

# Farmer Led Innovation: Experiences and Challenges in Ethiopia

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## Abstract

Actors involved in research and development are continuously seeking better ways of supporting farmers to develop their initiatives and innovation capacities in Ethiopia. Prolinnova-Ethiopia is a national learning and advocacy platform of state and non state actors, that is primarily engaged in the promotion of local innovation, aiming at integrating the approach in the formal research, extension and education systems. The basic philosophies and methodological frameworks of the platform are presented in this paper. In the last four years, the platform has managed to mobilize lots of interest to identify, document as well as develop local innovations in a participatory fashion. Four regional platforms were created on the basis of agro ecological classifications. Participatory Innovation Development (PID) works are initiated in most of the platforms. In this paper, two examples of PID are presented and challenges of farmer led innovation are discussed from the point of view of the innovative farmers and researchers involved in the process. Farmers strongly suggest that limitations of resources so that not being able to take risks and carry out experiments of their own priorities are the major challenge. Most researchers have the tendency to believe that farmers can not do research and research is the exclusive mandate of formally established organizations and formally educated people. For such researchers, the comfort zone is to do research behind a closed door and on station, with peer groups. On the other hand, there is a growing number of researchers who are keen to work with innovative farmers. Those who appreciate the innovation capacity of smallholder farmers could not however get an easy way to make a compromise between the research works of farmers and the classical scientific approaches, which they are most familiar with.

## Introduction

Farmer innovation is not a new phenomenon to the smallholder farmers and pastoralists in Ethiopia. What is actually new is the attempt of outsiders to recognize and support the knowledge and experiences of farmers, with a purpose of developing local innovations as well as building the confidence and capacity of others to experiment new ideas. This experience is indeed in its infancy stage but lots of progresses have been witnessed in recent years, in the country. The works of two Netherlands government funded projects, which one of the projects was implemented in Ethiopia; built the foundation for the new approach and a multi stakeholder partnership of state and non state actors in the country. It has stimulated the interest of several actors to learn and develop the concepts and practices of "promoting farmer innovation" locally as well as globally. Experiences of the project on Indigenous Soil and Water Conservation (ISWC) were documented in a book known as *Farmer Innovation in Africa* (Reji and Waters-Bayer, 2001). The legacy of this project, which the activities in Ethiopia were coordinated by Mekele University, in Tigray region, gave rise to the formation of a national lobbying platform, in 2003. The new platform was known as Promotion of Farmer Innovation and Experimentation in Ethiopia-PROFIEET and the name of the platform was changed at a later stage to Prolinnova-Ethiopia. This platform is spearheaded by NGOs (Agri Service Ethiopia, being the home base and

coordinating NGO) and it is made up of government organizations and NGOs involved in research, extension and education [PROFIEET/PROLINNOVA 2004]. It is also part of the international prolinnova, which is a *global community of practice* which makes its central learning agenda " the process and products of local innovation-based partnership between farmers, the formally trained researchers/experts, the private sector, policy people, extension workers and others actors". The global community of practices include 16 countries, mainly from Africa, Latin America and Asia.

Groups of NGOs, government organizations and interested individuals, who constitute Prolinnova-Ethiopia conducted several meetings and workshops to understand and develop the concept as well as clarify the vision and mission of the platform. Step by step the platform has become more crystallized and begun to function at different levels. This paper briefly discusses the main philosophical and methodological thoughts, the current activities (with a few examples of farmer innovation), the major challenges of farmer led innovation from various perspectives and the way forward.

