need to be considered:

- Invite the farmers themselves or their communities to nominate trial participants.
- This gives ready access to an organised group and facilitates information sharing of results.
- There are generally better results from individual trial management with group discussion and evaluation rather than group management of trial.
- This approach risks excluding non-members.
- It is important to agree on the criteria for selection

**Points for Farmers and Researchers to Clarify**

What is the purpose of the trial?

What information or other benefits could result from the trial that would be of use to the farmer?

What commitments are required:
  - on the part of the farmer?
  - on the part of the researcher?

What is the trial procedure: how will the farmer take part?

What has been agreed between farmer and researcher:
  - site selection?
  - treatment selection?
  - dates and times for key activities (planting, weeding, etc.)?
  - which activities the farmer is responsible for, and which the researcher will carry out?
  - appropriate times for evaluation (by the farmer, by researchers?)
  - access to the trial by other farmers and outsiders

8.1.1 Procedure for selection of participants through the community

If it is decided that the most appropriate way of selecting participants is through their community, then the first step is to make a selection of participants using the tools described below. Then either make orientation visits to individuals or have a group meeting to discuss the purpose, objectives and requirements for the trials. The fields to be used should then be identified and agreements finalized between the people participating in the trial.
Community meeting/ group discussion

**Description:** A meeting can involve a large or smaller number, who focus on a specific problem or purpose. Smaller focus groups can be held of people who have a common concern (e.g. identified by gender or wealth category) where they can speak easily of their problems and experiences. The output from a focus group meeting can be presented to a larger group meeting, giving a 'voice' to those who are unable to speak in a large meeting.

**Steps:** Have a clear purpose: know the objective of the meeting. At this stage the purpose is to select participants who will take part in the process of proposed action (participatory on-farm trial - POFT). Participants can be of two types:

a) Farmers research groups (FRG)
b) Trial farmers

Define a & b and agree with the community the need for both or either of them.

Define the role and responsibilities of FRG and trial farmers with the community.

Set up and agree on criteria for selection.

Form a representative group (considering gender, wealth category, those who are affected by the problem identified and should benefit from the proposed solution) of farmers who will select participating farmers based on the criteria.

Let the representative group select the participating farmers.

Present the result for the community for approval and/or comment.

8.2 **Selection of trial sites**

Trial sites should reflect the conditions under which the results from the trials will be used. It may be necessary to select a number of contrasting conditions (e.g. different soil types or rainfall situations) in order to determine the robustness of technologies across different conditions.

For those experiments that are to be analysed using statistical techniques, it is important that the variability between sites is kept within limits that do not violate statistical assumptions.

When designing the experimental programme it is a good idea to ask what variables are important, and how these vary across the project area. This will allow you to include these in site selection criteria on a systematic basis.
Picture 13: Farmers and others waiting to join a large meeting of the community to select participants for an FPR trial

Picture 14: An organized meeting for selecting participants in progress

Picture 15: Farmers visiting fields to select sites for FPR trials
CHAPTER 9
PARTICIPATORY SELECTION OF TREATMENTS AND DESIGN OF TRIALS USING EXPERIMENTATION PRINCIPLES

Experimental design involves the identification of treatments, and deciding how these will be compared. By careful design, non-treatment variability can be kept to a minimum, thereby increasing confidence in the differences that are measured and recorded among treatments. Replications, identifying blocks, randomisation, and appropriate plot sizes and shapes can all help to reduce non-treatment variability as a proportion of overall variability (See Box below on the principles of on-farm trials).

9.1 PRINCIPLES OF ON-FARM TRIALS

Relevance: The topic(s) under test should be relevant to the priorities of local communities. These may also be of wider (e.g. regional or national) importance.

Simplicity: Trial designs should be simple enough for farmers to understand. If evaluation by neighbouring farmers is envisaged, then they should also be able to understand the layout and treatments easily.

Management and ownership: As with other considerations, this varies according to the participatory mode. For contract research the ownership is with researchers, although farmers may contribute to day-to-day management. At the collegiate extreme, ownership of the trials should rest squarely with farmers and/or their community, with researchers inputs being made only with the full agreement of the primary stakeholders.

Clear objectives: It is vital to clarify among participants who the trial is for, and what its aims and expected outputs are. Only then can the appropriate ownership, methodologies and management decisions be made (by the appropriate people).

Description of site and participants’ characteristics: The results of trials are a function of the environment in which they are conducted (e.g. yield of crops is affected by soil fertility and rainfall). Also a farmer’s comments about a trial will be coloured by that farmer’s financial circumstance and experience, as well as other factors. It is therefore important to characterise the farm and its circumstances.

Recording system: A recording system that is relevant to the objectives of the trial will need to be agreed among the participants. The proportion of qualitative (e.g. farmer comments) and quantitative (e.g. milk yield in litres/day) information to be recorded will depend on the objectives of the trial and the resources available. In some cases the farmer will be the main recorder of information, and in other cases researchers or extension field staff might visit to

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take data. It is important that each person involved is clear about his/her respective role(s).

