



**WFP UGANDA**  
**SPECIAL OPERATION SO 200836**

Country:	Uganda
Type of project:	Special Operation
Title:	Logistics Capacity Development: Post-Harvest Food Loss Reduction in Uganda through improved Storage and Handling at the start of the Supply Chain
Total cost (US\$):	5,665,809
Duration:	17 May 2015 to 16 May 2016 (12 months)

## Executive Summary

Post-harvest food loss<sup>1</sup> is one of the largest contributing factors to food insecurity and under-nutrition. It occurs all over the world, but much of it takes place in Sub-Saharan Africa, directly impacting the lives of millions of poor, smallholder farming families every year. Although African agriculture holds great potential, it is not functioning at optimal efficiency. Due predominantly to inadequate handling and storage practices at the household level, farmers lose more than 30 percent of their crops every year to insects, pests, mold and moisture. The inability to safely store grain at the household level has huge nutritional, health, and financial impacts. These losses significantly lower the quality and volume of food available for consumption and sale, thus contributing to hunger and malnutrition, and reducing household income.

Improving food storage systems is critical for both economic well-being as well as for ensuring food security and nutrition. Most agricultural assistance models focus primarily on increasing access to inputs such as seeds, fertilizers, pesticides, and equipment to raise yields<sup>2</sup>. However, the productivity gains achieved through these investments are limited by the unaddressed issue of ongoing post-harvest losses. In contrast, improving post-harvest storage practices and technologies for grains is a cost-effective and resource efficient method of raising food availability, without requiring increased usage of land, water, and other farming inputs. Scaling up the dissemination of improved farm management practices and proven storage technologies will dramatically reduce food losses and help farmers overcome the pervasive cycle of poverty brought on by post-harvest losses. In absence of effective grain storage facilities, farmers are often under pressure to sell crops quickly at harvest when prices are low (to avoid seemingly unpreventable crop losses), only to buy grain later in the season at higher prices to meet household consumption requirements. Reducing grain losses at the household level has been proven to increase income of smallholder farming families by as much as 100% (see empirical data gathered

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<sup>1</sup> Post-harvest food losses refer to crop losses (in quality and quantity) that occur between harvest and the moment of human consumption. These include on-farm losses, such as when cereals are threshed/shelled, winnowed, and dried, as well as losses along the chain during transportation, storage, and processing. On-farm losses during storage are of particular concern for many countries in Sub-Saharan Africa, when grain is being stored for household consumption or when the farmer waits to sell at a later date or when prices rise.

<sup>2</sup> In 2010 the World Bank reported 95% of all agricultural research investments in the past 30 years were focused on increasing farming productivity - only 5% on reducing post-harvest losses.

3. The official report on SO 200671, evaluated in association with MIT University (Boston), will be published in May 2015.

in recent WFP Action Research Trials), with farmers not only having additional surplus product to sell, but having far more control over when they sell. Farmers can sell quality produce when prices are at their peak, particularly during the lean season. This not only benefits the farmer, but also helps smoothen supply in the market, with secondary benefits accruing to the consumers.

Through this SO, WFP will build upon the incredible accomplishments of SO 200671, where almost 17,000 Ugandan smallholder farming families have enjoyed remarkable quantitative and qualitative gains, as well as significant increases in household finance, as result of the training, new storage and handling equipment, and farm support provided in 2014/2015. Commencing in May 2015, SO 200836 will expand the post-harvest loss reduction activities in the same region to include an additional 34,000 to 40,000 smallholder farmers, with the intention of taking the same proven model of post-harvest handling and storage training and subsidized storage equipment to the broader sub-Saharan region over the coming years. These objectives directly support WFP's commitment to two of the five key objectives of the United Nations Secretary General's Zero Hunger Challenge, namely (i) 100% increase in smallholder productivity and income and (ii) zero loss or waste of food.

To ensure sustainability of this important initiative after WFP and donor support is withdrawn, additional resources are also sought to establish WFP's Knowledge and Operations Center on Post-Harvest Loss Reduction. This office will 1.) document WFP Uganda's post-harvest loss approach and important lessons learned, 2.) provide support and guidance to other WFP Country Offices, Governments and Private Sector actors interested in implementing similar post-harvest loss interventions and to 3.) explore ways to mainstream post-harvest loss reduction strategies, activities, and policies into each respective Government's programming.

