



# Standard Project Report 2015

## World Food Programme in Italy, Italian Republic (IT)

### Logistics Capacity Development: Post-Harvest Food Loss Reduction

Reporting period: 1 January - 31 December 2015

Project Information	
Project Number	200671
Project Category	Single Country Special Operation
Overall Planned Beneficiaries	N/A
Planned Beneficiaries in 2015	N/A
Total Beneficiaries in 2015	N/A

Key Project Dates	
Project Approval Date	March 17, 2014
Planned Start Date	March 17, 2014
Actual Start Date	N/A
Project End Date	May 16, 2015
Financial Closure Date	February 01, 2016

Approved budget in USD	
Food and Related Costs	N/A
Capacity Dev.t and Augmentation	11,104,921
Direct Support Costs	717,310
Cash-Based Transfers and Related Costs	N/A
Indirect Support Costs	827,556
<b>Total</b>	<b>12,649,787</b>

Commodities	Metric Tonnes
Planned Commodities in 2015	0
Actual Commodities 2015	0
Total Approved Commodities	N/A

# Table Of Contents

## **OPERATIONAL SPR**

Operational Objectives and Relevance

Results

Beneficiaries, Targeting and Distribution

Story Worth Telling

Outputs

Outcomes

Sustainability, Capacity Development and Handover

Management

Partnerships

Lessons Learned

# OPERATIONAL SPR

## Operational Objectives and Relevance

Post-harvest food loss is one of the largest contributing factors to food insecurity in Africa, directly impacting the lives of millions of smallholder farming families. Due to inadequate storage technologies and practices, farmers in Sub-Saharan Africa lose more than 30 percent of their crops post-harvest every year due to insects, pests, mold, and moisture. These losses significantly impact the quality and volume of food available for consumption and sale, thus contributing to hunger and malnutrition and reducing household income. These annual food losses far exceed the total amount of international food aid provided to Sub-Saharan African countries each year.

Through the Special Operation, WFP trained participating farmers in improved farm management practices and distributed modern storage technologies at a subsidized rate to reduce post-harvest food losses. This approach assisted farmers to overcome the continual cycle of poverty (created by pressure to sell crops quickly when prices are low to avoid losses, only to buy grain later in the season at higher prices to meet their family's consumption requirements). By providing ongoing support in combating the physical and economic impacts of post-harvest food loss, WFP set out to improve both the household food security and income generating potential of the farmers.

Aligned with Strategic Objectives 3 and 4, the Special Operation is also supporting the UN Secretary General's Zero Hunger Challenge. In particular, this Special Operation focuses on the objective of the 5th pillar of the Zero Hunger Challenge to ensure zero loss of food.

By training smallholder farmers in improved post-harvest management practices and promoting the use of modern household storage and handling technology, this Special Operation supports the WFP Uganda Country Programme's objective of assisting individuals who can meet their basic food and nutrition needs but require increased incomes to become fully food-secure. This beneficiary group consists of surplus-producing smallholder farmer groups, mainly in the eastern, northern, western parts of the country. These smallholders have limited access to markets of quality grain through which they can improve their earned incomes.

The Special Operation was launched with specific objectives: 1.) to reduce post-harvest losses for participating farmers by >70 percent; 2.) to increase supply chain efficiencies and marketable quantities of food; 3.) to increase farmers' income and control over percentage of harvest retained and timing of sale; 4.) to increase farmers' ability to access quality-oriented markets; and 5.) to directly support all existing Purchase for Progress (P4P) objectives.

This WFP initiative, involving 16,600 families in Uganda in 2014/first half of 2015, moves communities beyond food assistance to greater food self-sufficiency and expands on the P4P model by intervening at the household level, where most post-harvest crop losses occurs. Moreover, while the project is currently donor funded, WFP aims for eventual zero donor subsidization so the project is completely self-sustaining and self-financing. The Special Operation also contributes to maximizing the investments that WFP has made under the P4P programme in which emphasis has been given to community storage and group bulking and marketing of commodities, with the aim of improving small holder incomes and access to markets.

## Results

### *Beneficiaries, Targeting and Distribution*

The project originally intended to reach 41,000 farmers in Uganda and Burkina Faso, at least 30 percent of whom would be females. As funding for Burkina Faso did not materialize, only activities in Uganda were conducted in 2014 for 16,600 farmers in 28 districts through the country. On a positive note, the percentage of female beneficiaries has exceeded 60 percent.

### *Story Worth Telling*

Anna Elasu is a smallholder farmer and a mother of 7 who lives in Okidoi, a village in Soroti District, Eastern Uganda. Farming is her major source of livelihood, and each farming season (Uganda has two), she typically plants 3 acres of maize, sesame, cassava, sweet potatoes, and groundnuts.