**Training in methods/concepts:** For both farmer-led and researcher-led trials, the main objective is to make meaningful comparisons between alternatives (treatments). Whether the evaluation is to be carried out by farmers or researchers, confidence in the results of the experiment will be increased if basic experimentation principles are followed.

**Uniformity of site and operations:** The experimental site should be selected carefully to be as uniform as field conditions allow, and all operations (e.g. planting, weeding, harvesting etc.) should be done in the same way, and on the same date, for each treatment.

**Comparisons with control:** ‘Control’ treatments are a reference point against which other treatments can be compared. In the case of variety trials, this is often a local variety. In the case of fertiliser trials the control might be a treatment without any fertiliser added – or it might be the recommended fertiliser rate.

**Replication:** If a treatment is only tried in one place, then its performance may be good or bad because of the special conditions of that place (e.g. a good or bad water supply). It is therefore good experimental practice to repeat the experimental treatments in several places and find the average response of each treatment across several different sets of conditions.

**Randomisation:** This refers to the way treatment plots are arranged within the trial. If the arrangement is always the same, then this might build in an advantage or a disadvantage to some plots. An example might be a set of maize trials in which a certain treatment was always next to the road. This might suffer from loss of cobs to cattle or humans, which would affect its recorded yield. Therefore it is better to allocate each treatment in a random way (using random number tables) to reduce the risk of introducing this sort of bias.

**Plot size and shape:** The size of plots is governed by many factors. From the farmer’s point of view these may include:

- availability of suitable land, planting materials or labour;
- the size of plot that farmers consider adequate to give a realistic assessment of performance;
- the minimum size that can be managed effectively (e.g. where draft animals are used)

From an experimental point of view it is also important that the plot should be big enough to ensure that the treatments used in any one plot do not affect neighbouring plots (e.g. where a sprayed insecticide is used, or where numbers of irrigations are different between plots).

**Analysis:** Before starting any trial, it is important to have thought through who is going to analyse the results, *how* they will be analysed and *when*. This may be, for example, by researchers using statistical analysis, or it may be by farmers in a group workshop.

As with conventional research, the purpose is to compare the effects of treatments, but in FPR/E farmers should be fully involved in making decisions
about the number and types of treatments, the number of replications, the size and shape of plots, and the need for randomisation. Some of the participant farmers (and some extension staff) will be new to the principles of experimentation, so some training will be necessary before they can make a meaningful input to trial design.

9.2 HOW TO CONDUCT PARTICIPATORY TRIAL DESIGN PLANNING

1. Conduct a field-based training workshop or experience-sharing visits on experimental design for participants.

2. Plan a meeting to discuss the trial’s objectives, and agree on treatments to be included, the size and number of experimental units, and the data to be gathered.

3. Field observation to assess the extent of variability within and between trial sites, and factors contributing to this variability (i.e. site characterization).

4. Discuss the layout, and agree how it should be put on the ground, taking into account the specific site conditions.

Table 15 and the following diagrams show that different trial designs are appropriate to different types or ‘modes’ of participatory research.

Table 15: Trial designs for different modes of participatory research

<table>
<thead>
<tr>
<th>Contract</th>
<th>Design complexity</th>
<th>Data type</th>
<th>Decisions by Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complex; e.g. RCBD</td>
<td>Quantitative</td>
<td>Researcher layout and key operations; farmer labour on contract</td>
</tr>
<tr>
<td>Consultative</td>
<td>Varies; usually 2-6 treatments, may be replicated on same farm</td>
<td>Mixed: quantitative, with some farmer information.</td>
<td>Researcher, after consulting farmer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Researcher layout and key operations; farmer labour under researcher’s instructions.</td>
</tr>
<tr>
<td>Collaborative</td>
<td>Simple; usually 2-4 plots</td>
<td>Mixed, with emphasis on farmer evaluation.</td>
<td>Made jointly between researcher and farmer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Farmer management.</td>
</tr>
<tr>
<td>Collegiate</td>
<td>Simple</td>
<td>Qualitative, e.g. pair-wise comparisons using farmer’s criteria.</td>
<td>Farmer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Farmer management.</td>
</tr>
</tbody>
</table>

Examples of on-farm trial designs

Figures 11 (a)–(e): Examples of on-farm trial designs.

Figure 11 (a) is about a very simple design, in which an area is planted to a new variety and this is compared to the local variety growing all around it. This may
be similar to a farmer's own experimentation. There is no replication, unless this same experiment is repeated in other farmer's field.

In Figure (b) the layout has been refined a little, so that the new variety (or varieties) and the local variety are in plots.

In Figure (c) the layout known as a 'diamond design' has been used. This allows two variables to be compared, and the interaction between the two variables studied, giving a large amount of useful information from a small area. In this case the two variables are variety (new and local) and fertiliser type (fertiliser and local manure). This layout is simple enough for experimenting farmers and their neighbours to understand and evaluate.

