	PROLINNOVA Ethiopia PROmoting Local INNOVAtion	ISD INSTITUTE FOR SUSTAINABLE DEVELOPMENT	Poverty Action Network in Ethiopia [PANE]	Funded by The Rockefeller Foundation

Assessment report on community perceptions of and creative capacity to respond to change in Tahtai Maichew, Ethiopia

Strengthening Community Resilience to Change: Combining Local Innovative Capacity with Scientific Research (CLIC–SR)

A farmer during the field survey in Kewanit area of Tahtai Maichew

Hailu Araya[1], Eshetu Bekele[2], Hailu Legesse[3], Drar GebreMedhin[3], Yemane Kidane[3], GebreHiwot Zibelo[3], GebreMeskel Gidey[3], Haileselassie Gebremariam[4], Leul Haileselassie[5], Yohannes GebreMichael[6]

May 2013

[1] Best Practices Association (BPA) and Institute for Sustainable Development (ISD)
[2] Poverty Action Network Ethiopia (PANE)
[3] Tahtai Maichew Agriculture Office
[4] Aksum University
[5] Food Security Desk of the Central Zone of Tigray Region
[6] Addis Ababa University

1. Introduction

The project called Combining Local Innovative Capacity with Scientific Research (CLIC–SR) and funded by The Rockefeller Foundation is seeking to strengthen and promote local innovation. Under the umbrella of the PROLINNOVA[7]–Ethiopia (PE) network, the project focuses on the creativity of local people through building local adaptive capacities and strengthening community resilience to change, including climate change. CLIC–SR is based on the experiences of the Farmer Access to Innovation Resources (FAIR) project, which developed and piloted Local Innovation Support Funds (LISFs) between 2008 and 2012. It facilitated joint experimentation by local innovators and other experts, e.g. in the local government extension teams, with formal scientists through a process called Participatory Innovation Development (PID).

The CLIC–SR project is being implemented by PE in two districts: i) Tahtai Maichew (TM) near the ancient town of Axum (also written as Aksum) in Tigray Region, a district that was involved in the FAIR project, and ii) Enebse Sar Midir (ESM) in Amhara Region, which is a new operational area for PE but has some experience in facilitating farmer-led innovation and experimentation through previous work in the area by the nongovernmental organisation (NGO) AgriService Ethiopia (ASE). TM is just over 1000 km from the Ethiopian capital Addis Ababa and 250 km from the Tigray Regional capital Mekelle, while ESM is about 400 km from Addis Ababa in East Gojam Zone and about 200 km from the Amhara Regional capital of Bahir Dar.

This is a report on the initial field survey made in TM under the CLIC–SR project agreement. The aim was to document and assess how smallholders and their communities perceive the main changes affecting their livelihoods, including (but not only) climate change, and how they try to respond and innovatively adapt to these changes. The focus of this report is mainly on the innovations that show how smallholders are responding in the face of change. The study included field surveys and discussions with farmers in 2013 as well as recalling experiences from the previous PE activities mentioned above.

The study is crucial to understand and monitor the relevant change patterns and assesses farmers' strategies of coping with change, because farmers' perceptions are not often explored and reported adequately before an intervention is started. The communities' own adaptation initiatives and the local innovation processes were documented not only to give recognition to the creative capacity of the farming communities and to encourage their initiatives, but also to make other stakeholders in agricultural research and development (ARD) aware of this potential. Through this awareness and recognition of local innovation, these stakeholders are expected to become more open to engaging in farmer-led joint experimentation and documentation to better understand, validate and/or improve the local innovations.

[7] **PRO**moting **L**ocal **INNOVA**tion in ecologically oriented agriculture and natural resource management, an international network of state and non-state organisations in 21 countries; see www.prolinnova.net

2. Methodology used for the field survey

The field survey was conducted in Tahtai Maichew District (see Figure 1) in early 2013 by farmer innovators, technical experts in the TM District Agriculture Team (DAT), Best Practice Association (BPA), Aksum University (AKU), Institute for Sustainable Development (ISD) and Poverty Action Network in Ethiopia (PANE). BPA and the multistakeholder Axum PROLINNOVA Platform composed of TM DAT, AKU, ISD and BPA took the lead.

