

Asset building of Female Headed Households for resilience building

REALISE targeted households are resource poor farmers who are vulnerable to recurrent shocks and survive through PSNP transfer and by employing various coping strategies. Vulnerability to shock is particularly severe for female headed households. Asset building and consumption smoothing of these resource poor farmers played a crucial role towards improving their livelihoods and withstand shocks. REALISE intervention on dairy goats has strong linkage with household income, nutrition, and health. Interventions to this end were matched to the skill and experience of beneficiaries in the intervention areas. The dairy goat intervention targets female headed households who are mainly responsible for their day to day management. Dairy goats are an important asset to women, important sources of milk for the family, and easy to manage.

Dairy goat is one of the interventions implemented in Mehoni and Ahferom *woredas* with 15 and 20 female headed beneficiaries respectively.

Medhin G/Kidan, 48 years, lives in Ahferom *woreda*. She is a household head and a mother of eight children; three boys and five girls. She was one of the 20 female household heads targeted for the dairy goat intervention by REALISE Mekele cluster. As part of this package demonstration, Medhin has taken training, arranged a shelter and finalized all preparations like forage preparation, veterinary service and nutrition. Furthermore, she has received two pregnant dairy goats and one buck in December, 2018 through revolving credit. Luckily, within two weeks of receiving her goats, one of them gave birth to twins. For her, this is an encouraging sign that there is hope of a better future for her and her children. She is managing her goats very well and is enthusiastic about the changes coming into her life.



Medhin, head of household and mother of 8 children has received dairy goats. She said *“By managing my goats well I hope to save money, send my children to school, feed my family nutritious food, and build a new house enough to accommodate my family, and be a model to others”*.

High yielding and early maturing sorghum and wheat varieties become a means for food security for female headed household

Although the formal seed system started about six decades ago in Ethiopia, it still remains limited to a few crop varieties. Hence, most of the varieties released by the national agricultural system have not yet been commercialized. Moreover, women farmers have benefited less from the formal seed system and this affects women farmers' access and control of seed and thereby affecting their food and nutrition security.

One of BENEFIT Partnership programmes, ISSD has been following a "citizen science" approach where citizens (volunteer women and men farmers) participate with agricultural scientists to jointly address challenges of the seed system. In its effort, women participate equally with men in seed demonstration on farm and FTC sites, training, field days, seed fair and seed exhibition.

Wahid Tesfay lives in North Western part of Tigray region, Asgede Thimlal *woreda*, Dedebit *kebele*. She is divorced and has five children. Her land size is eight hectare. The *kebele* Agriculture Office selected her to join ISSD programme two years ago.

She said, "I never participated in any project activities before."

The area where Wahid lives is very hot and frequently affected by drought. Since the need for improved drought tolerant varieties is crucial for food security in her community, Wahid voluntarily worked with the ISSD project to test three types of drought resistant improved

sorghum varieties on her land and select one that she preferred.

She received training about land preparation, fertilizer application and row planting. She planted the three varieties that she received from ISSD two times (in 2017 and 2018). In 2017, she planted the varieties early (in June) and the plant matured early. Unfortunately, due to grain eating birds she only collected some amount of seed from each variety (16kg, 20kg and 10kg). But she tested what she collected again in 2018, in July when there is less number of birds. But again she lost some of her harvest due to drought that year.

Despite the challenge, she said, "When she compares the new variety with local one, the new variety matures early, convenient to harvest (short in size) and not affected by wind easily. Also livestock like it." She indicated that she has learnt from this effort that using improved varieties improves productivity and income. She starts applying the agronomic practice she learned on other crops (like sesame). She also plans to exchange the seed she harvested with higher market value food crops.

The programme shows that participation in agriculture research intervention improves women's knowledge and skill about agronomic practice. And women are capable to test agricultural technologies, do analysis and provide appropriate recommendations.