## **Conceptual and methodological framework**

### ***Conceptual framework***

PFI, which was a project developed by the UNDP Office to Combat Desertification and Drought (UNSO) and supported by the Netherlands Directorate General for International Cooperation (DGIS), is one of the important attempts made to identify and support farmer innovation in East Africa. It was implemented in Kenya, Uganda and Tanzania with local partners, who developed a working definition for the term "farmer innovators". According to the PFI, those farmers who (in local terms at least) have developed or are testing new ways of land husbandry that combine production with conservation (Critchley 1999) are known as innovative farmers. The sister project, ISWC-2, also operated under the same philosophy, but each of the country-level partners developed working definitions of their own. For example, ISWC-Ethiopia defined an innovator as someone who develops or tries out new ideas without the support of the formal extension services. "New" was defined as something that has been started within the lifetime of the farmer – not something that s/he inherited from parents or grandparents. In contrast, ISWC-Tunisia decided to include technologies inherited from parents in the inventory of local innovations. However, as a general guide for action, the working definition for ISWC-2 was: "Farmer innovation" is something new to a particular locality, but not necessarily new to the world" (Reij & Waters-Bayer 2001). Historically and conceptually, Prolinnova-Ethiopia finds its roots in the ISWC-2 Ethiopian project. Therefore, the working definition of Prolinnova-Ethiopia for farmer innovators is quite similar to the one developed by ISWC-2 Ethiopia.

According to Prolinnova-Ethiopia, the term "innovative farmers" refers to those who have tried or are trying out new but value-adding agricultural or NRM practices, using their own knowledge and wisdom but also through appropriation of outsiders' knowledge, often called scientific. Without contradicting the recognition of IK as an important asset of development, Prolinnova believes that innovative farmers are not those who are using IK as it used to be during their ancestors' time. They are farmers who act on IK and/or outsiders' knowledge - through conducting informal experiments - and making the knowledge more usable or better fitting to their own realities. Therefore, the main focus of Prolinnova- Ethiopia is not on IK as a static asset, but on the dynamism of IK that could bring in new values to the users. Innovative farmers are not like the model farmers who are intentionally trained by extension workers on specific and pre-determined technologies. Farmers' roles have been and still are very passive in technology generation in the formal system in Ethiopia. The extension system also formulates and promotes "on-the-shelf" package technologies that result from past research (Tsfaye 2003). Innovativeness is however the capacities of individuals or groups to look into given situations from different angles and make new values out of the situation, without affecting the broader environment negatively. Therefore, those farmers who have been trained by extension workers may also be recognized as innovators, when they are dealing with the incoming knowledge/technology by improving it or

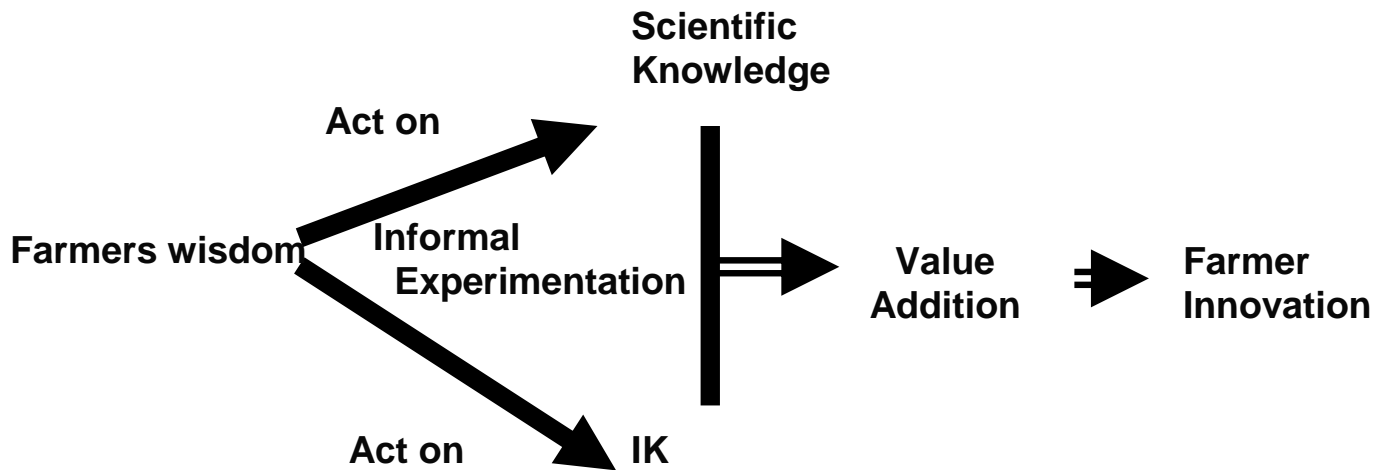
making it fit the local situation or blending it with pre-existing practices or technologies and ending up with a new way of using the knowledge or technology. Essentially, the term “innovative farmer” is not given to a certain social or economic group in the community, but to those farmers (regardless of their sex, wealth status or age) who are trying to add value to existing practices through creative engagement and experimentation and with a passion to seek changes that have economic, social and environmental significance.

