

AGRA

knowledge series



Creating Sustainable Supply Chains for Hermetic Bags- AGRA'S Support to Smallholder Farmers in SNNP Region of Ethiopia

Context

AGRA is supporting a consortium of 3 NGOs in the SNNPR Region of Ethiopia to promote market oriented agriculture for selected crops of wheat, teff, maize and haricot beans through facilitating the supply of crop productivity enhancing inputs, promoting good agriculture practices, post-harvest technologies and facilitating access to structured markets for target smallholder farmers in five zones and ten woredas of the regional state.

One of the production bottlenecks identified and supported by the consortium is how to reduce post-harvest losses in the project area which are estimated to reach between 10-30%. The losses usually start at farm level and potential remedies also need to address this level. Major factors contributing to post harvest loss of grains in the area include attacks from weevils and rodents, and moisture or growth of molds. Among these, weevil's attack was reported as the biggest and most common cause of post-harvest loss.

Intervention & Approach

During the 2019-20 harvest season, the consortium procured 1,000 Hermetic storage bags (PICs bags)

of 100 Kg in size from SYS Company based in Addis Ababa and provided training on its benefit comparing it to traditional storage bags and distributed to FTCs, SMEs, Cooperatives and Model farmers for promotion and demonstration purpose.

The PICs bag consists of two layers of polyethylene and a third layer of woven polypropylene. Each sack needs to be closed and tied separately, one after the other, to create an air-tight environment inside, kill insects from lack of oxygen and prevent grain from rotting. The bags are produced by local industries in Addis Ababa.

During the promotion events, 10,378 smallholder farmers (1,300 women) were able to learn about its importance and application to fight weevil infestation of their maize in storage.

Following the promotional events, the AGRA consortium organized a B2B linkage platform between SYS company and major farmer cooperative unions in the region that are involved in the purchase and distribution of agricultural inputs. These included Melik Union in Silte zone, Admas Union in Gurage Zone and Licha Farmers' Cooperative in Hadiya Zone of the region.

The business linkage platform resulted in the creation of business relation between Melik Union in Silte Zone which has 51,000 SHF members and SYS PLC in which the former purchased 10,000 units of PICs bags from SYS in two rounds and sold to Primary Cooperatives who in turn sold the bags to the SHF.

The promotional efforts by the consortium also boosted the business of local vendors who were in the PICs bag business before the start of the project and

Ato Shafi is one of the vendors who has benefited from the promotions and demos. Previously he was struggling to sell 1000 units due to lack of awareness. After the AGRA supported promotions, he was able to sell 10,000 units directly to SHF and through deploying a youth group who collect the bags from his shop at discounted price of 2 birr per bag.



who failed to secure enough demand for the bags due to lack of appreciation regarding the benefits of the PICs compared to the traditional bags by SHF in the project area.

Even though the price of the PICs is higher than that of the traditional bags, farmers have been gradually convinced that it is worthwhile to invest in the bags given the comparative gains demonstrated to them by the project as show in Table below:

Table 1: Benefits of PICs bag versus traditional bags reported by farmer

	Hermetic bag	Traditional bag
1. Protection from weevil, termite.	Yes	No
2. Length of storage	> 6 months	< 2 months
3. Cost of fumigants	No	Yes
4. Sustainable distribution channel	Not yet	Yes
5. Consumer preference	Higher	Lower
6. Price of 100 kg bag	48 birr	15 birr

Price is one of the seemingly visible points of departure between the PICs versus the traditional. A 100 kg PICs is sold at 48 birr when it reaches the project area while the traditional is sold for 15 birr. The PICs is used for 2 to 3 harvesting seasons while the traditional one is used for only one season. The PICs do not require fumigants which cost 28 birr per unit which are applied on 2-3 bags. Most importantly, using the traditional bag, the farmer can keep his maize only for 2 months and this results in some damage by weevils. Using PICs, farmers were able to store for between 5 to 6 months, and maintain the quality and quantity of the crop stored.

Table 2: Costs of storing in PICs versus traditional

Items	PICs	Traditional
Price of a 100kg sack	45 birr	15 birr
Number of seasons used	3	1
Post-harvest loss	0	5-10 %
Cost of fumigant	0	12 birr/bag

To further address the pricing issue, the project has sensitized the FCUs and the vendors on the existing promotional pricing scheme by SYS which introduces discount purchase prices for large volume buyers.

Table: Price Schemes per 100 kg bag in ETB

No. of bags	FCU	PC	Farmers
>10,000	42	45	48
3,000- 5,000	42.50	45.50	48.50
1,000- 3,000	43	46	49
< 1,000	44	47	50

Primary Cooperatives have also been sensitized on price issue and linkages have been made between PCs & SYS so that the latter can also buy directly from SYS to shorten the supply chain which will reduce price to SHF.

Lessons

Technology promotion and demonstration has enabled farmers increased use of improved post-harvest technology- the PICs bags.

B2B linkages has helped growth of sustainable distribution channel thereby unlocking existing business potentials of FCUs and vendors in the project area.

The intervention helped vendors to boost business in PICs bags and promoted engagement of unemployed youth in income generating activities.

Demonstration of costed comparative advantage of traditional versus modern bag use for SHF has convinced farmers that investing on the hermetic bags pays off for the producers in terms of both quality and quantity of grain saved, and also because they can be used for more than one cropping cycle.