Wahid has learnt from ISSD programme that using quality seed of improved varieties, improves yield and income. She aspires to exchange the seed she harvested with higher market value food crops. When she compares the new variety with local one, the new variety matures early, is convenient to harvest (short in size) and not affected by wind easily. Livestock also like to eat the stem of the plant.

High yielding and early maturing wheat variety - a means of income for female headed household

Letebirhan Tsehayu lives in central part of Tigray region, Adwa *woreda*, Endabagerima *kebele*. She is a widow with five children. The *kebele* Agriculture Development Agent selected her to join ISSD intervention two years ago. Her livelihood depended on agriculture.

Although the area where Letebirhan lives is mid-altitude, her land size is very small (¼ hectare) and frequently experiences rain shortage. To maximize the benefit of her limited resource, she voluntarily took training about agronomic practices (land preparation, row planting and fertilizer application) and received seed of three varieties of wheat to test on her small plot of land and choose the variety she preferred.

Letebirhan said her life was entirely depend on productive safety net programme but now she aspires to provide seed to the seed cooperative found around her resident to earn income.



After she tested two times, she selected the variety, which is productive, disease resistant, early matured and short in size (easy to harvest). She harvested 80 kilos from one of the varieties. She said "Her life entirely depended on productive safety net programme before, but now she aspires to provide seed to the seed cooperative found around her resident to earn income". She became aware about seed cooperative because of the ISSD. She joined the cooperative without paying membership fee but she is informed that she will start paying the expected fee after she starts providing seed for the cooperative.

Aheze Negash lives South Eastern Part of Tigray, Agereselam *woreda*, Hadinet *kebele*. She is head of her household and has five children. Her land size is half a hectare.

She joined ISSD project in 2009. She received quality seed of three varieties of barley, took training on land preparation, fertilizer application and row planting, and attended field visits (farmer to farmer experience exchange programme organized by ISSD). She planted two times the three varieties she received from ISSD and she chose the variety that tolerates heavy rain. She said she gets much less from the local variety when compared with the new (25 kilo from one of the best varieties). She also applied fertilizer as per the recommendation from ISSD and she think that this help her to be productive.

Ahza said "I will keep some seed for the next planting season, and either exchange the rest with high value crops like teff and white wheat for home consumption or sell it. The income will help to educate my children."

She plans to save some amount for next planting season and either exchange the rest with high value crops like teff and white wheat for household consumption or sell it. The income helps to educate her children.

The programme shows that engaging female headed households in seed intervention can help them enhance their household food security and income so that their children can get access to education.



Increasing women membership in cooperative - a means to enhance women's access to agricultural trainings and technologies

Although women have significant role in informal seed system of Ethiopia, ISSD identified that the number of women members in local seed business cooperatives is none (zero) because of the socially given role to women and men in the targeted community. Thus, in order to improve women's membership and leadership role in the local seed business cooperatives, ISSD designed strategies. The strategies include conducting intensive discussions with the cooperative executive committee members, including increasing women's membership and leadership as one activity in the annual plan of the cooperative and revising the cooperative bylaw.

As a result, the number of women members in Fate Muricha Dicha seed business cooperative reached 34 out of 118 total members (until June 2018) from only one member in 2017. And the number of women in another cooperative called Tokidchone (Keffa) reached 15 out of 105 total members (until June 2018) from zero women members in 2017.

Mana Bilate lives in the Southern Nations, Nationalities and Peoples Region (SNNPR), wolayta zone, Damot Tale *woreda*, Fatena Muruta *woreda*. She is married and a mother of nine children (six boys and three daughters)

She became the member of Fate Muruta Dicha Seed Production and Marketing cooperative, a local seed business cooperative in 2018. She became a member after ISSD trained the cooperative leaders about gender mainstreaming.

The cooperative produce and sell mainly improved wheat seed, which is agroecologically



Women who joined Fate Muricha Dicha seed business cooperative after the ISSD intervention

viable, disease resistant and has good market value.

