

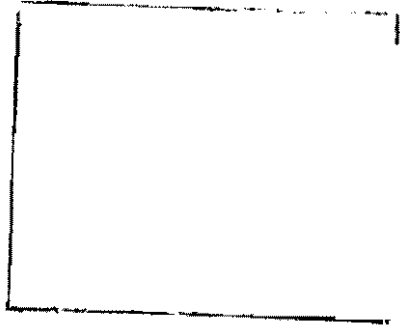
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**Evaluation of Participatory Approaches for Responsive Research & Development in Ethiopia: Success factors**

By

**Tilahun Amede<sup>1</sup>, Habtu Assefa<sup>2</sup>, Asgeill Dibaba<sup>2</sup>, Gemechu Keneni<sup>2</sup>, Kindu Mekonnen<sup>2</sup>, Agaje Tesfaye<sup>2</sup> and Solomon Jebessa<sup>2</sup>**

<sup>1</sup> **African Highlands Initiative/ International centre for Tropical Agriculture**  
<sup>2</sup> **Ethiopian Agricultural Research Organization**



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### **Abstract**

Coordinated formal efforts to generate technologies for enhancing agricultural development in Ethiopia was mainly rooted in formal research and development institutions up to very recently. A number of improved technologies have been generated with the efforts made so far and the superiority of some of the technologies over the traditional practices has already been proved, at least for the major commodities. However, there is evidence showing that technologies developed on-station were not always consumed by farmers, partly because they were designed and evaluated without appreciating the socio-economic set-up and variability of end-users. Even though the concept of PR approach is not yet well developed in Ethiopia, there are a number of efforts at pilot levels that could serve as learning ground. Cognizant of the need to make research more effective and responsive EARO in consultation with AHI took a step in assessing the efforts and initiatives that have been made in Ethiopia so far in the area of PR. Eight different local PR experiences were assessed using various M&E tools. These include the African Highland Initiative (AHI), Participatory Plant Breeding (PPB) project (Awassa), Joint Vertisol Project (JVP), Participatory Research for Integrated Agro-ecosystem Management (PRIAM), Participatory Plant Breeding (PPB) project (Melkassa), Farmers Participatory Research (FPR) Project (FARM Africa, Awassa), Cool Season Food and Forage Legumes Project and Integrated Pest Management. Data was collected through formal and informal intensive discussion of the team with farmers, researchers, participated governmental and non-governmental institutions, institution leaders and key informants. The synthesis results indicated opportunities on how to make conventional agricultural research more effective and impact-oriented. From the successful participatory research effort there was an improvement in the internal and external efficiency of research systems and system-compatible technology generation and technology dissemination processes. PR approaches brought up important impacts and strengths at various scales, depending on the degree of participation of stakeholders, duration of the study, amount of finance of the project, institutional support and market to the products.

## INTRODUCTION

Agricultural research in Ethiopia has been playing a vital role to improve Agricultural productivity and minimize resource degradation in the last 30 years, though the outputs were not keeping pace with the growing population pressure that caused a huge gap between supply and demand, and put a considerable pressure on land-based resources. Coordinated efforts started with the establishment of the Institute of Agricultural Research (IAR) (now Ethiopian Agricultural Research Organization, EARO) in the mid 1960s. However, agricultural research and development in Ethiopia, like many other countries, has been mainly rooted in formal research and development institutions. A number of improved technologies have been generated with the efforts made so far and the superiority of some of the technologies over the traditional practices has already been proved through the nation wide extension package program at least for the major commodities.

It is generally believed that conventional research approaches have tried to address the major research problems facing resource-poor farmers. However, there is a clear feed back from the end-users that the technologies developed by researchers on station were not always consumed by farmers. The potential reason for less-adoption and poor dissemination of technologies was that earlier used approaches, which were non-participatory and discipline-based, hardly considered the socio-economic set-up of end-users. As a response, research has moved from on-station focus to Farming System Research (FSR), where system theory is applied and farmers are taken into account. In FSR the researcher lead the research process with some involvement of farmers as informants. It continues to recognize statistically significant results only and leaves the scaling-up processes to the extension officers. In recent years, there is an interest to shift from FSR to Participatory Research (PR), whereby the stakeholders, mainly the farming community, participate in decision making from the stage of identification of problems through experimentation to utilization and dissemination of research results. It refers to the active participation of farmers and other stakeholders in planning the research agenda, conducting research, evaluating potential technologies and applying the new technologies and practices.

