

Mainstreaming gender considerations in Gumara-Maksegnit watershed

Reducing Land Degradation and Farmers' Vulnerability to Climate
Change in the Highland Dry Areas of North-Western Ethiopia

TECHNICAL REPORT OF EXPERIMENTAL ACTIVITIES
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Synthesis

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Summary Report

Land degradation and moisture stress have become major threats to the farmers' livelihoods in Gumara-Maksegnit watershed. Their land is no longer as productive as it used to be; rainfall is neither predictable nor sufficient; and access to alternative sources of water, while improving, is still limited. These, combined with other challenges including access to sufficient credit and agricultural inputs have resulted in reducing household income in the area.

The project operated on the premise that rural communities depend on a variety of livelihood strategies to meet their basic needs - these include growing crops, raising livestock, and a pursuit of alternative income generating opportunities. Adopting a holistic approach allowed the project to appreciate the complexity of the challenges and seek solutions through multiple interventions. The gender mainstreaming actions of the project were an important component for the implementation of this approach. All the researchers engaged in the project were trained and equipped with essential tools to mainstream the key component of gender in all their activities. Hence due attention was given to equitable participation of women in all activities in the watershed.

In addition, the project has introduced fuel-saving stoves commonly referred to as the "Mirt" stove in order to reduce women's drudgery, improve their health by reducing the exposure to open smoke, and eventually to provide young unemployed women with opportunities to generate income. This activity was implemented with budget support from CGIAR project "Strategic Interventions to Simultaneously Reduce Women's Drudgery, Youth Unemployment, and Ecosystem Degradation" (CRP-WLE, 2014-2016) and is still ongoing in the frame of that project. Overall 800 stoves were produced and distributed to date as part of a "stove-for-work program": the households that received the stoves worked for the project, dedicating over 5,000 hours to maintain/construct water and soil conservation structures, and planting over 40,000 trees. Data on stove impacts on livelihood were collected and are being analysed.

1 Materials and methods

Conceptual framework

The activity aimed at introducing and monitoring the use of the energy efficient stoves was designed and implemented in close consultation and collaboration with national systems (GARC; District offices of Agriculture, Water and Energy, and micro-enterprises; etc.) and NGOs operating in the area. It was implemented to improve rural livelihoods, and with the following expected results:

- Reducing women's drudgery
- Reducing deforestation (reduced demand for firewood),
- Improving soil fertility (increased application of manure to the soil, manure that is increasingly used as firewood instead),
- Reducing health risks for women and children (reduced exposure to smoke and open flames),
- Creating income generating opportunities for young landless women – who produce and sell the stove,
- Actively engage the community in NRM activities through stove-for-work programs – building on existing and on-going efforts to mitigate land degradation
- Boost the local economy by using locally available inputs to produce the stoves

The used stove model, and its technical characteristics, are known in Ethiopia and in the Amhara region (Figure 1).



Figure 1: Energy efficient mirt stoves at household location in Gumara-Maksegnit watershed.

In this project, they were however introduced as part of a strategy based on a holistic evaluation of the community needs, and with the aim of assessing their impact by means of the Sustainable Livelihoods Approach. According to this approach livelihood comprises the capabilities, assets, and activities required for a means of living. It is deemed sustainable when it can cope with and recover from stresses and shocks and maintain or

enhance its capabilities, assets, and activities both now and in the future, while not undermining the natural resource base. The sustainable livelihoods framework helps to organize the factors that constrain or enhance livelihood opportunities and shows how they relate to one another. A central notion is that different households have different access livelihood assets, which the sustainable livelihood approach aims to expand. The livelihood assets, which the poor must often make trade-offs and choices about, comprise:

- Human capital, e.g., health, nutrition, education, knowledge and skills, capacity to work, capacity to adapt.
- Social capital, e.g., networks and connections (patronage, neighbourhoods, kinship), relations of trust and mutual understanding and support, formal and informal groups, shared values and behaviours, common rules and sanctions, collective representation, mechanisms for participation in decision-making, leadership.
- Natural capital, e.g., land and produce, water and aquatic resources, trees and forest products, wildlife, wild foods and fibers, biodiversity, environmental services.
- Physical capital, e.g., infrastructure (transport, roads, vehicles, secure shelter and buildings, water supply and sanitation, energy, communications), tools and technology (tools and equipment for production, seed, fertilizer, pesticides, traditional technology).
- Financial capital, e.g., savings, credit and debt (formal, informal), remittances, pensions, wages.