Much of Uganda has fertile land and abundant rainfall, thus harvests are often good. Despite her plentiful harvests, Anna would lose half of her crops within months of each harvest due to insects, rodents, mould, and moisture. Using traditional storage practices handed down from her parents, she could not safely store her grains and protect them from deterioration. Forced to sell her grains at giveaway prices in the immediate weeks following harvest, Anna would then be forced to buy food to feed her family, but at prices many times higher. This endless struggle frustrated her efforts to provide for her family, and kept them trapped in a poverty cycle with few options to ensure her children were well fed – let alone create income to improve her and her family's quality of life.

Anna's difficult situation rapidly improved in 2014, when she heard neighbors talking about how a new tool and different way of drying crops that succeeded in almost completely eliminating post-harvest losses. She decided to participate in the WFP Uganda's Zero Food Loss Initiative, a rapidly expanding effort that trains farmers in improved crop handling techniques, and sells farmers subsidized hermetic (air-tight) storage equipment.

Anna was one of 16,600 Ugandan farmers trained by WFP under SO 200671 in improved ways to harvest, thresh, dry, and store their crops. She also received subsidized drying and storage equipment consisting of 1 tarpaulin, a metal silo, and a bundle of 4 airtight storage bags, with a combined storage capacity of 900 liters.

Anna followed the key messages from the one-day WFP training, and effectively dried and stored her crops using her new equipment. She stored 320 kilograms of maize for nearly a year in her storage bags, finally selling them when the grain price had tripled. From the maize stored in her metal silo, she took a sample to a nearby primary school, and was immediately asked to begin supply the school with maize flour at 1,500 UGX per kilogram (1 USD = 3,365 UGX). Poorer quality maize sells for between 350 and 800 UGX per kilo.

As a result of her newfound ability to safely store her crops and to control the timing of her crops sales for more favorable prices, Anna has been able to double her family's average annual income from 3,000,000 UGX (USD 890) to 6,000,000 UGX (USD 1,780).

In her own words, the extra income Anna earns provides her with what can be summed up in one word—opportunity. She can now afford to grind her maize to sell *posho*, a cooked maize product, which brings in five times the income compared to raw maize. She has also been able to diversify her income generating activities from purely crop production to animal husbandry. She recently acquired two pigs and eight lambs, which she will fatten and sell. Anna has also increased her acreage of land under crop production from 3 to 5 per harvest, and average crop yield has increased from 2 metric tons to 3.5.

With her level of success, Anna has managed to mobilize her female neighbours into 4 groups of 30 members each. The groups have started Village Savings and Loans Associations, as they wait in eager anticipation for WFP to upscale the project so they can benefit from improved crop storage knowledge and equipment.

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Florence Lakwo is a farmer in Aremo, a small community in Gulu District, Northern Uganda. She is a widow and mother of 6. Farming is her primary livelihood, and her main crops are maize, sesame, beans, groundnuts, sorghum, millet, and tubers, like cassava and sweet potatoes.

In Autumn 2014, she was one of the earliest participants in WFP Uganda's Zero Food Loss Initiative. She attended an interactive day-long training on post-harvest management, and decided to purchase a large metal silo (1,350 liter capacity) and a plastic silo (250 liter capacity), which were both subsidized by WFP by 70 percent. She also obtained an additional medium metal silo (650 liter capacity) from a fellow farmer who also attended the training. Her strong interest in acquiring the silos came from her previous experience from her mid-year harvest of 2014, where weevils severely damaged well over half of her maize harvest - 2.4 metric tons out of 3.7 tons. Her damaged grains sold for only 300 UGX per kilo, and she took a serious economic loss (1 USD = 3,365 UGX). However, still committed to improving her prospects, she invested her meager earnings to rent 6 acres of farm land and to pay for labour to plow her fields. Florence is a subsistence farmer with no or little potential for a consistent surplus. Until now, that is.

Just after planting in September for her year-end harvest, in 2014, she signed up for a post-harvest loss eradication training session delivered by ACTED, WFP's local implementing partner. After her December harvest, she stored her maize in an airtight metal silo, and after 5 months of storage, she was astonished to discover the maize quality had been preserved and looked the same as the time of initial storage. Market prices for maize in May 2015, the lean season, were drastically higher, and she sold her grains for 800 UGX per kilogram.

She experienced the same success with sesame in January 2015, storing 650 kilograms in her medium metal silo for 3 months. She kept 100 kilograms for home consumption, and sold the rest for 4,000 UGX per kilogram compared to the harvest time price of 2,500 UGX. Using this profit, she bought a plot of land within her village on which she plans to construct an agri-produce store.