## Project Background

1. Since 2008, WFP's Purchase for Progress Programme (P4P) has been supporting smallholder farmers and traders to improve the quality of their grain and to access better markets for improved incomes. Working with national and international NGOs and the private sector, WFP has constructed critical infrastructure such as roads, Satellite Collection Points (SCPs), and warehouses; and provided training on post-harvest handling, farming as a business, storage management, and market information systems. These ongoing activities are directly benefiting hundreds of thousands farming households in 20 P4P countries.
2. Based on this experience, WFP has gained valuable insight into the causes of the critical "gaps" in the value chain, and more importantly identified the optimum way of avoiding ongoing food losses. In 2014, WFP launched Corporate SO 200671 in Uganda and Burkina Faso to invest in the capacity development of low-income farmers (to improve their current post harvest handling and storage practices) and provide improved handling and storage equipment at the farm level. These activities will be continued in Uganda through SO 200836.
3. There are six measurable objectives for SO 200836. See Project Objectives.
4. By providing farmers training (better ways to harvest, dry, thresh, and store crops); subsidized storage equipment that is air and water tight to effectively guard against

insects, rodents, mold, and moisture; and on farm support, WFP is helping farmers ensure high grain quality and increased marketable quantities. SO 200671 was built upon the findings of an action trial conducted from September 2013 to April 2014 in Uganda and Burkina Faso. During the trial, post-harvest management training and utilization of appropriate handling and storage technologies enabled participating farmers to retain over 98 percent of their harvest in good condition, regardless of the crop selected for storage by the farmers and the duration of time the crop was in storage. In the trial, farmers also realized a direct increase in household income of between 60 and 100 percent.

5. In 2014, WFP Uganda increased the number of participating farming families to 16,600 following the same successful approach used in the Action Research Trial. SO 200836 will scale up this initiative to reach another 34,000 to 40,000 smallholder farmers in 2015. The planning model for SO 200836 will not only include a comprehensive support package to assist Government and Private Sector partners with the necessary training and equipment provision, it will also provide instruction and support on ways of improving overall grain management, including supply chain planning, demand planning and inventory management, and marketing.
6. As this project grows, it is envisaged its replicable and scalable methodology will have enormous potential for other countries in eastern Africa and beyond, facing similar challenges in post-harvest food losses. These activities will also build local capacities to meet two of the five key objectives of the UN Secretary General's Zero Hunger Challenge, specifically 1.) 100 percent increase in smallholder productivity and income, and 2.) zero loss or waste of food.
7. Although post-harvest training and storage equipment was budgeted under SO 200671 for farmers in Burkina Faso, funding did not materialize for this country, and as result, activities in Burkina Faso were not implemented under SO 200671 and similarly will not be implemented in the country during this new SO.

## Project Justification

8. Agriculture in Uganda is the main driver for economic growth, food security, income enhancement and employment. The sector employs 77 percent of the population (UBOS, 2005), with the major agricultural food crops including maize, sorghum, millet, beans and ground nuts. Reports differ regarding the specific levels of annual post-harvest crop losses, however the figure consistently referenced (and supported by The Ugandan Ministry of Agriculture and FAO) is between 25 to 35 percent of crop yields being lost through inefficient postharvest handling.
9. SO 200836 is designed to build upon the success of SO 200671. Continued post-harvest loss reduction activities at the household level in Uganda is deemed necessary due to the following factors:
  - a) Continuous Need for Humanitarian Assistance: Currently, there is no other active, large-scale initiative in Sub-Saharan Africa working with smallholder farmers to reduce post-harvest losses. Hundreds of millions of farmers continue to suffer crippling food losses year after year, with many of them resorting to negative coping strategies, including reliance on food aid. As this initiative expands across

Uganda, it aims to be the driving force to reducing pervasive and widespread food losses and helping communities transition from food aid to food assistance and greater self-sufficiency in the country.

- b) Increased Demand: The 16,600 farmers supported within SO 200671 represent less than 1% of the number of Ugandan farming families requiring assistance. An expansion in scale—through this new SO— is required to create sufficient levels of awareness across all farming communities of the benefits, which in turn will drive the natural market forces to take over and adopt the new post-harvest practices as normal farming procedures.

This SO will introduce post-harvest loss reduction training and new technology storage and handling equipment to up to 40,000 new farming families. The number of farming regions will also be increased to ensure the National level of awareness is raised, not just a selected few regions.