Figure (d) is an example of a varietal trial comparing six varieties. Normally one of these would be the 'control' variety against which the performance of the others would be compared. In many cases this control variety would be the local variety used and well known by farmers, or the variety recommended by the extension services. Normally this trial would be repeated on several farmers' fields in order to be sure that the performance of each variety was not due to favourable conditions in one or two places. Six varieties are usually about the maximum for easy comparison using farmer evaluation (e.g. on farmer's field days using ranking methods).
Figure (e) is a much more complex design. It is a randomised complete block design. The treatments (A-F) are repeated three times (in replications or blocks). In each block the treatments have been allocated randomly to their plots using random number tables. This type of design requires careful statistical analysis, and is too complex for farmer evaluation without careful explanation (perhaps to a small group of experimentally-minded farmers).

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>C</th>
<th>F</th>
<th>B</th>
<th>D</th>
<th>H</th>
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</thead>
<tbody>
<tr>
<td>H</td>
<td>F</td>
<td>G</td>
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<td>A</td>
<td>E</td>
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<tr>
<td>D</td>
<td>B</td>
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<td>E</td>
<td>B</td>
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<tr>
<td>G</td>
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<td>D</td>
<td>H</td>
<td>F</td>
<td>G</td>
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</tr>
</tbody>
</table>

Statistical analysis might be required by some stakeholders, such as academic institutions (Universities, Research Centres etc.), varietal release bodies, or credit agencies. The design and management of the trial must take this into consideration, and suitable data collected. Researchers will then carry out analyses such as analysis of variance on quantitative data (e.g. on yield). There are also an increasing number of statistical and analytical tests that can be carried out on qualitative information. These tests require the assistance of a specialist from the initial design of the trials and monitoring system through to the final analysis and interpretation of results.

9.3 Selection of Treatments

Some criteria for the selection of treatments

1. The degree of probability that the technology will work, make sense to the farmer and be acceptable;
2. Potential benefits in terms of profitability, reduced risks, equity, reduced drudgery and sensitivity to gender issues;
3. Ease of adoption; compatibility with the farming system and local culture; availability of institutional support to sustain it; degree of simplicity; and how obvious the advantages are;
4. Ease of investigation in terms of testing with farmers, costs, complexity and duration; and
5. Sustainability of the solution; effect on the environment and self-sufficiency.

Adapted from Ann Stroud: Conducting on-farm experiments.

Selecting treatments depends on the objective of the research under question. Particular attention is needed to ensure that treatments are appropriate to the social, economic and biophysical situation of the target farming families. In FPR/E, Indigenous Technical Knowledge is an important factor that needs to be considered in selecting treatments.

1. Define the objective of the research trial with participants.
2. Prepare a checklist for selecting treatments (see example in the box) when meeting with participants.

3. Consult literature and other professionals.

4 Hold meeting with target groups to discuss criteria for selecting treatments. This meeting should clarify the types of treatments, their management, the potential for their use by the target group after the trial is completed, including their availability and costs.

N.B. Pair-wise ranking, matrix scoring/ranking are useful tools during the group discussion.

Checklist for treatment selection

1. **Farmer practice and preferences**
   - Current management practices affecting the aspect being investigated
   - Current level of inputs being used and their availability
   - Important crop-livestock interactions
   - Labour availability for the new technology and other activities competing for labour
   - Farmer decision-making criteria that may affect the use of the technology
   - Gender sensitivity of the technology

2. **Economic performance**
   - Minimum amount of crop needed for sale, storage or consumption;
   - Maximum level of inputs allowable, considering production costs, including labour;
   - Degree of risk reduction
   - Demand and marketability of the product; and
   - Availability of inputs and support services

3. **Agronomic performance**
   - Response of crop or animal to different types and levels of inputs, pests and environment
   - Expected interactions between various actors for crop (including intercropping) or animal production, such as fertilizer, spacing and weeding; and
   - Expected performance of the treatments compared with local practice.

*Adapted from Ann Stroud: Conducting on-farm experiments*
Picture 16: Farmers and FPR staff monitoring the progress of a trial in a farmer's field

Picture 17: Evaluation of a forage grass trial and seed from another trial by farmers
CHAPTER 10
PARTICIPATORY MONITORING AND EVALUATION OF THE TRIALS

Monitoring and evaluation (M&E) of the performance of on-farm trials can be carried out by farmers, extension staff, researchers, or any combination of these three groups, depending on the objectives of the trial and the arrangements that have been agreed. Participatory monitoring and evaluation (PM&E) is where all three stakeholders regularly join together to make the monitoring and evaluation.

PM&E is part of a family of participatory action research. It emerged in response to concerns that the results of program and project evaluations are usually under-utilized and an appreciation that the participation of stakeholders will enhance the use of the results. From various experiences, it was concluded that involving people affected by the problem in evaluation will increase the likelihood, quality, and relevance of the evaluation outcome, and will also enhance the effective allocation and utilization of scarce resources. Through early involvement of all stakeholders, some wasteful practices can be avoided. Furthermore, people on the receiving end are the best judges of whether or not benefits have been produced.