Farmer innovation is also a way of life for poor Ethiopian farmers who are being challenged by the ever-changing environmental, policy and market situations in the country. For them, innovation is not academic work or an extracurricular activity. Rather, it is an inherent characteristic of those who are striving to make a living out of the difficult situation they are in. Almost every single farmer who is living in such challenging circumstances has to innovate in order to survive. Farmers, especially resource-poor ones, continuously experiment, adopt and innovate (Chambers *et al* in Critchley 1999). Farmer innovation is a product of farmers’ informal experimentation. Whether we provide them the support or not, farmers are always trying out something new. Ayelech Fikre, an innovative woman in the central highlands of Ethiopia, when asked to explain what makes her do all the fascinating work on her own, said: “*The problem [soil erosion and difficulties of getting more land] taught me to do all these activities. Otherwise I could not survive* (Million 2001).

The significance of farmers' innovation however ranges from being useful only to the individual farmer, some times even limited to specific circumstances (plot of land, category of animals, specific bio-physical nature) to a wider range of application that can be used by many farmers. Therefore, the focuses of "innovation facilitators" have to be at two levels. The first one is to stimulate the creative faculty of the human mind (farmers in this case), which has been down for years because of undesirable socio-psychological influences of outsiders; and secondly to upscale those economically and socially worthy as well as ecologically sound farmer innovations, with due recognition of the intellectual property rights and through creating enabling commercial environment when necessary. Commercialization of knowledge doesn't however seem to be more important in communities where the social capital is highly influential than market economy. Apparently, it is common to see local knowledge/innovations being socialized and shared easily unless it is a marked mechanism of livelihood for the individual.

Another important dimension of the concept of "farmer innovation" is that it embraces not only technological innovation, but also new ways of managing livelihood in general. This may include new ways farmers do networking, communication, institution building, information management, marketing, planning, accessing resources, etc in view of improving their agricultural and natural resource management activities. In short, this means, farmer innovation is all about new ways of doing agriculture and NRM. That newness entails values that may bring changes in quality of life. The technological and institutional innovations are not two different departments of the same system, but it is often very common to see instances where technological innovations causing institutional changes or institutional innovations stimulating technological innovations. Institutional innovation in this case is not necessarily referring to organizational changes but to the changes in the behavioural patterns of people, rules of the game, and changes in routine practices, new community consensus, changes in value systems etc

As a learning and advocacy platform, Prolinnova-Ethiopia adopts the following schematic presentation to explain the conceptual framework of farmer innovation:

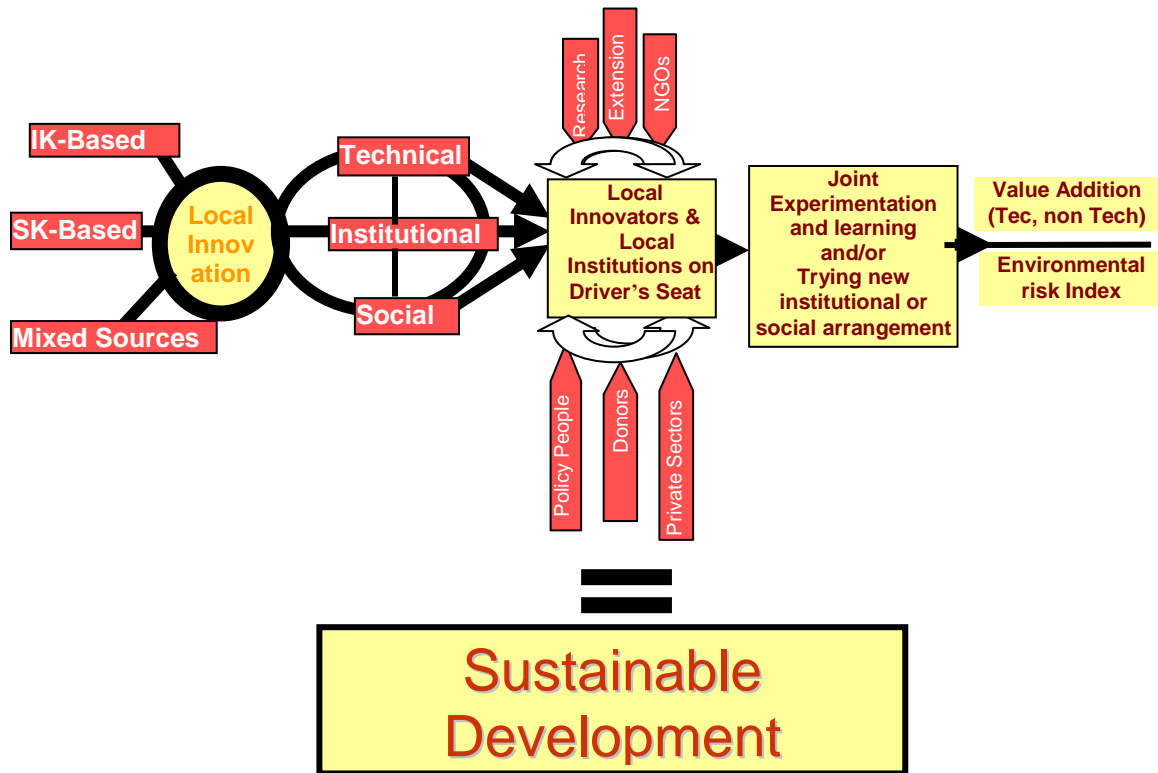


### ***Methodological Framework***

Participatory Innovation Development (PID) in agriculture and NRM is the overarching methodological approach which Prolinnova -Ethiopia is using to translate the theoretical discussions presented in the previous section into practice. PID is a farmer-led and expert-supported innovation development process, which mainly takes local innovations as a starting point. It is basically a collaboration of farmers, extension workers and researchers, in which farmer innovators who are already trying out new things take the lead. The process emphasises not only research but also application of the results, primarily by those involved in the PID activities. Others could learn from the experiences of innovative farmers and may be motivated to try out and see how the new ideas work in their own situation. The goal of PID is not to scale up the farmers' technologies that come out of PID, the way the transfer-of-technology approach does. It is rather to bring a new culture of research and development in which the local people (farmers/pastoralists) play significant role in trying and using new ideas in agriculture and NRM. In other words, it is to scale out the spirit of innovativeness so that all farmers could be encouraged to try new things that work in their own realities. PID has its roots in Participatory Technology Development (PTD) and it still shares most of the tools and methods used in PTD. For many people, PID is indeed a synonym for PTD. However, some of the new values of PID over PTD include:

- a) In PID, outsiders seek to work with those farmers who have tried or are trying out something new and thus are already in the midst of an innovation process. Innovative farmers are not just "participating" in the process; they are recognized as lead researchers as well as primary users of the innovation;
- b) PID is not only about technical innovations, as PTD is most known for, but addresses all kinds of new ways of thinking and doing things (social, institutional, cultural, economic etc) that may help to improve the lives of farmers.

Thus far, the PID activities have not been strong in capturing and developing the new dimensions of institutional, social and economic (e.g. marketing) innovations. It is hoped that Prolinnova will be able too improve that aspect of the framework in the coming years.



### The state of the art of Farmer Led Innovation in Ethiopia

In 2003, the major achievement of Prolinnova-Ethiopia was to organize a national workshop to discuss relevant experiences in Ethiopia as well as to formalize the establishment of the community of practice as a national learning and advocacy platform (Amanuel 2004). Before organizing the national workshop, the steering committee has commissioned a study to understand the experiences of various institutions in the country that are engaged in farmer participatory research. This study provided opportunities to identify and map out the connections between various stakeholders for future collaboration. Shaping and consolidating Prolinnova-Ethiopia as a platform, following the launching workshop was not however an easy task. This is mainly because; institutions with different and sometimes conflicting perceptions and philosophies about R&D had to be accommodated, so that their work could be turned to the benefit of farmers. Prolinnova believes that such an experience has to continue, and much greater results can be achieved if the basic principles which include, accommodation of multiple perspectives, tolerance and collective learning are duly recognized and respected all stakeholders in the club.