Four communities (*tabias* or sub-districts) of TM District were included: Mai Berazio, Mai Siye, Hadush Adi and Kewanit. The geographic areas where the survey was carried out had been identified by the implementing partner organisations based on the following criteria: population density, farm diversity, change in general, vulnerability to change, livelihood activities and accessibility. Information was gathered by means of a questionnaire, focus group discussions (FGDs) and existing reports and data.

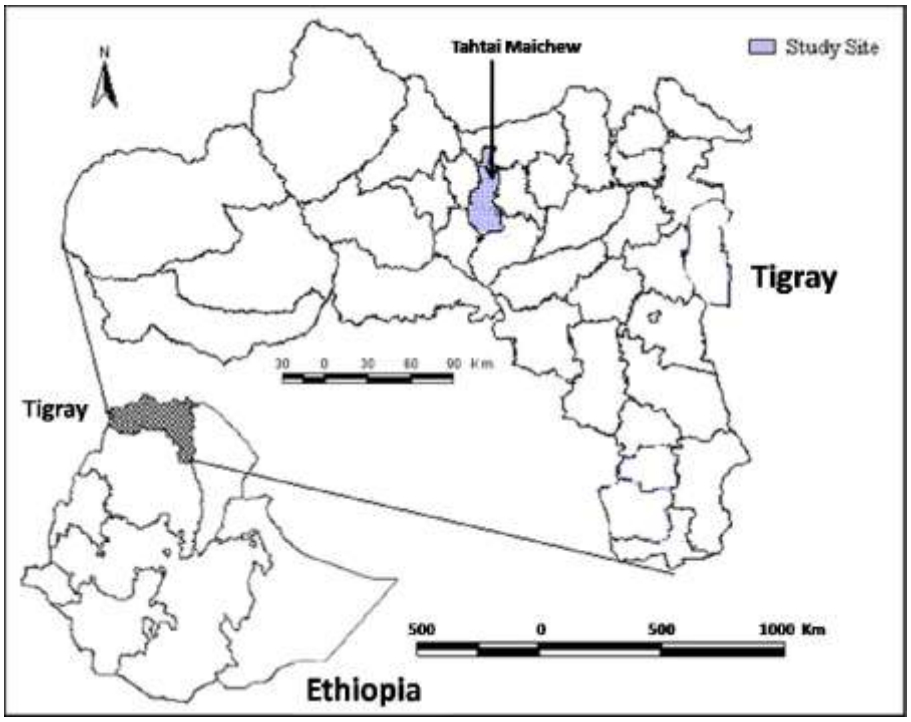

Figure 1: Field study area

The information gathered consisted of: i) general information (household profile, respondents' profiles, land holding, farm inventory, crop systems etc); ii) changes and responses to them (changes observed over time, their impacts, coping mechanisms, innovations developed); and iii) information from resource persons (market middlemen, radio, newspaper, community-based organisations (CBOs), NGOs, government etc).

Forty questionnaires were administered and eight FGDs organised. The groups for the FGDs were purposively selected and composed of men, women and youth from the four communities. Two FGDs were held in each community separately and with men, women and youth, by themselves and in mixed groups.

3. Basic socio-economic data related to the villages/communities

During the survey, the respondents identified improvements before the fall of the military government (before the 1990s) and afterwards (in the present time) in social services such as schools, clinics, waterpoints, roads, irrigation, flour mills, Farmers' Training Centres (FTCs), and extension offices with three development agents. All these social services are within 30–60 minutes walking distance from most of these villages. The distance to the nearest town is about 5–7 km, which means about 1–1.5 hours walk to reach the market, high school and District Administration.

The number of domestic animals and size of the cultivated landholding per family has declined very much since the 1980s, mainly due to the rapid increase in the number of rural households over the last 20 years. However, at present most farmers have improved the productivity of their farms by different means.