10.1 PROCEDURE FOR THE MONITORING OF ON-FARM TRIALS

1. Set up operational calendar for monitoring activities.
2. Share responsibilities and clarify the roles accordingly.
3. Layout the field and allocate treatments to units randomly.
4. Design simple and clear data recording mechanisms that can be handled by participants.
5. Organize cross visit to the trials among trial farmers and other non-trial farmers of same target group during the course of trial.
6. Record the process and opinions of participants involved in the cross visits.
7. Use scoring/ranking to initiate early analysis of treatment performance, which together with recorded data and opinions, can be fed into final evaluation of the trial.
8. Make sure both men and women take part in the process.

Often data is collected throughout the trial, and this is added to at an open day or field day to which neighbours and others are invited. These open days are a good opportunity to record, in a systematic way, the opinions of different groups of visitors (e.g. men and women, richer and poorer farmers, farmers and technicians).

On-farm trials can be an important focus for discussion and exchange of information between extension workers and farmers over the growing season.
Discussions and monitoring of performance can guide planning for the next stages of on-farm research and dissemination.

It is important to match the scale of data collection and observations to the capacity of farmers and research/extension staff to record and analyse the information.

Exchange and discussion of results is important in all research 'modes'. Thus the results from all on-farm trials should be shared with the collaborating farmers, and also with the communities in which they are living.

10.2 Participatory evaluation and analysis of the trials

10.2.1 Methods for Exploring Farmers' Evaluations

Participatory evaluation and analysis focuses on assessing the results from treatments used in the participatory trials. It should be seen as a process, which develops progressively right from the very beginning of the trial. It should also involve members of the target group (those who will use the technology) in addition to the trial farmers, extension workers and researchers.

The following are methods for exploring farmers' evaluations of on-farm trials:

- Discussions between researchers and farmers on trial sites
- Farmers workshops
- Field days
- Farmer to farmer visits
- Farmers visits to research station
- Focus group discussions with local 'experts'
- Consumer testing - taste panels and ranking of scores
- Preference ranking - chooses between paired alternatives, then all options are ranked
- Matrix analysis - choices or comparisons are ranked against valued characteristics.

10.2.2 Procedure for the evaluation of on-farm trials

1. Organise evaluation sessions with individual trial farmers. A checklist should be prepared for these individual sessions, so that a standard set of questions is asked of all participating farmers. Farmers should also be encouraged to make spontaneous comments not covered by the checklist. These should also be recorded.

2. Organise a group evaluation session, involving all farmers who have been conducting the trial or with Farmers Research Groups.

Before such a meeting, it is useful if the researchers bring together quantitative and qualitative information from different replicates of the trial. This could involve tabulating results from the individual evaluation sessions held with farmers, and trying to account for differences between farmer's evaluations. The tabulation of results should be simple, and relevant to the literacy levels of those participating. An example is shown below, with a qualitative assessment for different characteristics shown as smiling or sad faces for Farmer 1.
Table 16: Tabulating farmers’ evaluation criteria for different varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Farmer 1</th>
<th>Farmer 2</th>
<th>Farmer 3</th>
<th>Farmer 4</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Growth: ☑</td>
<td>Growth: ☑</td>
<td>Growth: ☑</td>
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<td>Market price: ☑</td>
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<td>Market price: ☑</td>
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<tr>
<td>Variety 2</td>
<td>Growth: ☑</td>
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<td>Growth: ☑</td>
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<tr>
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<td>Yield: ☑</td>
<td>Yield: ☑</td>
<td>Yield: ☑</td>
<td>Yield: ☑</td>
</tr>
<tr>
<td></td>
<td>Storage: ☑</td>
<td>Storage: ☑</td>
<td>Storage: ☑</td>
<td>Storage: ☑</td>
<td>Storage: ☑</td>
</tr>
<tr>
<td></td>
<td>Cooking: ☑</td>
<td>Cooking: ☑</td>
<td>Cooking: ☑</td>
<td>Cooking: ☑</td>
<td>Cooking: ☑</td>
</tr>
<tr>
<td></td>
<td>Input cash costs: ☑</td>
<td>Input cash costs: ☑</td>
<td>Input cash costs: ☑</td>
<td>Input cash costs: ☑</td>
<td>Input cash costs: ☑</td>
</tr>
<tr>
<td></td>
<td>Labour: ☑</td>
<td>Labour: ☑</td>
<td>Labour: ☑</td>
<td>Labour: ☑</td>
<td>Labour: ☑</td>
</tr>
<tr>
<td></td>
<td>Market price: ☑</td>
<td>Market price: ☑</td>
<td>Market price: ☑</td>
<td>Market price: ☑</td>
<td>Market price: ☑</td>
</tr>
</tbody>
</table>

3. Organize evaluation sessions for non-participating farmers, at which trial farmers present the results, in order to incorporate their opinion.

