

COMMERCIAL VILLAGE STORES PROJECT

CVS TECHNOLOGIES

The CVS project being implemented by Farm concern international supported by USAID COMPETE has introduced various technologies to enable the farmers to reduce post harvest losses and also increase the length of storage period. This has enabled farmers to earn more from cereals sold through bulking and also selling grains when the prices are higher.

MERU SITE

In Meru, the project has managed to introduce and implement the project in four project sites namely Tigania east, Tigania west, Imenti South and Tharaka. Various technologies have been introduced in these areas.

1. METAL SILO

Introduction

The metal silos we introduced to demonstrate to farmers the reduction of post harvest losses resulting from biotic factors including storage pests.

- Metal silo uses the hermetic technology where the container is airtight hence reduced oxygen levels within the silo causes the survival of any pests such as weevils or any insects impossible.
- The Large Grain Borer being the one most common pest affecting the grains the use of silos keep them locked out permanently.
- The metal silo is also able to control the larger grain borer which has been a menace to farmers resulting to total loss of grains harvested.
- The cost of storage is significantly reduced since no preservation chemicals are used on grains that are put in the silo. Farmers spend an average of about USD 1 per bag on the purchase of pesticides hence this innovation ensures that income is saved.
- The silos prevent grain moulding or rotting since the grain put in it is dry this leads to reduction of chances of Aflatoxin within the grain. Due to grain hygiene that is high in the silo then there's long term storage of grain without spoilage.
- The silo can be customized in size according to the need of the farmers ranging from one bag to 30 bags.



Location

A metal silo has been installed at each of the following locations

- AMATU commercial village, Tigania East
- Ministry of agriculture district office (Tigania East) that is currently being used to demonstrate the technology to the farmers visiting the agriculture offices
- Kibuline commercial village
- Muguru commercial village in Imenti South
- Wamiuka commercial village in Tunyai, Tharaka

Achievement

The metal silo has enabled farmers to reduce the damage of grain by LGB by almost 98% and thus reducing the post harvest losses by 5%. More than 2000 farmers have been trained on the technology and have shown a lot interest in the metal silo as an alternative storage method.

2. UPGRADED STORES

The introduction of the upgraded stores was aimed at enhancing the storage of grains by individual farmers. The upgrading of the store included fixing rat guards, improving aeration and ensuring that the stores are raised well above the ground

Objective

- Improve on the quality of grains stored.
- It enhances the drying of the grain due to proper aeration of the store.
- Reduces the post harvest losses that arise from pest i.e. rodents, weevils
- Uses locally available materials to construct which are not a major constraint to farmers
- It has encouraged food security in the areas of operation

Location

- 26 stores upgraded in Tigania east
- 16 stores in Tigania west
- 14 stores in Imenti south
- 10 stores upgraded in Tharaka south district

Achievement

- i. More than 2000 farmers have been trained on store upgrading to enhance quality. There has been a quick uptake of the technology as the materials used could be the locally available to most farmers
- ii. The farmers have owned up the process as a result of practical on-farm demonstration of how the stores are upgraded
- iii. More than 40MT has been stored in upgraded stores leading reduction of post harvest losses by 3%



3. TRANSITIONAL STORES

Objective

Transitional stores are structures where farmers within a CV temporarily store their produce awaiting markets. The structures are modified to meet the conventional requirements of the store through the introduction of wooden pellets, good ventilation, recommended stacking and arrangement.

Location

Through the CVS project, FCI has facilitated 5 transitional stores in Tharaka, 2 in Tigania east, Tigania west and Imenti south.



Marega Commercial Village transitional stores

Achievement

Farmers have been able to store about 1800 bags within all the transitional stores translating to about 162 MT of assorted cereals e.g. maize, cowpeas, beans, dolichos, green grams, sorghum and soya. The grains are well stored with the recommended standards and thus reducing the risk of post harvest losses i.e. well inspected for pest damage, moisture content

and dusted before taking to the store. Due to the transitional stores various things have been realized

- i. Collective produce marketing.
- ii. Training on store keeping has enabled farmers to learn various aspects of food handling and cleanliness standards.
- iii. Better prices for the farmers since quality is key in bulking
- iv. Partnerships have been developed between farmers and buyers as well as input suppliers since farmers target to buy inputs collectively after every sale.
- v. Savings has been enhanced both for grains and cash when the farm produce is paid for in lump sum.
- vi. Records keeping using grain passbooks and store inventories have been adopted.
- vii. Due to the transitional stores, work plans for the commercial villages have been adopted.