The youth complained that, although there is now peace in the country, there is a problem of unemployment since the fall of the military government. During the time of that government, the then young people became members of the army on both sides – the military government or the Tigray Peoples Liberation Front (TPLF) fighters – and, while in either of those armies, the youth could learn skills such as driving vehicles.

4. The changes observed

There have been many changes in TM District, and farmers give different reasons for the changes. For example, a change in climate has been observed since around the fall of Emperor Haileselassie (1970s) but a serious problem was observed after the drought of 1984/5. Two major changes observed were: i) after the 1984/5 drought; and ii) after the fall of the military government in 1991. Farmers gave as reasons for the changes: i) God is angry with human beings; ii) we cleared the trees from our environment; iii) war; iv) government change; and v) because of the increase in human population, the size of landholdings had reduced to less than one hectare per household.

There are many different types of changes, both positive and negative. ***Positive changes*** refer to those that have positive consequences in the community. After the change from the military to the current government, the extension service improved, leading to more focused support for farmers to produce more. Another change is that the extension service supports the sharing of experiences between farmers, and it praises and encourages farmer innovators.

Yet another change has been the intensive work in soil and water conservation (SWC). This has improved the lives of many farmers, because springs and vegetation cover re-appeared and small-scale irrigation has become possible and increasingly popular.

Table 1: The positive changes observed and their consequences

Positive changes	Consequences	Further developments
Wider spread of schools	More children enrolled in schools	More children employed in other professions than farming
More road access	Better market opportunities	Better income and prices
More health centres	Better access to health care	Healthier society
Introduction of electricity	Better life, health and information, e.g. students can study in the evenings and women can also do household tasks after dark	High demand for a better life, i.e. all family members want to get access to light, radio/TV, charging of mobile phones etc
Expansion of extension services	Access to new agricultural information for improved technologies	- More use of appropriate technologies - Better identification and recognition of the contribution of local innovation for development
Development of small new towns	Development of new services such as shops	Farm family members, especially women and youth, are involved in urban business
Soil and water conservation works	Vegetation cover improved	High water percolation and improved animal feed
	Improved other secondary forest products	Animal production improved, including beekeeping and honey production
	Re-appearance of springs	Development of micro-irrigation schemes

Negative changes refer to those that have negative consequences on the community. An example is the change in weather: more extreme temperatures, more unreliable rainfall, shorter but heavier downpours. According to both men and women farmers: "Rainfall variability has affected us very much: we can't stick to our plan because the rain comes at unexpected (unusual) times. When it comes, it is sometimes very heavy, sometimes very light; sometimes even the clouds disappear without bringing rainfall. Therefore, it [has] affected us very much in our planning for cropping. Even though the temperature drops after midnight, it heats up from the very early morning."

Table 2: The negative changes observed and their consequences

Negative changes	Consequences	Farmers' coping strategies
More intensive use of traditional energy sources (collecting firewood)	Women and girls need more time to collect firewood	Planting trees around homestead by men and women while the care of the trees is more by the women and children
Extreme weather situation	Low temperature in the morning and high temperature at mid-day make it challenging especially for women and children to go out to fetch water; this also affects vegetable crops as they dry up before maturing, e.g. tomatoes	Farmers use different mechanisms to retain soil moisture such as mulching under the vegetables and fruit trees, and making tied ridges along drainage channels between crops such as maize and sorghum
Deforestation and	Development of gullies,	Gully reclamation, attempts to control movement