Following the harvest of December 2015/January 2016, she has filled both her plastic and medium metal silos full with sesame, and at time of writing, she was in the process of filling her large metal silo with maize. She plans to sell the sesame when the price improves to around 4,000 – 5,000 UGX a kilogram to help pay second term school fees for her children and to start construction of her store.

Florence remarked, “Once I store my grains in my silos, I am not worried about spoilage. All of my crops are safe from weevils, moisture, and rodents.” She says silos have transformed her and her children’s futures, and she will buy more as they become commercially available. Due to the direct economic benefits of the silos, Florence has made the decision to increase her acreage under cultivation, hire farm labour, send her children to a better school, pay for medical bills, and begin investing in livestock. She purchased a pig for 50,000 UGX, which can be sold for 400,000 UGX at the moment.

In 2016, Florence plans to expand her cultivated acreage from 10 acres to 17, complete her store, and procure 2 additional cows. In under two years, she has moved rapidly from subsistence to surplus; from a farmer at the mercy of weather and insect infestations, with no consistent surplus – to a viable commercial farmer who now has the power to shape her own future. Today, she is providing employment to others, instead of waiting on a development aid handout.

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In 2014, WFP Uganda trained 16,600 farmers in improved post-harvest management practices. Many of them have stories similar to Anna and Florence’s experiences.

## Outputs

During the 2015 reporting period, the only main activity that took place under SO 200671 was a monitoring and evaluation exercise, designed in conjunction with the Massachusetts Institute of Technology--to ascertain the effectiveness of post-harvest loss training and equipment distribution at the household level. Due to the staging of the project, the trainings and equipment distribution for 16,600 smallholder farmers were mostly concluded in 2014, which falls outside this reporting period. Approximately 10 percent of beneficiary farmers participated in 3 rounds of data collection performed by NGO implementing partners at Day 1, Day 30, and Day 90 marks after initial storage following the December 2015/January 2016 harvest to compare the quality of grains stored using traditional methods versus those using improved hermetic/airtight equipment. Measurements included the use of weighing scales (to measure physical loss) and moisture meters to capture moisture content levels (and to see if farmer participants were able to dry sufficiently to avoid mould growth, using practical methods taught by WFP) for both samples stored in traditional methods and those stored using new air-tight storage silos. M&E data was collected using a tablet-based questionnaire designed to also capture or gauge possible socio-economic benefits accrued--or lack thereof--due to participation in WFP trainings and receipt of subsidized storage and drying equipment.

The full report describing the M&E findings can be accessed online here:

[http://www.wfp.org/sites/default/files/20160107%20Uganda%20PHL%20implementation%20Report\\_Final.pdf](http://www.wfp.org/sites/default/files/20160107%20Uganda%20PHL%20implementation%20Report_Final.pdf)

## Outcomes

Following the monitoring and evaluation exercise the following statistically significant trends were observed.

- Percentage reduction in post-harvest losses compared to traditional methods and storage (98 percent)
- Percentage of women reported having additional free time after utilizing the new storage unit (98.3 percent)
- Percentage of women reported having increased freedom to leave their home and pursue other activities (due to the improved security of their stored food) (99.1 percent)
- Percentage women surveyed reported their family having achieved a financial advantage by using the new storage units and having greater control over the timing of sales (97.9 percent)

## Sustainability, Capacity Development and Handover

In 2015, SO 200671 expired, and activities initiated under this program were carried forward under SO 200836 as solely a Uganda-based activity. Under 200836, an additional 40,438 farmers in Uganda were trained in improved post-harvest handling concepts. Approximately 92 percent of these farmers trained under SO 200836 ordered

subsidized storage equipment, and at time of writing (March 2016), equipment distribution for these farmers is ongoing.

This iteration of the project saw increased engagement of the private sector. This is in part due to heavy donor encouragement and guidance to move post-harvest training and equipment distribution from a donor-subsidized model to one led by the private sector on a fully commercial basis. In 2013 and 2014, all post-harvest loss eradication activities in Uganda were conducted by WFP and NGO partners. Equipment was subsidized by 70% in 2014, and this subsidy was reduced to 50 percent the following year.

Under successor SO 200836, 2015 saw the introduction of 6 private sector equipment distribution partners, who became responsible for taking equipment orders and deposits from farmers, receiving equipment from silo manufacturers, managing the last-mile distribution, collecting final payments from farmers, and remitting monies to WFP. SO 200836 in 2015 saw more than 40,000 additional Ugandan farmers participate in this important post-harvest initiative. Looking forward, in Spring 2016 two of those partners will conduct farmer trainings and distribute the hermetic storage solutions.

As the project continues to scale, in 2016, it has been integrated into WFP Uganda's overall Agriculture and Market Support/P4P strategy, which seeks to boost the income and food security of rural smallholders through increasing agricultural productivity, reducing food losses, and improving access to markets. Under this approach, in addition to receiving post-harvest trainings and purchasing storage equipment, farmers are further empowered through WFP trainings and capacity development in topics such as farming as a business, gender, nutrition, financial literacy, stores management, group dynamics, and market linkages.