4. Organize post harvest assessment by men and women of selected treatments (e.g. for taste, storage qualities, market price etc.).

5. Use ranking/scoring tools for evaluation.

6. Statistical analysis might also be required by some stakeholders, as described earlier under randomised complete block design (RCBD) in section 9.1.
Picture 18: Dissemination of results through farmers presenting their evaluations in a training workshop (top picture), through cross visiting where farmers and professional visit each others trial sites (middle picture) and through local radio programmes – a farmer being interviewed in the bottom picture.
CHAPTER 11
DISSEMINATION AND UPTAKE OF THE RESULTS OF PARTICIPATORY RESEARCH

Extension is a process which:
⇒ Helps farmers to analyse their situation;
⇒ Helps farmers to become aware of their problems;
⇒ Increases farmer's knowledge, develops insight into their problems, and helps to structure their existing knowledge;
⇒ Helps farmers acquire specific knowledge so they can act on possible alternatives;
⇒ Helps farmers to make responsible choices, which in their opinion are optimal for their situation;
⇒ Increases farmer's motivation to implement their choices; and
⇒ Helps farmers to evaluate and improve their own opinion-forming and decision-making skills (Vandem & Hawkins).

Extension services can also help farmers to access inputs, such as seed or agrochemicals.

The first section discusses dissemination, and the second other aspects of uptake.

11.1 DISSEMINATION

Dissemination of the results of trials is an important component of both research and extension. It refers to the process of communication involved in the diffusion or spread of innovations (including indigenous knowledge and skills) to various research and extension clients.

Who are the audiences (clients) for dissemination outputs?

A range of audiences needs to be kept informed of the progress and results of the research process. These include:
⇒ Project partners
⇒ Individual farmers and farming Communities
⇒ Government research, extension, training institutions
⇒ NGOs
⇒ Policy makers (Government)
⇒ Donors

These audiences vary greatly in their literacy, their access to different media, and the type of information that they require. One therefore needs to select the dissemination medium, style, language and format accordingly.
What materials and media are appropriate for the different audiences?

The following is a list of different extension mechanisms that could be used for dissemination. Each has its own strengths and weaknesses. No one mechanism can be effective on its own:

- Demonstrations/Open days/Field days
- Agricultural shows
- Exposure tours and cross visits for awareness raising
- Training days and courses
- Reports
- Extension leaflets
- Videos (especially those using farmers as the narrators)
- Local radio (in local language)
- Presentations at workshops and meetings
- Guidelines/manuals/flyers
- Articles in journals and magazines
- T.V. (documentaries, news clips)
- Newspaper articles
- Development journals and newsletters
- Drama/song/puppet theatre
- Posters

11.2 Participatory Extension Approaches

It is now becoming clear that technical changes are most readily accepted when the population has participated in their development. We have seen how farmers can participate in research. They can be equally effective in extension.

Participatory extension approaches (PEA) are a way of improving the effectiveness of rural extension efforts by government agencies, NGOs and other organizations engaged in rural development. They have been successfully applied in Zimbabwe and many other countries in the South and North (Hagmann et al, 1998).

<table>
<thead>
<tr>
<th>Characteristics of participatory extension approaches (PEA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>They integrate community mobilization for planning and action with rural development, agricultural extension and research.</td>
</tr>
<tr>
<td>They are based on an equal partnership between farmers, researchers and extension agents who can all learn from each other and contribute their knowledge and skills.</td>
</tr>
<tr>
<td>They aim to strengthen rural people's problem-solving, planning and management abilities.</td>
</tr>
<tr>
<td>They promote farmers' capacity to adapt and develop new and appropriate technologies/innovations (usually these are agricultural technologies and practices, but they can also be in social institutions, in health, water and sanitation, and other rural development domains).</td>
</tr>
</tbody>
</table>
They encourage smallholder farmers to learn through experimentation, building on their knowledge and practices and blending them with new ideas. This takes place in a cycle of action and reflection which is called 'action learning'.

They recognise that communities are not homogeneous but consist of various social groups with conflicts and differences in interests, power and capabilities. The goal is to achieve equitable and sustainable development through the negotiation of interests among these groups and providing space for the poor and marginalised in collective decision-making.

The role of the extension agent is to facilitate this process. Researchers also have a role. They assist farmers and extension agents in the joint experimentation and learning process and contribute their knowledge of technical options to find solutions to the problems identified by farmers.

Adapted from Hagmann et al., 1998

As noted above, participatory extension approaches are a way of improving the effectiveness of rural extension efforts by government agencies, NGOs and other organizations engaged in rural development. Farmers get knowledge and advice from a range of sources:

Figure 12: Multiple sources of farmer's knowledge

It is important to understand the different communication networks that farmers use, and to strengthen them. There is a big movement in some countries in support of 'farmer-to-farmer' dissemination, in which farmers are encouraged and supported to act as local extension agents.