uncontrolled movement of animals for grazing	particularly along paths used regularly by cattle	of animals; communities establish enclosures/exclosures where animals are prohibited from grazing
Reduced availability of animal feed	Shortage of animal products, milk, meat, calf, honey etc.; animals are also weaker and more vulnerable to diseases and do not reproduce regularly	Introduction of new types/breeds of animals such as cattle, goats, sheep, and chickens; however, these require special care and, if poorer people such as women-headed households take, e.g. chickens, on credit, the households may come under stress if the animals succumb to disease
More unreliable rainfall	Much reduced yields and even crop failure	- Diversification of farm products, e.g. into high-value products, e.g. spices grown by women and beekeeping for honey and wax - System of crop intensification (SCI) technologies where seedlings are raised in April and May in nursery beds and planted out once the rains have started - Adaptation of traditional mixed cropping (Niger seed and mustard seed in tef), e.g. tomato and chilli pepper with other field crops, particularly tef and finger millet - Focus by extension on selected short-season crops – farmers also have their own sequence of options
More unreliable market prices	Discouragement to diversify into new crops	Value addition such as drying and processing farm products, e.g. tomato
Wider spread of weeds	Increase in labour needed and reduction in yields	Farmers use weeds as inputs in low-external-input and sustainable agriculture (LEISA) such as using *Parthenium* as composting material
Wider spread of new and old types of pests and diseases	Increase in costs of pesticides	Farmers are exploring traditional and new ways of controlling pests and diseases
More schools in rural areas	More school leavers and increasing unemployment in rural areas	Improvements in farming practices and more outmigration; some local authorities, as in TM, encourage youth to form beekeeping businesses and help protect and make good use of protected areas
Spreading of built-up town areas	Cutting of trees for construction and firewood	Planting more trees such as eucalyptus trees used for construction and firewood.
Impact of the past civil war	High proportion of women-headed households	Men and youth joined the TPLF fighter group; women took up non-traditional activities such as ploughing with oxen and slaughtering animals
Soil fertility reduced and no access to chemical fertilizer	Reduced crop yields	The TPLF had its own extension group that introduced compost preparation and use in the 1980s

Most of the negative changes have led to farmers becoming innovative. For example, even though crop production was constrained for different reasons such as short and unreliable wet seasons, farmers improved their farming and farm products through different means, such as improving locally available inputs, e.g. compost, manure, SWC structures (modern and indigenous).

Generally, the impact of most of the negatives changes has been lower incomes and reduced or unreliable food supplies. The most seriously affected social groups in the rural communities are the elderly people and the women, while the youth are able to migrate out of the area to seek seasonal work. However, many farmers deal with the negative changes through their own innovative initiatives.

5. Farmers' own initiatives (innovations) to deal with these changes

From experience, farmers never sit and stay until a solution comes from somewhere. Instead, they try coping with the change to the best of their capacity. The following are some examples of how they do this. This section highlights selected innovations that are generally known among the farmers interviewed in the field studies as being useful in adapting to different changes experienced in TM District.

- ***Selection and diversification of crops and livestock***
  As things became critical for livestock and crop production, farmers started coping with the problems by:
  - Diversifying types of animals and reducing their number; this includes introducing new animal breeds into their herds to improve milk and/or meat production or to be more tolerant of having less feed. However, not all new breed introductions have been successful, e.g. even though the new chicken breeds are good egg-layers, they do not tolerate poor-quality feed, they easily succumb to prevalent diseases, particularly coccidiosis (Newcastle's disease) and they attract attacks by wild animals, e.g. mongoose and civet cat.
  - Changing cropping patterns through crop diversification and getting access to water for small-scale irrigation.
  - Shifting from growing long-season crops (finger millet and sorghum) to short-season crops (tef and barley), because farmers were faced with the problem that the longer-season crops did not mature and production declined.

- ***Soil fertility management***
  Many farmers were not familiar with using chemical fertilizer. Even for those who knew about it, it was not accessible. For example, during the military government, no part of TM District saw chemical fertilizer. Therefore, the TPLF extension group trained the farmers in their sphere of influence how to prepare and use compost, because it was the only option they had. Other farmers also innovated in other ways such as in SWC, using biofertilizer and manure, crop rotation, mixed cropping etc.