Most of 2005 was used to discuss institutional arrangements, draft guidelines, prepare proposals and seek donors support to implement planned activities. By 2006 Prolinnova had defined its working areas by identifying major agro-ecological zones in the country. It has adopted a strategy of establishing regional (provincial) fora to coordinate the work on the ground. Since then, Prolinnova has been implementing its work in four broadly categorized agricultural systems, which include the typical highlands (mixed cereal-based crop-livestock farming), the coffee-

growing areas of the south and southwest, the *enset* and other root crops growing regions (*enset* is a false banana type of plant that provides staple food for millions of people in the southern region) and the pastoral areas in the northeast, east and southeast of the country, where livestock production is the major source of livelihood. Some of the key farmer innovations that attract the attention of the learning platform and which are in the pipe line of development through collaborative actions include:

***Innovation from coffee-growing zone:***

- Farmer-made hydroelectric power
- Manually-operated dry coffee pulper
- Coffee plant rejuvenation techniques

***Innovations from the northern Ethiopian highlands:***

- Rotary water up-lifter from hand-dug well
- Reducing water-logging problems through digging underground canals
- Improving “modern” beehives by making queen excluder out of local materials, reducing number of frames, and making queen delivery possible

***Innovations from the pastoralist zone:***

- Mixing camel, goat and cow milk to avoid curdling
- Pollen transfer of papaya by hand
- Repulsion of retained placenta in cows.

***Innovations from Enset growing areas***

- Treating *enset* bacterial wilt by extracts of cactus
- Improving cassava yield by planting techniques
- Self developed grafting techniques

In general, the activities being facilitated by Prolinnova- Ethiopia fall under three major categories (Prolinnova-Ethiopia, 2006). The first one comprises the Netherlands Government-supported activities, which aim at identifying innovative farmers in various agro-ecosystems and initiating PID. The second activity, just started recently, is the DURAS (French-government) supported project on Farmer Access to Innovation Resources (FAIR). The FAIR project is an action research project which is aimed at looking ways and mechanisms of making financial supports to farmers and farmer organizations to help them decide on their own priority for innovation development. The third set of major activities includes the diverse work related to PID being carried out by member institutions in their own domains. These activities are not centrally planned and coordinated by the Prolinnova secretariat but are part of the overall efforts of Prolinnova-Ethiopia, to accomplish its mission. These include formation and strengthening of Farmer Field Schools (FFSs), facilitating farmer participatory research, organizing training on PID-related methodologies, and using various fora to advocate for change towards supporting farmer-led R&D processes in institutions of formal research, extension and higher learning.

Most of the above mentioned cases are at the stage of the beginning of the PID exercises in different regional platforms. The exercise is currently on going and thus premature to report. Prolinnova will come up, in another issue, with full accounts of the PID processes and results as well as the subsequent arrangement to scale up the process.

**Examples of Farmer led innovation development**

The following are some examples of PID just to give an idea how prolinnova is trying to run a multi-actor innovation processes in agriculture

**Example 1: *Evaluation of some botanicals in Prevention of Enset Bacterial Wilt***

Enset (*Enset ventricosum*), is a false banana type of plant, which is mainly cultivated as a source of food by several millions of people in Ethiopia. In spite of wide adaptation and resistance to drought, enset become one of the major crops grown only in the south, central and south-western parts of Ethiopia. Enset has great economic, environmental and social values in the country. It is however, highly affected by a number of constraints mainly a disease known as bacterial wilt. It is increasingly a limiting factor in smallholders of enset production as it causes devastating losses.