She said, "Previously, I used to support my husband in farming using my indigenous knowledge but after I became a member of this cooperative, I received trainings about improved agronomic practice. Therefore, I can independently practice agriculture, such as sowing, identifying the good and bad quality seed and the difference between seed and grain. We used to put grain and seed together in one sack, and either we sell or consume or sow from it. But now, after the training, I know seed has life and needs care so I stop storing crop and seed together. The other thing is I can access machine that can harvest, thresh and clean the seed from the cooperative, and that reduces my labour and time."

Increasing women membership and leadership in cooperatives to improve women access to improved agronomic practice, technologies and market needs intensive work and commitment of programmes. It encourages women to practice agriculture confidently in the absence of their husband if they are trained and have access to technologies.



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Using seed storage technology from local low cost materials that are easily accessible

Women in Hararghe practice different methods of seed storage. The common seed storage practices include: hanging the head of the crop from the roof or trees (sorghum and maize), sacks (haricot bean, potato, maize, chick pea, wheat, and sorghum), underground storage pits (maize, sorghum), and mix with soil (haricot bean). The local materials used in seed storage include: treating the seed with plant materials/herbs/leaves like Kinchib (*Euphorbia tirucalli*), tobacco, pepper, and eucalyptus); cow dung, animal urine and smoke. Sometimes pesticides are also used to protect seed from storage pests which have some limitations particularly with introduction of improved varieties.

Main challenges raised related with local seed storage technologies are (i) loss of germination capacity and viability especially when the seed is not properly dried; (ii) unlimited availability of local hermetic materials; (iii) limited knowledge about the required standards to maintain seed quality especially seed moisture before and during storage; and (iv) limited use of recently introduced hermetic technologies. Thus, ISSD conducted training of trainers on post-harvest techniques, technology diffusion through farmers to farmers experience exchange and practical demonstration on how to utilize the new technologies, to improve seed storage and management practices in the Hararghe area.

W/ro Sadiya Ahmed, 40, married, with seven family members lives at Waltane *kebele* of Doba *woreda*, East Hararghe Zone in Oromia National Regional State. She is one of the women who

benefited from ISSD intervention and learned how to use recycled glass and plastic containers that area easily accessible and low in cost to improve seed storage. These containers are robust and could be used repeatedly over a number of years. The containers are glass jars, vegetable oil jerrycans, cans and soft drink / small water bottles.

Previously, she was using different methods to protect her seed from pests. For instance, she stored sorghum and maize seed by hanging from her roof while wheat, common bean and chick pea seed were stored in locally available sacks.

Previously, she participated in training and awareness creation programs on how to manage a trial, evaluate its performance from agronomic, yield, food and nutrition value etc. perspective and select best varieties of her own preference for next planting and exchange. Now she learned how to best store her preferred seed for next season. She said "ISSD programme gave me an alternative of different common bean varieties other than the one I used for long years and how to protect and effectively store my seed for the coming season."

In general, the project assisted her to differentiate varieties that have quality, improved her knowledge about seed, how to easily access and use durable tools for seed storage and overall increased her confidence in seed production. She participated in seed-variety promotion activities (field days, seed fairs, seed exhibition) aimed at increasing demand for improved or farmer preferred varieties at local level (on farmers plot and FTC sites).

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Improved Potato Storage to Enable use of own seed for next planting season

W/ro Juhara Adame, 38, married with eight family members lives in Jiru Gamechu *kebele* of Gurawa *woreda*, East Hararge Zone in Oromia National Regional State. She is one of ISSD programme targets and cultivated 0.38 ha farm.

As one of the beneficiaries of ISSD programme, she received consecutive trainings to build her skills and knowledge on potato seed, including on technologies to produce quality seed and how to store the seed using local materials without damage and losing its originality. Now she is confident to talk about potato seed and can advise her neighbours and relatives. She said "Previously, it was very hard to get access to quality seed for potato and didn't know how to store potato seed safely. For instance I used plastic sack for storage, which did not protect the seed from pests. So I had to buy seed from the market. The source of market seed is not known and it may germinate or not. Following my trainings from ISSD, I am aware of the relevance of quality seed, how to use seed related technologies and how to store it properly and, provided me quality potato seed and thought me how to store it. Currently, I can use potato seed at any time for planting from my store and share with my neighbours."