Implementation and data collection

Ten landless and youth women were trained by the project and were organized into a stove making group. They produced 800 mirt stoves by using materials made available by the project. The project paid the stoves which were distributed to the households in the watershed with the commitments of the households to spend an average amount of five days working on soil and water conservation structures construction or maintenance, or planting trees in the watershed ("stove-for-work program").

In order to assess the impact of the stoves on livelihood, the following tasks were (are being) performed:

- Verifiable indicators were identified to measure the changes introduced by the stoves in relation with each of the five capitals listed above.
- Baseline data were collected in 2014.
- Detailed impact data were collected starting from 2015
- Data are being analysed to deliver final results by the end of 2016 as planned in the frame of the co-funding CRP-WLE project.

2 Results

Overall 800 stoves were produced and distributed to date. According to the established “stove-for-work programs” the households that received the stoves worked for the project dedicating over 5,000 hours to maintain/construct water and soil conservation structures, and by planting over 40,000 trees in the watershed’s hill sides most vulnerable to soil erosion.

Both data and impact data on stove introduction were collected and are being analysed. The following table summarizes the original verifiable indicators identified by the project.

Livelihood Capitals	Expected outcomes	Objectively Verifiable indicators
Human Capital	<ul style="list-style-type: none"> Improvement in the health of women and children Increased skill for women in making fuel saving stoves Reduced drudgery for women Empowerment of women in assuming community mobilization roles and decision making 	<ul style="list-style-type: none"> Reduced exposure to smoke Number of stove producers trained Number of hours spent for fuel wood collection Number of hours saved for other activities Number of initiatives taken by producers as promoters of the technology
Natural Capital	<ul style="list-style-type: none"> Reduced deforestation Rehabilitation of soil and water conservation structures in the watershed Improved soil fertility through application of manure which would otherwise have been used as fuel 	<ul style="list-style-type: none"> Reduction in use of firewood at the household level Number and type of soil and water conservation structures maintained/constructed, total area and/or total length in Km covered Number of households with increased application of manure to their land Quantity of manure applied
Financial Capital	<ul style="list-style-type: none"> Increased income for young and landless women who produce the stoves Boost to local markets that sell the raw materials required for making the stoves (externality) 	<ul style="list-style-type: none"> Increase in net income Total cost of inputs (cost/stove * total # of stoves produced) Opportunity cost
Social Capital	<ul style="list-style-type: none"> Increased community participation and mobilization 	<ul style="list-style-type: none"> Number of members of the community who participated in community services
Physical Capital	<ul style="list-style-type: none"> Fuel saving stove 	<ul style="list-style-type: none"> Number of fuel stoves distributed in the watershed Only for the producers of the stoves – what physical capital (fixed assets) accumulated

3 Conclusions

Widespread use of these stoves by the watershed communities is expected to reduce pressure on the natural resources, notably on the forests. On the other hand, in addition to the impacts on livelihoods, it is worth noting that the women group involved in the activity has been recently upgraded into a small enterprise cooperative operating a small selling point at Maksegnit town. Besides building their own chance to give continuity to their stove-making business, they also identified two alternative business options addressing animal fattening and traditional food processing and marketing.

***NOTE:** The data presented in this report are currently being elaborated for scientific publication, thus some of them are not final. The aim of this report is to summarize the nature and quality of the activities conducted and of the dataset generated, and to illustrate the main results obtained.*

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