Hence research institutions recognized the need to make research more demand-driven and responsive to client needs by ensuring the participation of users in the process of agricultural technology development. Even though the concept of PR approach is not yet well developed in Ethiopia, there are a number of efforts at pilot levels here and there in a poorly coordinated manner. However, the experiences of such initiations, the challenges and opportunities are not yet studied. Cognizant of the need to make research more effective and responsive EARO in consultation with AHI took a step in assessing the efforts and initiatives that have been made in Ethiopia so far in the area of PR.

The aim of this paper is, thus, to assess the efforts and initiatives that have been made so far in the area of participatory research in the country, identify success stories with their strategies and approaches and synthesize lessons learned from local experiences that could help to facilitate the integration of participatory research into the conventional research system.

## METHODOLOGY

A workshop was organized on assessing the potential of PR in Ethiopia in April 2001, specifically aimed at clarifying the scope and focus of the PR assessment, developing the assessment framework, and planning for a PR field monitoring strategy. At the end of the meeting four technical groups, composed of members of multidisciplinary nature were assigned to assess various projects with PR experience in the country. For the same mission, eight different local PR experiences were assessed using various M&E tools. These include the African Highland Initiative (AHI), Participatory Plant Breeding (PPB) project (Awassa), Joint Vertisol Project (JVP), Participatory Research for Integrated Agro-ecosystem Management (PRIAM), Participatory Plant Breeding (PPB) project (Melkassa), Farmers Participatory Research (FPR) Project (FARM Africa, Awassa), Cool Season Food and Forage Legumes Project and Integrated Pest Management. Data was collected through formal and informal intensive discussion of the team with farmers, researchers, participated governmental and non-governmental institutions, institution leaders and key informants.

Four technical groups consisting of 4-5 members each drawn from different disciplines and institutions were formed following the sensitisation and planning workshop held in April 2001 designed to develop a frame work for an assessment of the potential of participatory research in Ethiopia. Assigned team members were supposed to have experiences in implementing participatory approaches. The overall study was planned and implemented in three phases: preparation, data collection, analysis and interpretation and report writing. The groups considered review of relevant documents, group discussion, key informant interview and field observation. A tentative checklist to be used by all groups was developed based on the overall assessment framework suggested during the planning workshop. The checklist was modified in such a way that it would separately serve to extract relevant information from key stakeholders considering the objectives of a given project.

Each group developed its own work plan and time schedule for contacting relevant stakeholders (organizations and individuals) for discussion, field visits, gathering secondary information, data analysis, interpretation and draft report writing. The groups departed to the study areas from March to May 2002 depending on the convenience to each group and the partner institutions. Group discussion was held with researchers, farmers, staff of *woreda* and/or zonal Bureau of Agriculture (BoA) and other relevant stakeholders. Information obtained from group interview was fine-tuned through key informant interview with individuals who know the details of the project and its implementation procedures. Review of secondary data helped to gain a general understanding of the background of the project, its rationale, objectives, approaches, expected outputs and other related issues. Discussions with stakeholders focused mainly on the background of the project, objectives, planning and implementation procedures and approaches of participation, benefits obtained from participation, problems encountered and on the way forward by giving especial emphasis to the roles and responsibilities of farmers in decision making at various stages. Field observations in the form of transect walk were made to sample sites to get first hand information about the area in general and the project undertakings in particular.