It is also important to remember that research and extension should be happening together and not separately. Thus the on-farm trials should also act as demonstrations, and as nuclei for the spread of technology. The community
should be involved in the trials, so that as soon as a new technology or innovation is successfully demonstrated by the trial, it is known throughout the community and can be readily adopted by that community.

The following box suggests some principles for a dissemination strategy. Every project or program should develop such a strategy, complete with dissemination activities early on in its history.

**Cornerstones of a Dissemination Strategy**

- The main objectives of the strategy are to inform, share with and influence a range of audiences.
- Dissemination is a reciprocal learning process.
- Successful dissemination is dependent on progress in the other project outputs that generate, document, monitor and evaluate project experiences, and also provide a receptive environment for dissemination products.
- Good project plans are a prerequisite for successful dissemination.
- Good M&E and careful documentation are the foundation for good dissemination products.
- Projects should ensure that they develop good resource centres so that sources of information are available for inclusion in dissemination products.
- Dissemination is an ongoing activity that starts as soon as useful information is available. Processes go at different speeds, and the appropriate time for dissemination will be determined on a case-by-case basis.
- Information should be shared as soon as sensible, and should not wait until the end of the project.
- Audiences will not be convinced to adopt new things from one message conveyed through only one medium. It is necessary to use a variety of media, and influence audiences in a number of different ways on a number of different occasions.
- Working with other partners to develop dissemination products will make those products stronger, and they will have more credibility with audiences.
- Joint authorship/development of dissemination products with project partners will strengthen their ownership and capacity, and also give greater credibility to the products.
- Different audiences require different types of dissemination products. Be selective, and use those products that will give the best return to resources.
- Find out what type of dissemination products (format, content, style) audiences need and prefer.
- Products should be simple and user friendly.

---

3 This Table was developed by FARM-Africa projects in South Africa
11.3 UPTAKE ACTIVITIES

Successful uptake of research results is complex, involving the research method itself, the nature of the technology promoted, policies at local, municipal and national levels, institutional capabilities and resources, linkages among research, extension & farmers, access to materials, advice and markets, and a vast range of dissemination media and extension tools. It is wider than the farming system, requiring an understanding of opportunities and constraints at biophysical, socio-economic, institutional and political levels (Pound, 2000).

Tools and methods

Various mechanisms that create an environment to support and stimulate uptake can be applied. However, the factors affecting uptake of any one technology are different from those for any other; therefore each technology, location and target group must be considered separately, and methods and tools selected accordingly.

Farmers' access to inputs, technologies, markets and credit can influence uptake, and limitations imposed by lack of access should be assessed, and if possible overcome.

There may be limitations in access to, or the quality of, technical assistance (advice and training), which may require corrective activities. For instance, if the government extension service is not able to cope with the demands for advice and training, then alternatives (e.g. NGO activities or the development of farmer-to-farmer networks) should be considered.

More difficult are limitations caused by government or local policy. Often these take some time to change, and some way of reducing their impact may have to be identified.

Tools

- PRA tools can be used to conduct participatory surveys of the uptake environment with farmers.
- An inventory of the mandates, interests, methods, capacities and limitations of institutions involved in up-scaling can assist in understanding the overall uptake situation and help identify areas that need strengthening. Such an inventory can usefully feed into the review process described in element 11 below, leading to action plans to correct deficiencies.

Common limitations to uptake

Inputs

It is common for participatory research to identify varieties of crops that are suitable for an area. However, all too often the seed of the identified variety is not available to the trial farmers or their neighbours and friends. This slows down the uptake process, and may lead to disillusionment with the whole FPR/E process. It is, therefore, very important to ensure that any variety that is tested is available to farmers in sufficient quantities if selected. This can be achieved through liaison with seed companies, or through getting support for farmers to multiply seed. The same principle applies to any inputs that form part of trial
treatments, such as fruit-tree seedlings, farm implements, livestock breeds etc. If the inputs cannot be reliably sourced commercially or through the government, then they will have to be produced locally by farmers themselves. This will require facilitation, and some material help from government and/or NGOs.

Markets

Often participatory research only looks at the production aspects of a technology, and ignores the post-harvest and marketing aspects. In many instances farmers do not adopt a technology because they are not confident of the market, or do not have information on the processing of the field product. We should pay more attention to the size, location, reliability and profitability of the market for produce, and the opportunities for processing and storage that could add value to the primary product.

Strengthening local institutions

There are many local institutions that can assist the activities mentioned above (input supply and marketing/processing of products). These institutions might need strengthening with organisational, administrative or technical skills in order to become effective. In some instances it will be necessary to facilitate the creation of new local institutions. In this case it is important that our role is only that of facilitator, not leader, as the ownership of such institutions must remain with the communities.

Picture 19: Farmers sharing their experiences amongst themselves
CHAPTER 12
PARTICIPATORY REVIEW AND REFLECTION TO IDENTIFY IMPROVEMENTS TO METHODS AND TECHNOLOGIES

12.1 BACKGROUND

The generalised cycle for any project or programme is shown below:

Figure 13: Generalized project or programme cycle

The review component is an integral part of the overall process. Where possible, all project partners and stakeholders should take part in the review, which should assess:

- the technologies being developed, and their impact
- the effectiveness and efficiency of methods of research and dissemination.