While several WFP COs and governments (e.g. Rwanda, Ethiopia, Tanzania, and DRC) have expressed interest in setting up similar post-harvest loss projects that follow the Uganda approach, they require normative and technical guidance and expertise necessary to do so. To this end, this SO will set up WFP's Knowledge and Operations Center (KOC) on Post-Harvest Food Loss Reduction to formally create a knowledge base within the organization and to provide readily available support for COs and governments. Following discussions with the ED, DED and Regional Director (East & Central Africa) it has been decided to locate the KOC within the Uganda CO. Funding for the KOC has already been received (via SRAC), with staff recruitment and implementation set to commence in May 2015. Additional information is provided in the Implementation section of this paper.

- c) Support of P4P, Zero Hunger Challenge, and Rome-based Agencies' Collaboration: The SO complements the significant investments WFP has already made in the P4P program in Uganda and beyond. As previously mentioned, by providing farmers training, subsidized storage equipment, and on-farm support, the SO not only ensures an increased volume of higher quality, marketable grain that will feed into P4P-constructed infrastructure, but also contributes to improving overall grain management, including demand forecasts, planning processes, and inventory marketing.

Next, the SO supports the umbrella Rome-based Agencies' (RBA) joint project on Mainstreaming Food Loss Reduction Initiatives for Smallholders in Food-Deficit Areas. Field-level implementation of effective food loss reduction solutions through this SO will contribute critical lessons learned and best practices to inform policy exchanges and information sharing amongst all relevant stakeholders in the RBA initiative. FAO and IFAD are both aware and supportive of WFP carrying out this complementary project.

Lastly, the SO also builds local capacities to meet two of the five key objectives of the UN Secretary General's Zero Hunger Challenge, specifically 1.) 100 percent increase in smallholder productivity and income, and 2.) zero loss or waste of food.

## Project Objectives

10. The principal purpose of the new SO, building on the preceding SO 200671 and seeking to reach an additional 34,000 – 40,000 farmers in Uganda by the end of its implementation, is to actively support WFP's commitment to two of the five key objectives of the United Nations Secretary General's Zero Hunger Challenge, namely (i) 100% increase in smallholder productivity and income and (ii) zero loss or waste of food.
11. There are six measurable objectives for SO 200836:
  - a) To improve the household income of smallholder farmers in Uganda. This objective will be achieved by increasing the overall % of each crop participating farmers will have available for sale, as well as increasing the control each farming family will have over the timing of when they choose to sell their grain.
  - b) To improve the nutrition of smallholder farming families in Uganda. This objective will be achieved by participating farmers producing grain with reduced levels of aflatoxin contamination, reduced insect activity during storage and reduced usage of pesticides.
  - c) To increase food security / availability of food for family and community consumption. This objective will be achieved by supporting participating farmers in reducing their post-harvest grain losses by more than 70%, and in the process increase the volume of food available for household consumption or sale into local or national communities.
  - d) To double the number of participating farmers from SO200671, whilst maintaining a minimum of 50% female participants.
  - e) To develop a clear sustainability strategy by encouraging strong Private Sector engagement. This objective will be achieved by giving strategic priority to developing private sector capacity and the linkages between supply chain actors and smallholder farmers in the selected farming regions. WFP will work closely with USAID funded FTF/CPMA to leverage professional relationships developed over the past 3 years with Ugandan wholesalers, retailers, trader networks, village agents and Government extension workers, to not only market and deliver post-harvest handling and storage equipment and provide the critical link between farmers and markets, but to also actively leading the capacity development of farmers, artisans and traders regarding the benefits of improving post-harvest handling and storage practices.
  - f) To reduce the pricing subsidization of all handling and storage equipment for participating farmers from 70% down to 50% with a firm target of achieving 0% subsidization within the next 2 years.

## Implementation

12. Reduce post-harvest losses for participating farmers by 70%: The same four stages of post-harvest loss reduction activities under SO 200671 will be extended through this SO to additional farmers under this successor SO. These include 1.) a full day

post-harvest management development workshop (farmer education) for each participating farmer, 2.) equipment manufacturing, transportation and distribution to individual farmers, 3.) on-farm support and refresher training (where training participants are reminded prior to harvest of the key instructions from the training workshops), and 4.) monitoring and evaluation of project results (in association with MIT University) . From this farmer support package, the resultant objectives of increased farmer income and control over percentage of harvest retained and timing of sale, increased farmer ability to access quality-oriented markets, and augmented support of P4P activities will be attained<sup>3</sup>.