### FRAMEWORK FOR ASSESSMENT

The cases were analyzed using the framework and guidelines developed during the first workshop held in April 2001, on designing an assessment of the potential of participatory research in Ethiopia. The conceptual framework was developed in such a way that it will enable comparisons between the actual outcome of a research project with the expected outputs had the research process been perfect and making an excellent contribution. It also considered the major actors of PR and their potential contributions, roles and responsibilities to make the PR process effective. The assessment framework was developed with the following important assumptions:

1. Although there are a number of improved technologies generated in Ethiopia, these technologies have not been made available and readily accepted, properly applied in production and boosted productivity.
2. Active participation of farmers and other stakeholders in the research process starting just from problem identification makes research more relevant and effective, fulfilling the interest of the ultimate users of research outputs, mainly farmers.
3. If past research in Ethiopia were as effective, farmers would have been partners of researchers in technology development, make a profit from their production, share knowledge actively with others, manage their own resources more adaptively and actively participate in research planning and assist research in finance.
4. If past research in Ethiopia were as effective, researchers would have changed their attitudes, monitored farmers progress to measure researchers effectiveness, assisted farmers to organize themselves, supported farmer capacity building, facilitated fora and linkages, generated more technical options, involved farmers/farmer organizations in planning and implementation, documented farmers experience and innovations, assisted farmers in experimentation, understood and valued farmers knowledge, actively built partnerships, followed a multi-disciplinary approach and carried out policy related research.

Principles and values in effective and impact-oriented research were identified in the first workshop to be employed as a part of the yardsticks during assessment. These include the following.

1. Different social groups of farmers (inclusiveness) should have equal access and opportunity to be part of FRGs and participate in decision-making process on communal and their own specific problems (problem differentiation).
2. There is a need to continuously improve our approaches and strategies by monitoring progresses at farm levels, examine the relevance of research to the community and deliver technical options in sustainable manner and monitor whether the research is problem-driven and demand-oriented.
3. We should understand farmers' situations, value farmers' knowledge and trust in farmer's potentials and capabilities that they are experts in their own situation. This calls for building genuine partnership with farmers and other stakeholders.
4. There is a need to build farmers' capacity to manage their own affairs (self reliance), improve stakeholder participation (dialogue, interactive,

multiple ways), improve access to options of technologies, create flexibility and options, improved quality of facilitation, develop sense of joint ownership (role clarification, trust, transparency, confidence) and promote experiential learning – a way of learning by doing that could be relevant both for researchers and farmers.

## RESULTS

### Comparisons of conventional and participatory approaches

Three to four decades of conventional research efforts have revealed that the impact observed was not as to the expectation. Participatory research effort is expected to increase the internal and external efficiency of research systems and improve technology generation and transfer processes. From the local context, a comparison of conventional and participatory research approaches is indicated in Table 1.

**Table 1: Comparison of conventional and participatory research approaches**

Parameter	Conventional research approach	Participatory research approaches
Degree of stakeholder participation	Limited/no participation of farmers and other stakeholders in different stages of technology development and generation	Active participation of key stakeholders at different stages of technology development and generation
	Farms are used as sites without much role	Joint evaluation by farmers and researchers
	DAs monitor progress with less involvement of farmers	Researchers, farmers and DAs monitor research activities together
	No FRGs formed and no possibility to discuss on development issues	Presence of FRGs initiates farmers to discuss on joint development problems.
Practical implications of the results	Statistics which does not represent reality may be produced	Because farmers themselves take part in monitoring and evaluation, it is not possible to take unrealistic data from the field.
Clarity of objectives	Adaptive trials not clear for farmers	These are clear for farmers in terms of objectives.
Cost of experiment	Less costly, as it runs routinely	A bit costlier, as it runs parallel with normal program.

Scope of application of the results	Wide area coverage is possible	Limited in scope to few farmers.
Selection criteria	Short-sighted in terms of selection criteria as farmers do not evaluate the performance of the trials.	Comprehensive to capture multiple selection criteria of farmers and researchers, as participation of farmers is active.
Time required for research	More time consuming	Less time since it is focused to targeted issues
Approach (individual or group)	Organized on individual basis	Initially it was individual-based; Later, it became group-based for wider impact.

### **Why are participatory research approaches vowed relevant?**

The case studies showed that participatory research approaches brought up important impacts and strengths at various scales, depending on the degree of participation of stakeholders, duration of the study, amount of finance of the project, institutional support and market to the products. The following benefits & impact areas were identified as potential effects of participatory research approaches from the respective case studies.