The review process will help us learn more effectively from the experience and perspectives of different stakeholders through their participation in the process.

The review process is a management tool that will help to improve the performance of the program.

Questions to be asked during the review include:

- Are the objectives of the project or programme clear, and are they still relevant to the priority needs of the intended beneficiaries?
- How appropriate are the approaches and methods being used to achieving the objectives of the project or programme?
- How appropriate are the technologies being generated by the project to achieving the objectives of the project or programme?
- Are the technologies within the reach of those who need them?
- Are the technologies accepted or not? By whom? Why are they accepted by some groups or not accepted by some others?
- To what extent are they used?
- What has their effect and consequences been?
- What has the progress towards the desired project / programme goals been?
The review process should also look forward, by developing an action plan for the future, which incorporates the improvements identified as necessary by the review.

12.2 The review process

The following are suggestions for different review methods:

- Workshops incorporating group discussions and experience sharing. They can also include presentations, sharing of other materials (written, audio-visuals), and field visits.
- Review meetings at various levels, with each group of stakeholders separately and/or in combination, to discuss their individual and common feelings/reflections before, in between and after they had started a particular activity and/or sequences of activities.

Some of the tools that can be used are:

- Force-field analysis
- SWOT (strengths, weaknesses, opportunities, threats) analysis
- Peer review visits

12.2.1 Force Field Analysis

Force Field Analysis (FFA) is a very effective tool for analysing the enabling and inhibiting factors of a particular set of problems or issues. It is also known as 'Push and Pull' analysis. It also clearly indicates the intensity of different factors in the enabling/inhibiting process. The chart below and figure 14 described the force field analysis process.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To develop a practical strategy for change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Analysing existing situation</td>
</tr>
<tr>
<td></td>
<td>Agreeing goals for change</td>
</tr>
<tr>
<td></td>
<td>Identify supporting and constraining factors</td>
</tr>
<tr>
<td></td>
<td>Outlining a practical strategy to achieve change</td>
</tr>
<tr>
<td>Materials</td>
<td>Flip-chart paper with 'force-field' sketched out</td>
</tr>
<tr>
<td></td>
<td>Pens</td>
</tr>
<tr>
<td></td>
<td>Post-its</td>
</tr>
<tr>
<td>Approach</td>
<td>1. Brainstorm characteristics describing 'where we are now'; agree description; place in lower left box.</td>
</tr>
<tr>
<td></td>
<td>2. Brainstorm characteristics describing 'where we want to be in x years time'; agree description, place in upper right box.</td>
</tr>
<tr>
<td></td>
<td>3. Brainstorm factors promoting the change, and place in upper left area as if drawing the change forward; list activities to support these.</td>
</tr>
<tr>
<td></td>
<td>4. Brainstorm factors constraining the change, and place in lower right area as if holding process back; list activities to overcome these.</td>
</tr>
<tr>
<td></td>
<td>5. Brainstorm steps in the process of achieving change; arrange in local sequence; place in order between lower left and upper right boxes.</td>
</tr>
<tr>
<td></td>
<td>6. Use the Force-field analysis as a basis for planning future activities.</td>
</tr>
</tbody>
</table>
Adapted from PNRMR course

12.2.2 SWOT (strengths, weaknesses, opportunities and threats) analysis

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To develop a practical strategy for change in which strengths, weaknesses, opportunities and threats are analysed.</th>
</tr>
</thead>
</table>
| Process | Brainstorm the good things, and assign them to the 'strengths' box or the 'opportunities' box  
Brainstorm the bad things, and assign them to the 'weaknesses' or 'threats' box  
Try to turn weaknesses and threats into opportunities for improvement  
Use the SWOT analysis as a basis for planning future activities |
| Materials | Flip-chart paper with SWOT chart outline  
Pens and cards, or 'post-its' – cards or stickers that can be written on and pinned up on a chart |

Table 17: SWOT Analysis format

<table>
<thead>
<tr>
<th>Past</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td><strong>Future</strong></td>
</tr>
<tr>
<td>Strengths</td>
<td>Opportunities</td>
</tr>
<tr>
<td>Successes</td>
<td>Ideas</td>
</tr>
<tr>
<td>Advantages</td>
<td>Wishes</td>
</tr>
<tr>
<td>Achieved objectives</td>
<td>Possibilities</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td><strong>Threats</strong></td>
</tr>
<tr>
<td>Weaknesses</td>
<td>Hindrance</td>
</tr>
<tr>
<td>Failures</td>
<td>Resistance</td>
</tr>
<tr>
<td>Difficulties</td>
<td>Opposition</td>
</tr>
<tr>
<td>Bottle necks</td>
<td></td>
</tr>
</tbody>
</table>

Figure 14: Force-Field Analysis

3. Positive influences for change  
- Activities supporting these

2. WHERE WE WANT TO BE IN FIVE YEARS TIME

5. Steps to get from (1) to (2)

4. Negative influences preventing change  
Activities overcoming these

1. WHERE WE ARE NOW?
12.2.3 Peer Review visits

What are these and how do they work?