Mr Behyilu, an innovative farmer in Amaro "woreda" (a grassroots administrative structure of the government of Ethiopia, which is equivalent to the English term "district") has conducted research on bacterial wilt. Mr Behailu has noted that there are 45 clones of enset in his locality, of which he selected 4 clones for his research. He explains a number of possible methods of controlling the disease. Use of extracts of cactus, spraying ash solution and keeping high hygienic standard are among the treatments he was interested to try. Behilyu explained that his ancestors were used to plant cactus around the enset plantation (Amanuel, 2004). This is the enset related IK which Mr Behilu was curious to explore the secret. The curiosity drove him to hypothesize that the cactus must surely have a treatment effect on some enemies of enset. Thus he decided to extract the thick milky juice of cactus and spray it on the plant. Application of the cactus juice was in fact made in different modalities. The first modality was to apply the extracts directly on the damaged surface of the plant. The second application was on the basal stem of the plant and the third treatment was to dress the enset stem with the extract after cutting as well as treating the root part with the extract. Ash was simply added to the holes during the planting time. Behailu witnessed that the three applications were all effective in controlling the disease and he recommended a combined use of the cactus extracts with high level sanitary standards, to make sure re-infestation of the bacteria is not taking place at any time. Behailu presented his findings in one of the forums organized by prolinnova Ethiopia. He indicated that there are some other farmers in his area who are trying to use different treatments against bacterial wilt and he is enthusiastic to try those treatments and compare the results with his research findings. Behailu, while carrying out the research, was not supported by any of the extension workers of the state or NGOs or any research staff. The staff members of Agri Service Ethiopia (a local NGO and member of prolinnova Ethiopia) was the one who identified the farmer and brought him to the attention of prolinnova-Ethiopia and Debub Agricultural Research Institute.

Undertaking Participatory Innovation Development that involves several actors was the next step. The reason why PID on the bacterial wilt experiment was needed was basically to create more opportunities for the farmers to develop the knowledge through multi actor involvement so that to determine the measurements and other qualitative parameters of the treatments. The second reason was, although the research people were extremely impressed with the result of Behailu's study, they always want to verify the result before recommending the findings for other users. Therefore the multi actor research process was initiated in which the following actors took part.

- **Six innovative farmers** (including Behailu): Each farmer is also considered as a block in the research design
- **Ditcho Tulto**: Farmer centered Community Based Institution, which negotiates on behalf of the farmers and involve in financial management.
- **Debub Agricultural Research Institute**: Registered the farmer led research protocol as a formal research project, and provide all technical assistance as well as conduct similar experiment on station.
- **Agri Service Ethiopia**: Build the capacity of the innovative farmers to do the research, facilitate the networking, provide financial supports to Ditcho Tulto to support farmer led innovation processes.
- **Prolinnova Ethiopia**: Allocate funds to improve Farmers Access to Innovation Resources (FAIR), create learning opportunities at national and regional level, and document farmer innovations using various media.
- **Amaro Woreda office of Agriculture**: Participate in monitoring and follow-up, involve in sharing and scaling up of the results to other farmers

## **Example 2.: *Prospective of Mr Mengiste made beehive in honey yield and quality***

Agri Service Ethiopia has carried out a pilot project to make farmers evaluate modern and transitional beehives (a type of hive that combine the concepts of the local and the modern hive) in one of its project areas. The general impression of farmers was that the honey yield was not so impressive in both cases because of frequent absconding of bee colonies and other reasons. Mr Mengiste Demeke, one of the innovative farmers in Northern Ethiopia (Enebse Sar Mider Woreda) was one of the farmers involved in the evaluation of the two new hives. He was, nevertheless, not happy with the results of the pilot project and continued to experiment and improve the limitations of the hives, with a focus on the transitional one. After three years of trial, he developed a new bee hive, which is a combination of modern, transitional and traditional beehives. He made remarkable improvements on the number of frames, the queen excluder, the smoking hole, position of the frame etc (ASE research review report, 2007). This hive is now named after him, "Mengeste hive". Currently; he has 24 mengiste hives with bee colonies in his backyard. He has witnessed that he managed to harvest 15 kg quality honey from one chamber in one harvest. In terms of quality he said, he was able to fetch higher price at the local market from the honey collected from the newly made hive. His works was demonstrated in various forums. He made a presentation in a national conference of bee keepers association and senior researchers on apiculture, which was specifically convened to discuss why farmers are less interested to take the modern hives despite of its merits. He explain the limitations of the modern hives from his own perspective and the type of experiment he run for three years to over come the limitations. He also made similar presentations at regional (provincial level) and attracted the attention of technology centers, research institutes and the bureau of agriculture.