#### **1. Enhances development of appropriate technologies**

Participatory research approach provided opportunities for researchers, extension personnel, development workers and policy makers to understand more about the farmers' complex circumstances, problems, needs and priorities. This helped to develop and generate appropriate technological options addressing farmers' problems and priorities. It also enabled more technologies to be based on ITK. Researchers will focus on developing and generating technologies compatible to local knowledge and systems. The technologies are expected to address complex systems of farmers and constraints, and therefore improve adoption and adoption potential of technologies by the farmers. It was also realized that PR approach has contributed for the development of methodologies and manuals that help for easy understanding and implementation. For instance, a decision guide for soil conservation and utilization of legumes in soil fertility improvement developed by researchers in the AHI project enabled farmers to use different soil fertility management options/alternative nutrient sources such as composting, N fixing legumes and MPTs.

#### **2. Enhances relevancy of research**

One of the pivotal contributions of PR approaches to date was that it enhanced interdisciplinarity among researchers, and directed them towards systems research. Different disciplines worked towards addressing the common focal problem in a systems approach. This increased the opportunity to take into consideration the concerns, needs and interests of the different farmers. Moreover, working together enhanced the understanding of the production system and identification of key areas of intervention.

#### **3. Strengthen linkages among farmers, between farmers and institutions**

In conventional research approaches, it was felt that sharing of knowledge and experience of local communities was not up to expectation. This was so mainly

because of lack of trust and interest among and between farmers. In PR approach, information, knowledge and skill exchange among farmers and institutions have been found encouraging and improving. Farmers developed a very encouraging rapport with development practitioners (e.g. PRIAM project). Farmers have acknowledged working together with researchers and they felt that their problems might be addressed if the linkage continues in a coordinated manner.

The way the research is planned and implemented gave farmers ample opportunity to participate. Farmers have therefore become active partners in the technology utilization and adoption process. They have also developed confidence in and skill to manage their resources. Farmers' contributions in terms of providing support to research include the provision of land, labor, irrigation facility and bearing the associated risks that might have occurred as a result of failure of technologies. *Woreda* office of agriculture as an important partner, has contributed in facilitating the PR process at grassroots levels.

#### **4. Farmers became innovators**

PR has contributed in increasing the ability of the farmers to experiment on their own. It has also enabled farmers to be more innovative and creative, and bear the risks and costs of experimentation. Farmer empowerment enables them to build confidence and trust. Farmers themselves expressed the benefits obtained from PR saying that they have acquired knowledge that passes through generations. This is to mean that they have gained knowledge on improved management practices of crops, livestock and natural resources that is of paramount importance to their livelihoods. Those farmers who were participants in PR activities consider themselves as models to other fellow farmers. This has encouraged them to continuously try new technologies in the future and do experimentation by their own.

#### **5. Farmers became active technology disseminators**

Farmers noted that they have been exchanging useful agricultural information with their fellow farmers. Mechanisms of exchange of information include organizing field days, farmer to farmer flows, as either passers-by asking for information and materials, and/or informal exchange of information. When convincing technologies are available, like the forage grass and soil conservation bunds, use of the technology by non-participating farmers has been remarkable. Farmers do that because they want their fellow farmers to benefit from the technology and because of the request they get from fellow farmers. It was not established as to how many farmers have benefited from such exchange of information. But, researchers felt that the rate of information exchange has enhanced since adopting PR approach.

#### **6. Builds farmers' capacity in managing their resources**

It was noticed that PR builds farmers' knowledge and skills in land and other resource management practices. PR has also contributed in empowering farmers' ability to do research and improved their decision making systems. Farmer participation created a good opportunity to create linkages with several stakeholders and this improves communal resource mobilization. Improved management practices gained through interdisciplinary approaches helped to improve farmer's income generating capacity. For instance, some farmers who are engaged in the production of cash crops, such as vegetables, reported that they have been able to get economic advantages in that they were able to gain knowledge on how to manage their farms from production through post harvest practices. They have expressed that they are now able to select varieties according to their own selection criteria.



### **7. Changes attitudes of researchers and institutions towards farmers**

Among the most important impacts that the PR approach has brought is the considerable impact in changing attitudes of researchers and institutions towards farmers' roles. PR has also enhanced linkages among stakeholders and created more collaborative (friendly) working environment. Researchers and other institutions were also able to get feed back from farmers on the performances of the technologies under the farmers' real conditions. Governmental and non-governmental institutions were also able to get feedback on impacts of policies and development programs on the productivity and livelihoods of farming households. Above all, participatory approach has enabled researchers, extension personnel, development workers and policy makers to understand, appreciate and include farmers' selection criteria and interests in their agenda. Participatory approach has also improved commitment of stakeholders to work together towards addressing a common problem. Researchers are also encouraged for more research work and committed to work closely with farmers and other stakeholders.