13. Logistics Capacity and Post-Harvest Management Development – Beneficiary farmers will attend highly-participatory and engaging training workshops designed to address inappropriate post-harvest practices, poor crop drying systems (leading to moisture related problems of grain rotting, fungal infestation, etc.), poor storage systems (resulting in qualitative and quantitative losses from insect and weather spoilage), food safety and food quality issues. Experienced local facilitators, using the WFP Post-Harvest Handling and Storage (PHHS) Manual as a foundation source of training material, will encourage strong interaction from attendees to highlight current concerns and illustrate how improved farming practices can lead to significant reductions in food losses (in both weight and quality), leading to increased product for family consumption and commercial sales (increasing household income). Training materials will be made available in local languages to enable smallholder farmers' access to updated knowledge and skills without language barriers.
14. Following detailed demonstrations of the new storage units, and instructions regarding the correct handling procedures, all workshop participants will order one or more of the new storage units to use on their farms during the following harvest. New storage technologies, in a variety of sizes, will be made available to low-income farmers (on a partially subsidized and/or financed basis) under this Special Operation. These technologies will include, but not be limited to, small (<100kg) multi-layer hermetic storage bags; medium (100-500kg) plastic or metal silos; and large (>500kg) plastic and/or galvanized metal silos. For budget planning purposes, an indicative distribution of storage equipment types, still to be finalized, is in following table.

Equipment Type	Number of Pieces	Number of Farmers
Medium Metal Silo (500lt capacity) Cylindrical metal storage unit capable of providing air-tight grain storage for an indefinite period. Life expectancy +30 years.	4,080	4,080
Large Metal Silo (1200lt capacity) Cylindrical metal storage unit capable of	3,400	3,400

<sup>3</sup> Kindly see Monitoring and Evaluation section (page 7) for more information on how these objectives will be assessed.

providing air-tight grain storage for an indefinite period. Life expectancy +30 years.		
Medium Plastic Silo (250lt capacity) Cylindrical plastic storage unit capable of providing air-tight grain storage for an indefinite period. Life expectancy +15 years.	7,140	7,140
Large Plastic Tanks (500lt capacity) Cylindrical plastic storage unit capable of providing air-tight grain storage for an indefinite period. Life expectancy +15 years.	7,140	7,140
Hermetic storage bags x4 per farmer (80lt capacity) Multilayer Polyethylene bags, measuring 75 by 130 cm. Life expectancy 1-2 years.	48,960	12,240
Tarpaulins Size: 4x 5 metres ,Weight: 3.5 kgs. 150 GSM. Life expectancy 3-5 years.	41,480	34,000
Minimum Expected Number of SO Equipment Pieces / Participating SO farming Families.	112,200	34,000

15. In partnership with local farmer organizations from selected growing regions, a schedule of farm visits in the weeks following training workshops and equipment distributions will be organized to provide support and further training (prior to harvest commencing) to ensure processing equipment and storage units are correctly positioned and the required pre- and post-harvest preparations completed.
16. Additional focus will be placed on 1.) creating a knowledge management hub in providing assessment and guidance support for potentially rolling out the project in other East African WFP COs, and 2.) encouraging private sector engagement as part of an eventual exit strategy. Private sector engagement is further elaborated on in the below “Exit Strategy” section.
17. Knowledge and Operations Center (KOC) – The KOC would run in parallel to already established SO activities. The KOC will serve as the focal unit responsible for engaging with other WFP Country Offices and governments in neighboring East African nations to replicate and scale up WFP Uganda’s approach to reducing post-harvest food losses at the household level. The KOC will develop, collect, and disseminate best practices as well as provide comprehensive theoretical and practical training modules and support materials on how to set up and implement all four stages of the SO (i.e. needs assessment, beneficiary identification, farmer training, equipment manufacture and distribution, on-farm support, and monitoring and evaluation). The specific technical skills required to perform these functions will need to be recruited, with the associated cost covered by SRAC funding.
18. Sequential to the SO implementation, the KOC will be responsible for collating and documenting best practices from the post-harvest loss reduction SO experience in

Uganda and providing ongoing technical guidance and training support/materials to other WFP COs and governments in Sub-Saharan Africa interested in initiating similar post-harvest reduction activities. Through this SO, WFP will build a central capacity (with standardized methodologies and systems) through which future support for other country offices interested in taking on similar initiatives can be drawn. The KOC is also tasked with promoting the adoption of post-harvest food loss strategies, activities, and policies into WFP's core operations to more efficiently end hunger, but more importantly to influence Government policy on agricultural development in Uganda.