ASE, at this point in time, is convinced to conduct a participatory experiment to compare the three hives, so that to create an opportunity for verification and collective improvements of Mengiste hive. This is being carried out in collaboration with several actors who have stacks and interest in bee keeping. Mr Mengista Demeke is recognized as a lead researcher and other actors are actively involved in the comparative experiment.

**Six farmer researchers:** All prepared Mengiste hives, mange the experimental hives, collect data and analyze information in collaboration with other actors

**Andassa research centers:** Participate in research design, develop data recording sheets, participate in date analysis, provide technical support, and publish results

**Agri Service Ethiopia :** Facilitate the research work, cover research cost, provide technical support, facilitate documentation, learning and publication

**Woreda Office of Agriculture and Rural Development:** Identify experienced farmers for the research, provide technical support, participate in data analysis, documentation and learning

**Alem Birhan Community Based Institution:** Negotiates on behalf of the farmers with other actors who are interested in the research, Participate in the identification of farmer researchers, Participate in the monitoring and analysis of research

## **The major challenges of farmer led innovation**

### ***Farmers' perspective***

Interview results of some of the farmer innovators and extension workers who are closely supporting the farmers indicate that there are some practical challenges, which are more important to the farmers than any one else. These include:

- Despite their great interest and enthusiasm to try new things, many farmers are constrained with resource limitations, apparently not able to take risks and carry out experiments with their meagre resources. According to Behailu this is one of the reasons why farmers opt to stick to the traditional experiences of doing agriculture or simply wait and see what the extension agents will come up with. Although "natural tendency and talent to try new things" is a curtail factor to innovate, such talents may remain dormant if resources and enabling environment are not their. Mengiste on his own commented that the experiment he did on bee hive took him three years, as he was improving a number of aspects of the hive from time to time. Although he is happy with the result at the end of the day, the experiment has demanded him much of his time and energy and that were all on the expense of his farming activities and other family business.
- Many of the innovative farmers agree that it is not easy to get accepted by fellow farmers and the community in general. No one expects poor farmers to be sources of innovation that may change the lives of others too. According to the innovative farmers, many people have the tendency to believe that it is only the literate and intellectual people (like the extension workers) who could bring something new and important to the farmers. Because of this reason, many people do not only provide "no support" but also discourage the innovative farmers, considering them some one wasting time for "no good" reasons. According to Behailu and Mengiste, had it not been for the support of NGOs they were linked with, it wouldn't have been possible for them to bring their initiatives to this level.
- Illiteracy was another challenge to Mengiste. The work he was involved-in requires understanding measurements. Mengiste is an illiterate man and no one was helping him how to make precise measurements to build the hive. It is apparently a necessary condition for bee hive makers to be precise, so that to manage the movement of hives from compartment to compartment. Because of this reason he was forced to do it by trial and error and that made him commit mistakes and redo things again and again. According to him, had it not been for his ignorance on simple arithmetic, he could have finished the project in quite shorter time.

### ***Researchers' Perspective***

- Some researchers, although they are interested to work with innovative farmers, found the data generated from the participatory works where farmers are taking the lead, difficult to use it in the conventional statistical methods of analysis. On the other hand, it is equally, if not more difficult for them to use easy language to communicate with the farmers on statistical jargons and concepts.
- Many researchers are not familiar with the concept of farmer innovation. They don't have the trust and confidence that farmers could innovate. Like many farmers do believe, most of the researchers have the attitude that research or "finding a solution to a problem" is the legitimate work of the intellectuals. Because of this reason, many are neither motivated to discover innovative farmers and establish partnership with them nor recognize their works.
- Some researchers comment, although the concept of participatory innovation development is fascinating, the methods, tools and operational guidelines are not adequately developed, in a sense that it could accommodate the interests and perspectives of diverse actors with different professional background, including formal researchers. Most importantly the approach do not have a particular tool to narrow the gap between the creative thoughts and findings of innovative farmers and the classical statistical approach- which is widely accepted by scientists. Because of this reasons researchers are forced to verify farmer innovations in their own way of doing researcher, before they recommend it for further use through the formal system
- It is some times frustrating for those researchers who may show interest to work with innovative farmers but have limited knowledge on the concept, to find out that there is no receptive