- ***Adapting long-season crop husbandry through transplanting***

  Another option started from a farmer priest's practice in Sherafo Tabia of Kilte Awlaelo District who was able to rescue his finger millet in the drought year of 1984/5 by transplanting young plants into a damp riverbed where they matured to produce seed. The information on this local innovation was identified in 2002 and then taken to TM extension by an ISD expert and then the TM experts adapted it for the husbandry of crops with long growing season (finger millet and sorghum) and farmers tried thus out. For example, in 2003, an elderly woman called Mama Yehanusu Atsbeha tried to adapt to the unreliability of rainfall by transplanting finger millet seedlings. She planted the seedlings in a 5 x 5 m area in a field, leaving a hand-space (25–30 cm) between the plants. She also broadcast seed of the same finger millet variety directly into the rest of her field. She applied compost to all of her field. The results were impressive. At an early stage, the plot of transplanted crop looked sparse, but later the plants became dense with many tillers, each having longer, denser fingers (panicles) than the seed-sown plants in the rest of the field. Mama Yehanusu got a yield equivalent to 7.6 t/ha from the transplanted crop, while the rest of the field gave her yield equivalent to 2.8 t/ha.

  Some agricultural experts from the DAT, a staff member of ISD and many neighbouring farmers were present when Mama Yehanusu harvested her crop. Not surprisingly, many farmers began adopting her way of raising finger millet seedlings before the start of the main rainy season. They have shown that Mama Yehanusu's field was not a one-time success. The average yield from fields of transplanted finger millet is 5 t/ha while the average yield with conventional broadcast sowing is around 2 t/ha.

  In 2009, another farmer in the district, Teklu, who had visited Mama Yehanusu, raised seedlings of finger millet and transplanted them into his 0.25 ha field, from which he harvested 11 sacks weighing 1.1 tons. This is equivalent to 4.4 t/ha. Because of the high production he got, he convinced his neighbours to use this technique.

  The practice of raising sorghum and finger millet seedlings and transplanting them into the fields after the onset of the rains was seen by many farmers, who realised that it is a good strategy to deal with the unreliable rainfall and to keep growing their productive long-season crops. Now, more than 300 farmers in the district and even more in other parts of the country raise seedlings of different crops before the main rains and transplant them into their fields when the rainy season starts. This practice is now being promoted by the government extension throughout the country.

  Now, DAT experts and formal researchers, at least in the Axum platform, are showing interest in joint experimentation with farmers because they understand that, whenever they work with farmers, the dissemination of the results will also work well. The SCI technology and push-pull technology (see below) are good examples encouraging many different experts to join farmer groups in TM to share the experience and continue working together.

- ***Local innovation in beekeeping to grasp new opportunities***

  As living became very hard, farmers discovered that beekeeping is very important for diversifying their income. Smallholder farmers near Axum have combined components of traditional and modern beehives and have developed new ways of managing bee forage in order to grasp new opportunities arising because of an improved environment for apiculture and the steady high demand on the local market for apiculture products. This is the story of innovation by several different smallholder farmers in TM District. Because of the change in climate, the small landholdings and the low levels of agricultural production, many farmers struggled to feed their families and tried to improve their incomes by diversifying their farming activities. Several smallholder farmers in TM now give increased attention to beekeeping. And many of these farmers, such as Mrs Abeba GebreKiristos, Mrs Almaz GebreWahid, Mrs Yibeyin Asefa, Mr GebreMichael Beza, Mr Abadi Redehey and Mr Haleka Gidey Hagos, have been innovating to improve production from beekeeping.

  Farmers recently became more creative in beekeeping because they observed that the SWC measures had led to more tree and herb cover and better niches for beekeeping than in the past. In addition, they observed that lower and more sporadic rainfall had led to more rapid drying out of certain types of bee forage in the dry season. The shorter wet seasons and the greater uncertainty in timing of the onset of rainfall had also made their crop production more risky.

  Some innovations in beekeeping that have been identified in TM District include: hybrid traditional-modern beehives, rearing queen bees and multiplying bee colonies, and new ways of managing bee forage. These innovations are inexpensive, they use locally available resources and they are easy for other farmers to try out and adapt. They are also suitable to deal with weather extremes. These innovations are spreading quickly in the district, regardless of the fact that their effectiveness has not yet been verified with scientific data.