WFP Uganda's overall objective is to support farmers and help them move from subsistence farming to surplus production. In 2016, an additional 61,750 Ugandans (49,500 smallholder farmers and 12,250 refugees) are expected to partner with WFP for improved food security and income generation potential.

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For post-harvest loss eradication activities to succeed (massive scaling, the millions of households across Uganda, then Sub-Saharan Africa), a key element will be the development of multiple equipment suppliers to form the basis for a robust, competitive market. Prior to WFP's initiation of the project of 2013, silo equipment was not available, at any price, from any supplier. WFP's role as a catalyst went beyond managing the farmer training component - the Uganda post-harvest team has been heavily involved in the design, manufacture, procurement, marketing, and distribution of this equipment.

Starting in 2013 and 2014, WFP trained local metal artisans to assemble galvanized iron metal silos and collaborated with a local plastic manufacturer to produce plastic silos. The former was not a scalable solution, in particular given quality challenges with local artisans. Seeking to scale while assuring quality, in 2015, WFP centralized metal silo production through a Kampala-based factory (the only manufacturer of stainless steel water tanks in Uganda). WFP also hired an engineer to standardize silo specifications and liaise with manufacturers.

Concurrently, with the intent to increase competition, the WFP team continued to look for new potential plastic silo suppliers to establish standard requirements and reduce production costs.

As a long term solution, WFP will explore the market further (across East Africa) to identify potential suppliers and build capacities with the support of a WFP-contracted Engineer. This will also assist other WFP country offices as they begin post-harvest activities. An expression of interest for all drying and hermetic storage equipment has been placed in local newspapers. Submissions from interested suppliers will be reviewed, and it is expected that there will be sufficient time to create awareness, develop capacity, and test the products, all to be ready for 2017.

For sustainability purposes, it is clear that the post-harvest industry in Uganda cannot be based on a push model managed by WFP. Although continued WFP support is required, the ultimate goal is that private sector suppliers, manufacturers, distributors, retailers, and financial institutions will be able to directly meet farmer demand for post-harvest training, equipment, financing, and after sales service on the open market. Rather than supporting all aspects of the post-harvest equipment supply chain, WFP aims to move to a solely facilitation role within the next 4 to 5 years. It is envisaged that once farmers understand the value of improved post-harvest storage training and equipment, they will pull demand upstream and be willing to invest in equipment without subsidized support.

In the past year, WFP has made significant inroads in increasing private sector engagement across the post-harvest supply chain in Uganda—from marketing, manufacturing, distribution, and farmer financing—and will maintain this momentum going forward.

## Management

### *Partnerships*

In 2015, WFP worked with a variety of partners, which included international and local NGOs and government ministries.

All monitoring and evaluation activities were implemented by national actors, including NGOs and community-based organizations whose contributions are acknowledged to ensure field presence and constant relationships with the communities.

Outreach to potential partners is ongoing to discuss ways to further refine the implementation model and to secure resources required to scale up the project through 2016 and beyond.

### *Lessons Learned*

Given the ambitious implementation timelines and large numbers of participants, 2014 has provided numerous and significant funding and logistical hurdles for the Special Operation. No funding was received for Burkina Faso, and as a result, activities there had to be postponed. For Uganda, advance financing was needed to launch the project, but the number of farmers reached was reduced due to limited funding received.

In Uganda numerous logistical hurdles also presented themselves, from identifying farmers, to holding trainings, to manufacturing/purchasing equipment and distributing them all within a short time window. To reduce costly transportation expenses, the CO had metal silos fabricated as close to beneficiary communities as possible.

Involving the private sector and government counterparts is critical to the sustainability and ultimate success of the Special Operation. More work needs to be done in these areas in 2015 to ensure that these partners see the value and benefits in reducing food losses at the household level and are eager to see this initiative scale up across the country. It is recommended that greater exploration of different pre-financing/leasing models be undertaken to see how WFP can make trainings and storage equipment more accessible and affordable to interested but cash-strapped farmers.

This post-harvest loss reduction initiative complements the P4P model and gives additional added value to farmers at the very start of the logistics supply chain. There are discussions at the CO on how to further assimilate both components into a more streamlined Agricultural Market Support strategy.

WFP's integrated approach of providing farmer training, storage equipment, and on farm support has proven incredibly effective in reducing post-harvest losses. Such a comprehensive service package has enormous potential in scaling up across Uganda, but also has extremely relevant applications to other food insecure countries in Sub-Saharan Africa. WFP Uganda is actively sharing its experiences and knowledge with other interested COs in implementing a similar project.