However, researchers felt that in the process of technology development and generation, farmers' involvement at all levels might not be possible. They also underlined that the stage at which stakeholder participation is required need to be worked out based on the nature of research. Particularly, there is a need to define at what stage farmers must be involved in PR. Researchers also perceived that PR has strengthened their relationships with other researchers and stakeholders. Integration of biophysical aspects with that of social aspects has given researchers a new dimension to their research focus. Researchers have pointed out that they can now easily improve the developments of project proposals that address the problems and priorities of the farmers.

### **Success factors for implementing PR**

The efficiency of agricultural research systems was influenced by participatory research approaches thorough a number of interrelated factors. Some of the most important success factors identified for research and development initiatives in Ethiopia are presented below:

#### **a) Market-oriented entry points**

Integration of technological and methodological innovation to solve the most pressing problem of the system, commonly described as entry points, is the first most important step to build confidence among researchers and farmers, and also to shorten the researcher-farmer interphase.

Since effective utilization of introduced technologies requires effective market orientation, it is vital to opt for technologies that directly contribute to the income of the household in a short period of time. Market orientation is a key that opens a door to effective resource allocation and utilization. Hence, PR that took market into consideration, and considers marketing agencies and institutions as stakeholders in technology generation, dissemination and utilization were sought to be successful. However, the functioning of marketing agencies, institutions and other issues were not studied and addressed in participatory manner. Market imperfections related to the farmers, market middlemen and other stakeholders need also be identified and prioritized for possible policy and other intervention options.

One of the most important indicators of technology adoption is ensuring access to and availability of technological options. The technological options should however be appropriate to the needs, interests and local conditions of the farmers. Appropriate technologies are more likely to be adopted and used by the beneficiaries.

#### **b) Capacity of actors to implement PR**

Researchers, development agents and institutions have limited capacity to work in multidisciplinary teams, build partnership and respond to newly emerging NRM issues, as they were not backed by appropriate PR skills. Some of the important skills required for effective implementation of PR are facilitation, team building, stakeholder interaction, conflict resolution and problem analysis. It was, therefore, difficult for researchers and DAs to smoothly exercise and bring about the expected contributions of PR. Moreover, most researchers and DAs are engaged in many competing activities and responsibilities to adequately follow and implement PR approaches. In some instances, FRG members have been isolated from other community members as a result of limited application of PR approaches. Non-participating farmers have also had little information about neighbouring farmers' PR activities. Building farmers' capacities through trainings, visits and experience sharing discussions considerably contributes for the success of effective research systems. It also plays major role in empowering farmers for experimentation and active participation at different stages of research processes.

Effective implementation of PR approach requires capacity building of researchers particularly on principles and methodologies of PR. The key stakeholders need to be aware of what participation is and its benefits so as to create a sense of commitment and responsibility sharing. Working together requires patience and respect of the communities' social values and affairs. Hence, commitment and capacity building of researchers and other stakeholders are one of the key factors that contribute for effectiveness of research.

#### **C) Reliable partnership**

For the successful and efficient implementation of PR, creating favourable linkage mechanisms among the actors brings more options to research and other interventions. It is of paramount importance to build genuine partnership and linkages with farmers, related organizations and development actors (for instance, MoA, input supply institutions, local organizations, market, etc.). Stakeholder partnership should be designed in such a way that different stakeholders should understand and fulfil their responsibility, and be committed to work together. It also requires periodic stakeholder meetings and workshops for feedback exchange and experience sharing to create a common understanding of visions, goals and objectives. Involving farmers in problem identification, planning, implementation and evaluation stages of experimentation are found important for participatory research to be successful. Moreover, presence of lead or risk taking farmers, dealing with priority farmer's problems, and building trust, confidence and honesty with farmers is essential steps to be considered while implementing participatory activities. Commitment of farmers have also significant role in the process of implementing participatory research.