19. Beyond the scope of this SO is the future intention for the KOC to deploy SO staff to other countries (at the cost of recipient WFP COs or host governments) to provide normative and technical guidance, as well as liaise with HQ technical units as and when needed. Staff budgeted under this SO will work on both post-harvest loss activities and KOC-related responsibilities.
20. Additional components may be added to refine and further augment the level of services delivered to farmers. Any significant alteration that changes the scope of the SO will require a subsequent BR.
21. A critical barrier to farmer uptake of improved post-harvest household storage equipment is the relatively high economic cost of storage silos. As such, the Uganda Country Office is exploring a full range of options to encourage smallholder farmers to adopt storage technology, including, but not limited to, the use of subsidies and creative financing options. Subsidization of improved storage equipment will be reduced from the SO 200671 level of 70% to balance cost efficiency and cost effectiveness against farmers' willingness to pay, while building beneficiaries' confidence in new technologies. Beyond the scope of this SO, it is envisaged that subsidization will be gradually reduced to zero within 4 years, as the private sector builds capacity to support full commercialization of post-harvest training and equipment provision and servicing. In the interim, WFP will provide assistance to link low-income farmers with reputable micro-financing providers to create necessary lines of credit.
22. To avoid duplication of services at the CO level, WFP Uganda is conducting an SO review internally to identify optimal ways of aligning P4P and SO activities to ensure operational and resource synergies, wherever possible are achieved.
23. The project presents minimal risk. The concept has been openly embraced by Ugandan Government officials as being consistent with their national objectives. It has a very low degree of difficulty (considering all aspects of training and implementation have been tested previously and the new farming technology involved is merely sharing of proven "best-practices" from developed countries) and it has been modeled on other highly successful post-harvest food loss reduction initiatives. The major challenges will be attracting the required funding, building the confidence needed amongst farming communities to change generational practices, encouraging local industry, measuring results in such a way as the cost benefits are clear and supported by the farming communities (leading to reduced pricing subsidization) and moving to scale within the ambitious time frame of the project.



## Project Cost and Benefits

24. This SO aims to provide 34,000-40,000 smallholder farmers in Uganda with logistics capacity development (training), post-harvest handling equipment, and hermetically sealed household storage units to facilitate preservation of crop quantities and directly contribute to higher volumes of quality grain traded through the network of collection points, warehouses and structured trading platforms already supported by WFP. To achieve this, this SO will require total funding of US\$ 5,665,809.
25. WFP anticipates that improving product quality and quantities will provide increased food security and financial returns for individual farming families. Additional crop retention (reducing losses from >30% to <10%) will yield a surplus volume for family consumption requirements, generating increased product on the market and income for other household expenditures such as health, education, clothing, etc. As many of the participating farmers are currently subsistence growers (farming 1 acre or less of land and producing only enough food to feed their families), any excess food created for marketing from this initiative will result in significant increases in income for them. For the slightly larger growers (farming between 1 – 3 acres of land), the 70% reduction in food losses from improved grain storage will provide significantly more control over the percentage of harvest they can retain and, importantly, provide much greater flexibility as to the timing of when they sell their excess product. Improved product quality will also have a direct influence on the prices farmers are paid and assist with the marketing of grain to wider, quality-conscious markets.
26. More information relating to additional household incomes relevant to specific Ugandan crops will be available following the publication of the official report on SO 200671 in May 2015. For illustration purposes, in the case of maize where average returns are US\$280 - US\$680 per mt (depending on product and region) there is the potential to improve individual incomes by as much as US\$200 per year. Considering the nominal per capita income in Uganda of US\$506 per year, this would represent a 39.5% increase in income for each maize growing family. Working with the supply side partners, and creating demand through market linkages and WFP/P4P's procurement activity will significantly increase the overall marketable quantity of grains, pulses, and legumes, both domestically and internationally, for farmers of Uganda.
27. The return on investment for farmers (regardless of whether they purchase a cheap multi-layer hermetic plastic bag or a more expensive metal silo) will be within one calendar year for most. Such a high benefit–cost ratio for low-income farmers will result in material financial and associated gains, through increased household incomes, for up to two decades (which is the life expectancy of a galvanized metal silo).
28. Each of these improvements will be readily measurable and illustratable to donors, project partners, Governments and neighboring countries. This project presents a practical, proven solution to a recurring problem of global significance. It brings to the Sub-Saharan region a well-structured progression of activities to achieve large

scale implementation, without the burden of excessive management or project overheads. Its successful sustainability will be built upon a strong education foundation and financial gains, with resulting well-being, benefits enjoyed by all participating farming families. Providing financial assistance to 34,000-40,000 low-income farmers will not only directly benefit the selected families and regions, it will be the catalyst for a self-sustaining loss reduction operation requiring little or no further funding.