- ***Innovation in post-harvest technology: example of tomato processing***

  Farmers' adaptation strategies have included crop diversification to generate income and feed their families; they are also starting to grow introduced crops. But neither the farmers nor the extension workers have a marketing strategy, and the farmers suffer from the fluctuations in market prices. For example, the price of tomato in 2013 went down from 24 Birr in the main growing season, when tomatoes were scarce, to only 0.25 Birr (1 USD = 18.5 Birr). This is because many farmers produce the same crop at the same time; moreover, tomatoes are highly perishable. Therefore, farmers are forced to sell at low prices.

  Mrs Brha Tadesse came up with a solution to this problem. She started drying her tomatoes and producing tomato slices and dried powder that can be kept up to six months. However, as these are foodstuffs, the processes for their production need experimentation and validation of storage and food safety. Here is where researchers from Aksum University and Axum Agricultural Research Center are interested in working together with Mrs Brha and other women exploring such ways of adding value to their tomato crops.

- ***Push-pull technology to protect vegetable crops from the Orobanche weed***

  In many part of Africa in general and Ethiopia in particular, striga weed and caterpillars of stemborer moths are the most difficult pest problems. They can destroy fields of maize and sorghum by up to 100%. After the spread of small-scale irrigation in TM, farmers observed that the *Orobanche* weed (locally called *silim*, meaning "a nap") affects tomato, cabbage and potato. The "push-pull" technology was developed and introduced to maize-growing farmers in Kenya by ICIPE (International Centre for Insect Physiology and Ecology) to protect against striga and stem borer. It involves interplanting of maize and sorghum with *Desmodium*, a legume. *Desmodium* produces a "smell" that pushes the female stemborer moths out of the field before they can lay their eggs on the crop plant. At the same time, under the soil, the *Desmodium* roots produce a chemical that causes the striga seeds to germinate, and then die before they can attach themselves to the roots of the crop plant.

  A farmer in Kewanit village, Gebreyesus, brought an example of *Orobanche* attached to a tomato plant to a meeting of researchers and farmers held in Aksum University focused in evaluating the push-pull technology in April 2013 The example showed how the *Orobanche* weed tightly trapped the root system of his tomato plant. But it is different from striga. Gebreyesus and other farmers who are experienced with it said that the *Orobanche* has no flower, unlike striga. Whenever it appears in a field, it stops the growth of tomato, potato and cabbage. After Gebreyesus convinced the participants of the April 2013 meeting, he took the initiative to conduct an experiment involving *Orobanche* in two plots: in one plot, he planted tomato with *Desmodium* and, in the other, tomato without *Desmodium*. After 3–4 months, he found that the plot interplanted with *Desmodium* was free from *Orobanche* while the other plot was full of *Orobanche*. The Axum PE platform members, including other farmer innovators, visited Gebreyesus' experiment and agreed to use this technology as a solution in the future to safeguard their tomato, cabbage and potato crops from being attacked by *Orobanche*.

- ***Reclaiming a gully to make a water reservoir***

  Mrs Medhin Gereziher is a widow who lives with her five children in Mai Siye Tabia (sub-district). She has less than one hectare of cultivated land, beside a small river at the bottom of a deep, wide and long gully that was made by fierce flows of runoff water carrying soil, silt and stones. The gully started to develop in the rainy season after the drought of 1984/5. Every year, it got deeper and wider, eating into the fields. It was risky to cross not only during the rainy season but also during the dry season. Medhin and her neighbours sometimes found cattle and people who had fallen to the gully bottom.

  Immediately after the main rains, the water in the gully bed used to disappear. Then, in 1999, when the local community started building SWC structures in the upper catchment, she saw that the gully bottom remained wet and the water stayed flowing for longer than before. She wanted to plant vegetables, which have a good market in Axum, by using this water for irrigation immediately after the main rainy season, i.e. before the water course dried out. So, with the help of her family, she started to retain the water from flowing down by building a retention wall made of earth across the width of the gully. The

vegetables she grew with the water gave her a good income from the first harvest. But, every year at the end of the rainy season, she had to rebuild the earthen retention wall because the force of the water in the rainy season would destroy it.