Although positive relationship exists among farmers, researchers and other stakeholders in the projects, the established relationship is on adhoc bases. There is no agreed and formal plan of work by different stakeholders to jointly plan, monitor and evaluate PR activities. Farmers are also concerned about the existence of limited technological options, and lack of timely decisions on tested technologies. Since PR is

a dynamic process it requires a continual supply of technological options, which became a challenge for most projects. However, the involvement of traders, processors and local decision makers was minimal or totally absent.

**d) Responsibility sharing among different stakeholders**

Responsibility sharing helps to timely achieve PR desired outputs and enhance accountability as well as commitment of work. In some cases due to the absence of clear responsibility sharing, offices of agricultural staffs have left their responsibility to researchers and vice versa.

Local institutions are apparent in different community setup and can be used for technology transfer, input distribution and establishment of credit system while exercising PR. However, presently there is inadequate understanding, documentation and utilization of these institutions in the various PR initiatives.

**e) Local leadership capacity**

Availability of technological options and increased access to appropriate technologies per se could not lead to effective research systems. There should also be strong leadership that facilitates effective linkages between physical and human resources. Moreover, organizing the farmers into groups helps to improve effective technology dissemination, monitoring and evaluation mechanisms. For instance, organizing farmers into strong Farmers' Research Groups (FRGs) creates a good opportunity for researchers, extension personnel and development workers as entry point into the community to work closely on priority areas. The FRGs need to be empowered through PR approaches so as to enable them

Experiences reveal that PR approach empowers farmers and improves their ability to conduct experiments. To make this effective, it requires stratification of farmers according to their resource status, needs and priorities. Farmers ITK needs to be documented and used as a base for designing research and development agenda. Strong entry points need also be identified taking into consideration of farmers' priorities and needs.

**f) Multi-disciplinary systems approach**

It was learnt from the case studies that commodity approach could not bring significant improvements in the farming systems which is characterized by interrelated enterprises and circumstances. Hence, integrated and strengthened systems approach is of paramount importance for the success of research and other interventions. This requires for the study and analysis of the system as a whole with all its circumstances, constraints and opportunities.

**g) Clear dissemination and scaling up strategy**

Well designed scaling up / dissemination strategy is essential to successfully and sustainably promote PR success stories. Nevertheless, most projects don't vision at the initial stage of planning on how to disseminate PR efforts to a broader scale.

**h) Favourable policy**

In participatory plant breeding approaches farmers select lines based on their interest and socioeconomic circumstances. However, the existing variety release policy doesn't allow release of large number of improved varieties at a time on the basis of interest of individual farmers. Multiplication of large number of released varieties is also beyond availability of resources. Sustainability of germplasms and/or

lines supply to farmers is questionable particularly when initiatives are taken to scale-up the effort.

In PR approach, there is a possibility for farmers and other stakeholders to select and evaluate technologies according their preferences, priorities and needs. In the end, this increases the probability of selecting several technologies for use. However, the existing seed release mechanism may not allow generation of several technologies at a time. Multiplication of several technologies at a time may also not be an easy task. Hence, there is a need to re-adjust supportive seed release policy according to PR principles and needs.

**l) Supportive management & Infrastructure**

The issue of giving a value to participatory research work with farmers in incentive and reward systems has to be introduced its own contribution to effective research. Moreover, creating favourable policy and conducive working environment to research systems could play pivotal role in the internal and external efficiency of research processes. Availability of adequate resources coupled with good and visionary leadership is also a corner stone for the execution of effective research.

Outputs of research, extension and development efforts will reach to the users only when infrastructural facilities are supportive and conducive. Efficient research and extension systems will not bring considerable impact unless it is supported by enabling infrastructural policies.

**j) Community facilitation**

In a community which is a focal point for research, extension, development and policy works, the existence of community facilitator contributes for the success of interventions. A facilitator is required to organize farmers into groups of similar needs for specific technologies and serves as immediate link between the community and outsiders.

**k) Documentation of PR processes**

Site specific and /or community specific PR findings, innovations and processes should be well documented so as to develop decision tools for institutional learning and scaling up of techniques, methodologies and approaches. It is also necessary to upgrade farmers' documentation skill through trainings so as to enable them register PR daily events and accomplishments. However, due to lack of PR experiences, researchers', DAs' and farmers have not adequately documented PR activities, processes and outputs that can be taken for scaling up exercises.