environment from the side of PID facilitators. The long established attitude of some PID facilitators that "formal researchers do not recognize the works of innovative farmers" made them from the onset, not to create a space for constructive engagement with the formal scientists, unless some one who completely surrenders him/her self to PID is coming to the club.

- Identification of innovative farmers is not an easy task for many researchers. It requires a different approach than the traditional survey method, which they are most familiar with. It also requires time, patience and commitment to travel long distances some times in a harsh environment. On the other hand, it is much easier for them to do research on problems identified through the formal survey. That is the comfort zone for many researchers. Therefore some are not ready to pay extra efforts to work with innovative farmers as long as they can do research and publish results in recognized journals with less time and energy.
- The government policy on research puts pretty much emphasis on participatory approaches. Apparently Farmer Research Groups (FRG) is established in many parts of the country where the public research organizations are operational. "Participation" is however very commonly understood in the formal research system from the point of view of involvement of farmers in testing newly released technologies by researchers. The absence of a clearly articulated policy statement that encourages identification and promotion of local innovations - in the national research and innovation policies of the country, slows down the progress of researchers and research managers to make a big jump in recognizing and systematically supporting IK and local innovations.

## **Conclusions**

Promoting farmer innovation, not only from the point of view of sharing and up scaling farmer made technologies and practices, but also the attempt to integrate the idea in research, extension and education institutions as one of the guiding principles of their works, is not an easy way to go. The legacy of the command economy policy of the communist regime and the decades history of central source of knowledge for development approach in the country, have made many people not to be keen in taking risks and trying new ideas for development. No one can therefore claim to have a complete knowledge and strategy on how to make the idea of promoting farmer innovation a success story. It is all about learning. Indeed, collective learning by like minded organizations and the farming community from their positive experiences and failures.

There is still long way to go, to make sure that IK and local innovations are considered as important assets in the research and development programs of state and non state actors in Ethiopia. The progress so far is encouraging but the learning platform in Ethiopia has to travel in a much higher wave length to respond to the challenges mentioned by those researchers who are keen to work on the idea as well the limiting constraints of farmers to innovate. For prolinnova it is important to focus on three important issues. First to bridge the gap between the working norms of the formal researchers and innovative farmers, from the point of view of improving communication and facilitating effective participatory knowledge generation processes. Secondly it is time for prolinnova to seriously think and develop methodological approaches and tools to support institutional and social innovations of farmers that have impacts on agriculture and NRM. And thirdly, Prolinnova need to put more energy and thoughts to further its initiatives on ways of making resources available to support farmers' innovations of their own priority.

It is increasingly witnessed that the formal institutions of research and development are showing greater interest on the newly emerging innovation system approach, which among others, provides better chances of responding to the diverse needs of the actors in the system. One of the added values of the new approach is that it is a multi stakeholder interaction, which creates more space for economically important actors, so that to help them play significant roles in the process. In places where actors of the market economy are greatly dominating the innovation system, the private sector and those working closely with the private sector are the "likely actors"

to significantly influence the processes and the outcomes. On the other hand, in places where the national economy is mainly based on smallholder agriculture, the innovation systems approach must make sure that the interest, knowledge, priority and innovations of the smallholder farmers are occupying greater space. In countries like Ethiopia, adoption of the innovation system approach by the major actors in research and development is an opportunity, provided that the main players in the system are the smallholder farmers, that makes 85% of the total population in the country. It is however equally important to determine the critical innovation value, to explain a logical linkage and fair balance between technical/institutional innovations, poverty reduction and environmental safety.

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