W/ro Juhara now understands about the importance of quality seed and proper storage. She is confident to talk about seed and give advice to her neighbours and relatives. She knows how to store seed for long time from local materials without losing or damaging the qualities of the original seed.

Unlocking the potential of wheat farmers in Omonada district, Southwestern Ethiopia

Chelekleka Donga *kebele* is located in the center of Omonada woreda about 84 km from the zonal capital of Jimma town. Driving up a steep narrow dirt road, you see small plots of the lush wheat fields alongside small plots of barley, teff and faba beans. In just three years, with close support from CASCAPE and its partners, farmers are using new improved varieties and applying new agronomic practices, unlocking the great potential and promising resources in the area. In spite of wheat relevance and its suitability to the area, because of fragmented land use and traditional farming practices, wheat productivity in the areas has always been low.

Alifya Abasharaf, a 35 year-old mother of five living in a very traditional farming system in Omonada district in south western Ethiopia is beneficiary of CASCAPE-JU. With the support of the project, Alifya improved her livelihoods by transforming her small plots of land into income producing businesses. As gender being the central part of CASCAPE, as a result Alifya was selected to be one of the two women to be involved in testing of improved wheat varieties. Alifya remembers how it used to be prior to CASCAPE intervention. Sitting on a wooden stool in front of her cleanly kept front yard, Alifya remembers how it used to be prior to CASCAPE intervention. *"Farming is what we inherited. We had no academic background but followed what we learned from our parents. From 0.125ha of land, I used to get a maximum of 2 quintals of wheat, which was just enough to feed my family. And most of the time, we had*



Alifya Abasharaf, a 35 year-old mother of five: *"Using the new variety and the new techniques, I have doubled my yield. Last year, 2017, I grew wheat on 2250m² of my land and got 12 quintals (54qt/ha). We kept what we needed for home and sold the rest as seed or exchanged them with grain. With the money I got, I bought fertilizer, things I needed at home and a heifer from a farmer I met during one of the field days organized to showcase the new variety and practice. No more selling my livestock."*

to sell our livestock or products from them such as cheese and butter to buy other things needed at home – things like sugar, salt, cloth etc. and we always struggled to buy inputs for the next season", Alifya said.

CASCAPE's intervention to improve wheat production in Omonada woreda started in 2016. As all CASCAPE interventions, it started with understanding the specific needs of the farmers, the potential in the area and finding innovative solutions using participatory, bottom up planning. The woreda was selected for its high potential for producing surplus wheat with close consultation with government offices.

Leveraging CASCAPE years of experience on wheat and a thorough understanding of specific problems farmers face, the programme started identifying, testing and verifying best practices to better understand which wheat variety and agricultural practice works best in the area. This phase involves local bureaus of agriculture, regional research institutes and farmer research groups. Seven farmers willing to learn and share new way of doing things with the surrounding farmers were selected for demonstration trial. The programme provided six improved varieties from the Ethiopian Seed Enterprise, one local variety and necessary inputs to start the testing and adaptation trail on each farmer's 10m x 10m (100sqm) plot.

In 2017, the programme provided 17kg of quality seed to each farmer and gave new agronomic technique training on 10 farmer plots where they practically learned how to apply the methods on their own 0.125ha of land.

Today, Chelekleka Donga PA farmers' perception about growing food to sell is changing fast. She said, *"one thing I have learned is with the right variety, right agronomic practice, and support from the right expert we can produce much more. Now, we know how to use our land and had we done this before our lives would have been so different".*

The process that CASCAPE follows-bottom up, stakeholder involvement coupled with social inclusion approach into consideration helped the innovation to be taken up, be successful and multiply with the farming community and change their livelihood.