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 socio-economic growth.

29. This SO 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 reliant on donor funding, WFP aims to eventually have the project completely self-sustaining and self-financing.

30. 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.

## Project Management

31. The overall management, administration, and control of the operation will remain with the Program Manager, who will report to the WFP Uganda Country Director. The Country Director or his/her delegate will be funds manager, and the WFP Uganda finance officer will be the allotment administrator. The Project Manager is supported by an advisor and international and national staff and is directly supervised by the CD.

## Monitoring and Evaluation

32. The key performance indicators (KPIs) for this SO are based upon best-practice logistics management by objectives. Each objective has been carefully reviewed to ensure it meets the requirements of being specific, measurable, attainable, relevant, and time-bound. The KPI's for this SO are as follows:

- At minimum, a 70% reduction of post-harvest loss for participating farmers;
- The number of participating smallholder farmers to receive post-harvest handling, storage, and management training will be 34,000-40,000, of which a minimum of 50% will be female farmers; and
- The number of participating smallholder farmers to be supplied with hermetically-sealed household storage units will be 34,000-40,000, of which a minimum of 50% will be female farmers.

33. To assess the lead KPI of a minimum 70% reduction in post-harvest food loss for participating farmers, a robust monitoring and evaluation stage (Stage 4) will evaluate the performance and efficacy of improved storage equipment as well as measure rates of grain infestation, contamination, deterioration, and moisture

levels at the 30 and 90 day marks after commencement of storage (compared against traditional storage practices and equipment). Information gathered from the 2 preceding WFP PHL projects in Uganda will be used in conjunction with other national studies in the same farming regions to establish a baseline measure for participating farmers to measure any improvements in reducing their levels of grain loss.

34. With the assistance of the Massachusetts Institute of Technology, WFP is also developing a methodology to capture the social and economic benefits of reducing food losses at the household level when appropriate capacity development and improved farming equipment are introduced to farmers. This will include broad metrics to capture the increase in farmers' income and heightened control over the percentage of harvest retained and timing of sale. This methodology will be refined and integrated into the overall monitoring and evaluation exercise as appropriate so WFP can better measure the impacts of the additional benefits of dramatically reducing post-harvest food losses at the farm level. These include augmented household finances; improved family well-being (through increased nutrition and reduced exposure to food contamination); and increased surplus, quality food for community consumption. Whilst not a prerequisite, an ambition of this SO is to also develop a methodology for measuring the impact of these PHL improvements achieved by individual farmers at a national and regional level.
35. To assess increase in farmers' ability to access quality-oriented markets and enhanced support of existing P4P activities, WFP will analyze any significant changes to the quality and throughput of grains received and sold from P4P warehouses and the quantity of grains WFP procures locally against historical trends. Presumably, a marked increase may very well signal that farmers are able to successfully retain greater portions of their harvests, while maintaining a basic level of acceptable, saleable quality.
36. Lessons learned from consultations with central and local level of government, regional agricultural institutions, implementing partners, and public and private sector actors will be shared with various stakeholders and used to inform WFP and donors for future programming.
37. Gender: WFP acknowledges the importance of women in improving the agricultural sector growth. However, women are severely constrained by their meager share in the means of production, land, capital, credit, and technology and their marginalization in production, all of which are rooted in unequal gender relations at the household level. They also lack opportunities for enhancing their skills. As a way of addressing these issues, WFP will ensure this project builds upon the achievements of the past 18 months<sup>4</sup> and guarantees a minimum of 50% of all participating beneficiaries will be women farmers.

## Exit Strategy

38. Private Sector Engagement – WFP will increase engagement with equipment producers and distributors in project districts to ensure the sustainability and impact of the project far beyond the period of WFP's involvement. In addition, it is

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<sup>4</sup> See Annex I.

envisaged that the private sector will respond positively to rising demand for farming training and equipment provision on a full cost recovery basis.