4. CRIBS

Objective

The main target of this technology is to ensure produce continues drying even during storage due to adequate ventilation allowing air circulation. The cribs can be constructed very simply using readily available materials thus making affordable to most farmers.

Location

This technology has been introduced in the four project sites and it is being adopted by the targeted small scale farmers whose produce is in high quantities and they can dry the produce to the recommended moisture content using little resources since once the crop is harvested and de-husked its spread in the crib to dry before shelling.

Achievements

- i. It ensures proper drying of grains hence reducing post harvest losses from Aflatoxin and mould
- ii. It's easily adoptable by farmers due to availability of materials hence has enhanced the uptake of storage structures at household levels easing pressure experienced on family space during harvest periods .



Previously some farmer were using family living and bedrooms to store grains



5. EARTHEN POTS

These pots have basically been introduced due to food security campaigns that mainly target household storage. This is has been majorly promoted in Tharaka since the quantities of food in the area are little in comparison to the rest of the areas.

6. HAND-HELD THRESHERS AND SHELLERS

Objective

Maize handling after harvesting has been poor hence leading to lots of losses due to the method of 'beating' maize cobs during threshing that has been largely used.

Location

In all the areas of operation both types of shellers have been introduced and have been adopted rapidly since they are affordable to the small scale farmers.

Achievement

- i. The maize grains don't break during threshing hence the reduction of losses and quality has been maintained

- ii. Cost of threshing using human labour is expensive in the long term compared to machine shellers that shell as much as 10 bags per day per machine and the cost is not beyond the reach of the small-scale farmers.



JINJA SITE

1. METAL SILO

The main objective of introducing metal silo is to make farmers aware of the new technology of storing dry grains in metal container which can be fabricated locally. The silo has contributed immensely in reducing post harvest losses result from poor storing facilities, pests and rodents.

This is metallic container for storing dry grains. Silo has a top cover and a side bottom cover for putting and emptying dry grains, respectively. The container is mounted in a pallet and in a dry and cool environment away from direct sun heat. Silo is fabricated locally and can be made available to farmers at an affordable price.



Bulakabya Commercial Village

Objectives

- Metal silo uses the hermetic technology where the container is airtight hence reduced oxygen levels within the silo causes the survival of any pests such as weevils or any insects impossible.
- The Large Grain Borer being the one most common pest affecting the grains the use of silos keep them locked out permanently.
- The metal silo is also able to control the larger grain borer which has been a menace to farmers resulting to total loss of grains harvested.
- The cost of storage is significantly reduced since no preservation chemicals are used on grains that are put in the silo. Farmers spend an average of about USD 1 per bag on the purchase of pesticides hence this innovation ensures that income is saved.
- The silos prevent grain moulding or rotting since the grain put in it is dry this leads to reduction of chances of Aflatoxin within the grain. Due to grain hygiene that is high in the silo then there's long term storage of grain without spoilage.
- The silo can be customized in size according to the need of the farmers ranging from one bag to 30 bags.

The CVS project in Jinja, has mounted one silo at Bulakabya Commercial Village in Busede sub-county. Farmers have been trained on the use of a silo as a storage facility. Farmers are also encouraged to embrace this simple storage facility at commercial village and household level.

2. TRANSITIONAL STORES

Transitional store are structures where farmers within a CV temporary store their produce awaiting markets. The structures are modified to the conventional requirements of the store through introduction of wooden pellets, good ventilations, recommended stacking and arrangement.

Objective

The main aim of transitional stores is to train and demonstrate to farmers and traders the features of ideal store to be adopted both at Commercial Village and household levels. As a result of transitional stores, many farmers have come together to do collectively bulking of dry grains of up to 13.5% moisture content and below. Also, farmers have learnt how to dry grains on a tarpaulin and preserving them from being attacked by pests and rodents. This has greatly reduced post-harvest losses resulting from poor methods of grains handling, storing, pest and rodents. As result, farmers are able to realize quality grains and fetch high prices for their produce.