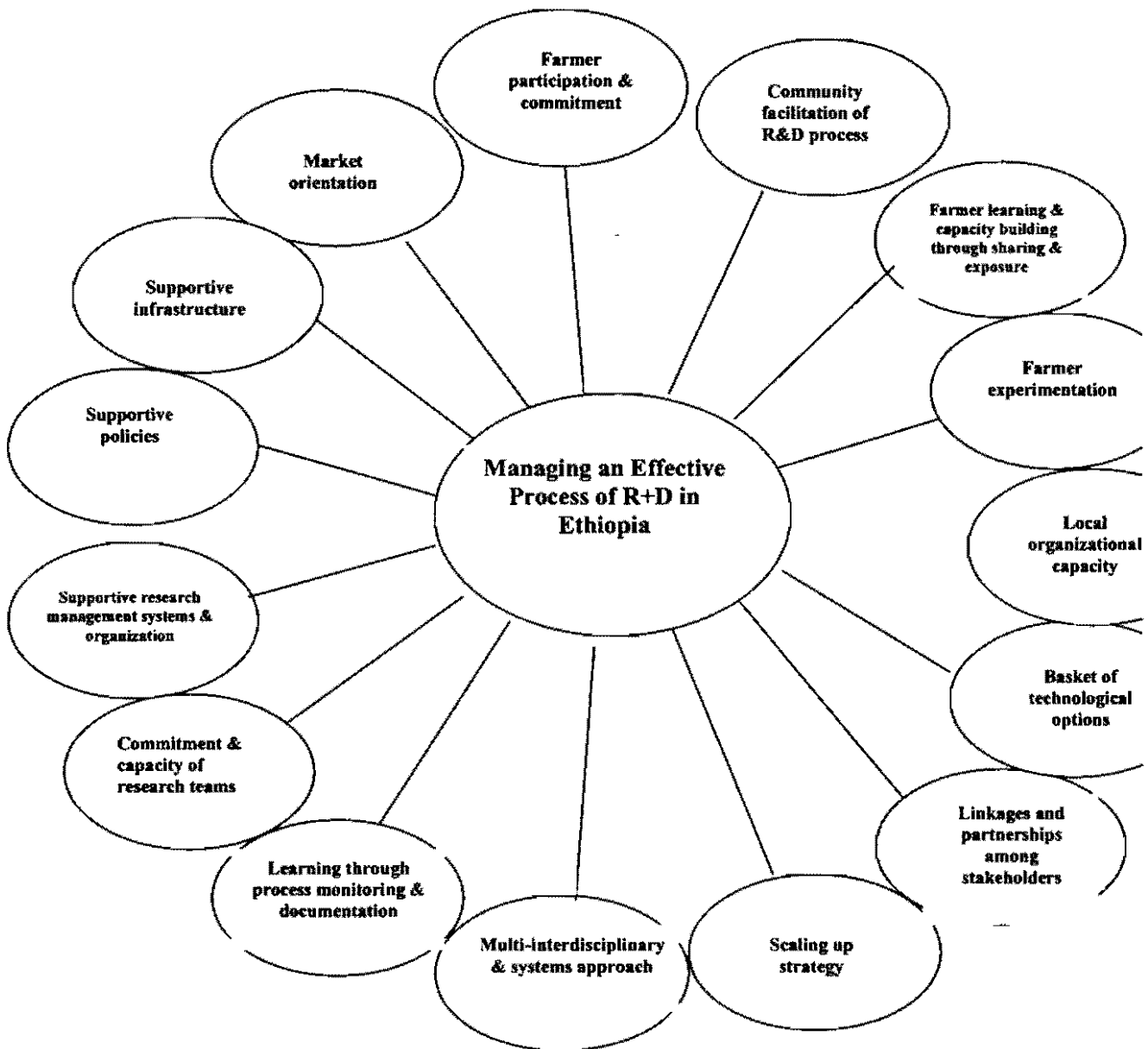


Fig. 2. Conceptual framework for managing an effective research and development process in Ethiopia