Medhin never gave up because of the good income from the sale of the vegetables. She increased the size of the retention wall so that the amount of water and the length of time it was available improved from year to year. At the same time, she started planting fruit trees in her farm and elephant grass on the sides and bottom of the gully. This has stopped the gully from getting deeper and wider.

By 2010, there were some 27 farmers in her neighbourhood who had copied what she was doing, because they saw the advantages she gained. The experts in the DAT also realised that she was contributing to improved local agricultural production and natural resource conservation, and she could become an example for other farmers. They therefore decided to support her efforts and those of the nearby farmers with cement, sand, stone, and expert labour to build a permanent dam across the width of the gully with the top of the dam wide enough for people to walk safely from one side of the gully to the other. This support has improved the relationship among the farmers and extension workers in the District, and more farmers now listen to their advice and offer their experiences.

Since the last ten years, the water held by the checkdam has been serving not only Medhin but also another 27 farmers. The waterway is now a small river that has water year-round and other farmers downstream have taken up irrigating at least some of their fields throughout the dry season.

Medhin has transformed her farm into an integrated and diverse system with beekeeping, a better breed of dairy cow, and a productive fruit orchard on the land between her house and the gully. She also includes multipurpose trees among the Napier grass growing in the gully. She has become one of the recognised food-secure families and a model farmer in the District.

- **Adapting to the challenge of climate change through water harvesting**
  This is an example of local innovation in the face of increased uncertainty of rainfall. It was stimulated by the suggestion of a DAT extension agent who told farmers to water their fields with river water after early cessation of the rains. This farmer – *Qeshi* (Priest) Hagos WoldeMariam of Hawesta in the southeastern part of TM District – tried to store water in microbasins and was then regarded by the extension agent as a "model farmer" because he had developed such a good idea that would also be useful for other farmers.

  Like many other farmers, *Qeshi* Hagos was suffering from the late onset and early stopping of the rains. He found it difficult to grow maize in his farm because most of the land is sloping and the soil shallow. The year 2010/11 was a particularly bad rainy season, and it looked as though all crops were going to fail to mature. The extension agent had told the farmers to water their fields rather than see their crops fail, but this was tiresome work. *Qeshi* Hagos had realised that, if he watered his field, the water would quickly run off because of the slope. During rainfall, he had noticed that water collected and stayed longer

in shallow pits in the soil, so he built small soil bunds between his rows of maize to make tiny basins in his field to retain the water. He managed to capture the last rain in these small structures. He saw that the water stayed longer in these microbasins, while the other parts of his field dried up.

From then on, *Qeshi* Hagos built microbasins between the rows throughout the field, and this has become his standard practice. When the rainfall is good up to about mid-August, he opens the basins to prevent waterlogging of his maize crop. This is because rainfall is generally reliable until then, but farmers are not sure about its frequency and amount after mid-August. He then closes the microbasins so that they hold back the water and his maize can mature.

Qeshi Hagos' maize grows with deep roots and strong stems, each of which produces more than one cob. He is recognised by the district administration and extension agents as a farmer innovator with good practices.

6. LESSONS LEARNT

The study of how smallholder farmers in TM District perceive changes affecting their farming and how they respond innovatively to these changes has provided lessons for all who were involved in the study:

- Smallholder farmers have made many and diverse innovations in their daily life. They have developed several options to deal with different problems. However, many people do not recognise and appreciate their innovations and services.
- Identifying innovations is not a one-time process. Much time is required for a thorough process of identifying local innovations. The survey alone is not adequate; constant follow-up with the innovators identified is needed to obtain more details about the innovations. This will facilitate discussions with the farmer innovators and other community members to identify ways to improve and spread their innovations as well as to discover other innovations in the locality.
- The different stakeholders view an innovation differently: what one person regards as an innovation may not necessarily qualify as innovation for another. What is important is that it is new to the locality and is useful for people there.
- Some local innovations can be easily shared and tried out by other farmers. But some require joint experimentation for validation and verification by both scientists and farmers. This will convince agricultural experts, researchers, academics and policymakers to help in disseminating the good ideas of farmers.