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To visit an activity with other stakeholders to review methods, progress and impact, and to make recommendations for change.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Select activity for review. Select relevant stakeholders to conduct review. Draw up the objectives of the review with stakeholders. Decide roles and responsibilities between members of the review team (e.g., reporting). Draw up checklists that will help guide questions relevant to the objectives of the review. Implement the review and agree deadline for the report. Ensure all stakeholders get copy of the report.</td>
</tr>
</tbody>
</table>

N.B. This sort of peer review is most usefully carried out immediately before a review workshop, so that the results of the peer-review visit can be presented at the workshop.

12.3 Reporting and Dissemination

If results from monitoring and evaluation (M&E) are to be useful, they have to be shared with others who can make use of them. Too often reports are buried in drawers, end up on shelves, or are submitted too late to stimulate interest or be useful. During a feedback or reflection process the stakeholders of a project or programme join together to assess progress and discuss future action. Only if all actors are committed to the following process, will participatory monitoring and evaluation (PM&E) be useful.

Figure 15: From Monitoring to Action
12.3.1 Feedback to other components of the research, extension and input-supply systems

Objectives

The general objective is to provide information on technologies generated and impact achieved so that development institutions can incorporate these into their programmes (e.g. incorporate farmer-generated technologies into PADETES).

More specifically for FPR/E, the objective is to share lessons learned through the process in order to:

- Replicate the successes;
- Learn from mistakes, problems and solutions, and thereby influence the existing research and extension process in different ways;
- Improve planning, implementation, management and impacts;
- Assist decision and policy making;
- Promote the exchange of information, thereby strengthening linkages among stakeholders (PM&E training, Issac Bakolo)

Methods and tools

- Workshops/meetings/forums at various levels, using various tools (PRA and others) and methods (group discussion, field visits, written materials, audio-visuals) in appropriate combinations.
- Reports of trial results could be circulated to all concerned stakeholders.
- Case studies.
- Articles to newspapers, TV, radio
- Folk media/role plays
- Photos and videos
- Networks and newsletters

12.3.2 Feedback to donors and policy makers

It is important that politicians, decision makers and donors are included in the planning and dissemination components of the project implementation cycle. They have the potential to help the project or to severely constrain its progress, depending on their impression of its worth. We must also look for opportunities to influence policy, as changes in policy can have a wide-ranging impact on our target beneficiaries and on the success or failure of our wider objectives.

Objectives

- To influence policy and decision makers
- To generate support for FPR

Tools

- Field visits of VIPs to meet farmers and to see the impacts for themselves.
Advocacy publications (e.g. leaflets that present a series of case study success stories of FPR/E)

Written articles in newspapers and other widely read media

Videos and TV programs

Radio programs
REFERENCES


Hagmann, J, Chuma E, Murwira E and Connolly M, 1988. Learning together through participatory extension; a guide to an approach developed in Zimbabwe. Free of charge from: Universum Verlag (Germany) through the email address: horst-dieter.herda@universum.de


FARM (Food and Agricultural Research Management) Africa is a non-governmental organization registered as a charity in Britain. Its aim is to reduce poverty by enabling farmers and herders to make sustainable improvements to their well being through more effective management of their renewable resources. All of its projects aim to build the capacity of people and local institutions in Africa rather than to develop parallel structures. Since 1991, FARM Africa has been running the Farmers' Research Project in Southern Ethiopia. The aim of the project is to test, and, if successful, to promote Farmers' Participatory Research (FPR). This is defined as agricultural research in which the farmers play leading roles in identifying, designing and generally making decisions about the research as well as in carrying it out and evaluating it. This book presents the findings of the project and the possibilities for incorporating peasant farmers in the normal pattern of research and development efforts.

INSTITUTE FOR SUSTAINABLE DEVELOPMENT
A member of the Third World Network

The Institute for Sustainable Development is working for awareness of the central role played by rural communities in developing sustainable agricultural systems which incorporate the best from traditional and modern technologies. An essential first step in working with local communities and farmers is to get a better understanding of the physical and social environment. Participatory Rural Appraisal (PRA) has been developed so this collection and analysis process involves all the stakeholders — farmers, the local agricultural professionals and others. PRA also identifies problems with the farmers so that finding solutions to these problems is also a participatory pursuit. And that is the rationale behind Farmers' Participatory Research which has been developed and institutionalised by the FARM Africa team and its partners and farmers in the Southern Nations, Nationalities and Peoples Region of southern Ethiopia. This handbook is a first attempt to systematically describe the steps needed for an effective FPR programme. We hope those who use this book will comment on it and enable us to produce a fuller and more user-friendly second edition.