Location

In Uganda, Jinja District, the CVS project has been promoting and establishing transitional stores in Butagaya and Buyendo sub-counties. In Butagaya sub-county, one transitional store has been established by Namagera Commercial Villages while in Buyengo sub-county, another has been established by Nakajo Commercial Village.

Achievement

The CVS project has supported Commercial Village to acquire, equip, brand and hire store security personnel. In addition, the project has trained farmers and store personnel on grains quality management.

In Namagera Commercial Village farmers are storing their grains in the Namagera transitional store. Currently, 1,000 kgs of maize is stored in this store. Farmers in Namagera commercial village are projecting to bulk 10,000 kgs of maize by mid September 2011. Nakajo Commercial Village has 1,500 kgs of maize and farmers have projected to increase the quantities bulked to 5, 000 kgs by mid September 2011.



Nakajo CV transitional store



Namagera CV transitional store



Bituli CV transitional store

3. COCOONS

Cocoons are hermetic storage bags. The grains are stored under air tight conditions that cannot allow living organisms such as insect pests to survive. A cocoon has capacity of storing 230 (90kg) bags of grains. They are being promoted as communal stores at the commercial village level. Oxygen meters are also provided to farmers for checking oxygen levels in the cocoon.



The cocoons erected in Bituli commercial village in Butagaya sub-county and projected bulked grain being 20,000 kgs of maize and at Mbaale commercial village in Buyengo sub-county, farmers are projecting to store 5,000kgs of maize by mid September, 2011.

4. HAND-HELD THRESHERS AND SHELLERS

Objective

Maize handling after harvesting has been poor hence leading to lots of losses due to the method of ‘beating’ maize cobs during threshing that has been largely used. The shellers have aggressively been promoted as a strategy to discourage farmers from ‘beating’ maize cobs. Shelling maize through the widely practiced traditional method of beating cobs increases physical injury to the grains further creating a conducive environment encouraging aflatoxin and other pest infestation.

Location

In all the areas of operation both types of shellers have been introduced and have been adopted rapidly since they are affordable to the small scale farmers. The machines have been introduced in both Butagaya and Buyengo sub-counties in Jinja district.

Achievement

- i. The maize grains don’t break during threshing hence the reduction of losses and quality has been maintained
- ii. Cost of threshing using human labour is expensive in the long term compared to machine shellers that shell as much as 10 bags per day per machine and the cost is not beyond the reach of the small-scale farmers.

5. DRYING TARPAULIN

Traditionally, farmers in Jinja District and especially in Buyengo, Busede and Butagaya sub-counties dry their grains on bare ground. This method compromises the quality of the grains resulting to low selling price.

Drying of grains on tarpaulin has been introduced to the three sub-counties to address quality of grains especially discoloration of grains and introduction of foreign matter in grains.

Achievement

Farmers have started embracing the technology and are now selling their maize at a higher price of Ush 1,000 per kg instead of Ush 400 per kg at farm gate.



6. MOISTURE METER

In Jinja, farmers store grain with a very high moisture content leading to rotting of grains thus deteriorating in quality therefore hence making farmers incur huge losses. Also, grain stored with high moisture contents is susceptible to aflatoxins making it unfit for sale or consumption. The moisture meter has come in handy to check the levels of moisture content in the grains before it is stored in the transitional stores.

Achievement

The recommended moisture content before storage should be 13.5% and below. In all project sites in Jinja farmers have been trained on how to used moisture meter and many farmers have embraced the idea. Farmers are now storing grain at recommended moisture contents and incurring no losses as a result.



A store personnel checking moisture content of grains at Nakajo CV

7. CRIBS

These are specially made structures that are used for mainly freshly harvested grains and allow them to dry to acceptable moisture content. Cribs are made of rafts and spaced to allow for the required level of aeration and are raised one meter above the ground. They are readily adoptable for the local communities since they are easy to construct with locally available material and are not complicated technologically. The crib technology is being aggressively promoted by the project in Butagaya, Buyengo and Busede sub-counties of Jinja district. This is mainly to ensure that farmers dry their grain to acceptable moisture levels prior to shelling and indoor storage in the transitional or household stores.