39. Critical to this success is encouraging the private sector to provide farmers creative financing options, to market products and set up demonstration sites further upcountry, and to innovate in response to farmers' evolving needs. To this end, WFP has commenced talks with 3 local financial institutions on ways of promoting greater linkages and facilitating exchanges amongst equipment producers/distributors, financial institutions, farmer organizations, and larger grain aggregators and traders to encourage increased commercial activity. The selected partner/s have yet to be confirmed and the final lending models are still incomplete. The target for completing this work is July 2015.
40. WFP will explore the possibility of coordinating business mentoring for the private sector to create commercial networks for farmer outreach and marketing, as well as developing separate, complementary trainings which will reinforce the same post-harvest handling practices promoted in WFP's own trainings. WFP will also support equipment manufacturers to devise customer service/care, business/marketing, and customer retention strategies, including those that incorporate mobile and social media (e.g. SMS and radio).
41. In addition, WFP will liaise with private sector enterprises to devise cradle-to-grave strategies for repairing and servicing equipment where possible and disposing/recycling of discarded equipment at the end of their useful lifespans, perhaps on a deposit credit system.
42. Lastly, WFP will encourage the private sector to help educate farmers on how to maximize the utilization of storage units and to understand the potential income and economic benefits of storing higher value crops.
43. Government Engagement – As WFP phases out its provision of farmer training and subsidization of storage equipment over the coming years, it is anticipated that the government will take a more active role in implementing post-harvest loss reduction activities. A successful handover will require the engagement of district and local authorities, as well as extension officers serving the communities (e.g. as required in the current World Bank Agricultural Development Project proposal for Uganda). A key entry point for increasing government involvement is to gradually hand over responsibilities for farmer capacity development and training to Ministry of Agriculture extension agents. WFP will further explore such handover strategies with government counterparts.

## RECOMMENDATION

This Special Operation covering the period from 17 May 2015 to 16 May 2016 at a total cost to WFP of US\$ 5,665,809 is recommended for approval by the Executive Director with the budget provided.

## APPROVAL

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Ertharin Cousin

Executive Director

## ANNEX I

### Post-Harvest Loss Reduction Action Trial and SO 200671 Achievements to Date

The key highlights from the Action Trial and SO 200671 activities are as follows:

#### Action Trial (August 2013 to April 2014)

- 400 smallholder farmer households (200 in Uganda, 200 in Burkina) received post-harvest handling and storage training and subsidized storage equipment.
- 5 improved storage technologies tested (Super Grain Bags, ZeroFly Bags, Plastic Silos, Metal Silos, and GrainSafes).
- For all participating farmers, without exception, the new procedures and technologies enabled food losses to be reduced by more than 98% compared to traditional storage regardless of crop and the duration of storage.
- In the trial, farmers also realized a direct increase in household income of between 60 and 100 percent.
- Results are especially impactful, given that crop losses in traditional storage units far exceeded previously reported country averages, due to farmers extending the storage period beyond their normal practices to accommodate the trial.

#### SO 200671 (March 2014 to time of writing, March 2015)

- The project originally intended to reach 41,000 farmers in Uganda and Burkina Faso, at least 30% of whom to 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. These farmers received training on improved methods to harvest, process, dry and store crops; as well as subsidized household food storage equipment.
- The percentage of female beneficiaries reached has exceeded 60%.
- Training materials were translated into 14 local languages.
- 4 different storage options were made available for farmers (Super Grain Bags, plastic tanks, and 2 sizes of metal silos), along with drying tarpaulins. More than 63,000 pieces of storage equipment were distributed with the help of 9 implementing partners.
- 6 local metal fabricators and tinsmith artisans trained in producing quality metal silos to precise specifications.
- At time of writing this successor SO draft, monitoring and evaluation activities measuring the impact of storage distributed prior to the December 2014 harvest were ongoing and will be completed with full results scheduled to be disseminated in April/May 2015.
- For Uganda, which had an original budget split of US\$ 6.5 million, only US\$ 2.2 million was received (34% funded). However, WFP Uganda was able to leverage cost efficiencies and contain expenses to still reach 81% of its original planned beneficiary load of 20,500 farmers. The original budget included generous safety margins, and the inflated budget and cost per farmer for additional beneficiaries has been reduced in this BR.
- New SO 200836 proposes an upfront cost per farmer, of which a percentage (farmer contributions towards equipment) will be recouped. A reduced subsidization level for equipment will be maintained in this new SO.