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TECHNICAL BRIEF

SUPPORT TO THE DEVELOPMENT OF NATIONAL STRATEGIES FOR POST-HARVEST LOSS REDUCTION

UNITED NATIONS ROME-BASED AGENCIES SUPPORT TO THE
DEVELOPMENT OF THE REPUBLIC OF UGANDA'S NATIONAL STRATEGY
ON POST-HARVEST LOSS REDUCTION IN GRAIN SUPPLY CHAINS



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ACRONYMS AND ABBREVIATION

AU	African Union
AUC	African Union Commission
FAO	Food and Agriculture Organization of the United Nations
IFAD	International Fund for Agricultural Development
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries (Uganda)
MoTIC	Ministry of Trade, Industry and Cooperatives (Uganda)
PHL	Post-harvest losses
PHLMS	Post-harvest loss management strategy
RBA	United Nations Rome-based Agencies
SDC	Swiss Development and Cooperation Agency
SDG	Sustainable Development Goals
UGX	Ugandan Shilling
USD	United States Dollar
WFP	World Food Programme



INTRODUCTION

The African Union (AU) Heads of State and Government included a commitment in the 2014 Malabo Declaration (African Union Commission or AUC. 2014) to halve post-harvest losses (PHL) in Africa by 2025. The African Union post-harvest loss management strategy (PHLMS) (AUC. 2018) provides a continental framework to guide member countries towards the achievement of this commitment. The implementation of the AU PHLMS directly contributes to the attainment of the United Nations Sustainable Development Goal (SDG) target 12.3, which aims to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses, by 2030.

Despite efforts at the regional and local levels, most governments in sub-Saharan Africa lack adequate policies and strategic frameworks to coordinate actions to reduce post-harvest losses. Within the context of the United Nations Rome-based Agencies' (RBA) joint project: "Mainstreaming food loss reduction initiatives for smallholders in food deficit areas" (FAO, IFAD and WFP. 2019), funded by the Swiss Development and Cooperation Agency (SDC), the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), and the World Food Programme (WFP) supported the governments of Burkina Faso, the Democratic Republic of the Congo and the Republic of Uganda in mainstreaming food loss reduction within their national policy frameworks.

According to the State of Food and Agriculture titled *Moving forward on food loss and waste reduction* (FAO. 2019), while around 14 percent of the food produced globally is lost, it is crucial to identify the location, the determinants, and extent of losses across stages in the food supply chain, in order to provide informed guidance on policy and interventions to be implemented in a specific context. The report also asserts that: "reducing on-farm losses – particularly for small-scale farmers in low-income countries – can allow farmers to improve their diets due to increased food availability and gain higher incomes if selling part of their produce. It can also lead to increased supply and lower prices further along the food supply chain and eventually for consumers."

The FAO food loss analysis methodology, coupled with comprehensive multi-stakeholder consultations serve as useful tools for developing evidence and building consensus on critical issues in the food supply chain that lead to losses, and assist in the establishment of policy frameworks

and strategies targeting post-harvest loss reduction. This methodology was a critical input for the elaboration of the Uganda national strategy on post-harvest loss reduction in grain supply chains (FAO, IFAD, Ministry of Agriculture, Animal Industry and Fisheries [MAAIF] and WFP. Forthcoming).

The present technical brief discusses the process of development of the Uganda national strategy on post-harvest loss reduction in grain supply chains (FAO, IFAD, MAAIF & WFP. Forthcoming)¹, which was developed in the framework of the project using the FAO food loss analysis methodology. The brief shares recommendations and lessons learned from the development of the strategy, which can be used or adapted by governments developing a post-harvest loss reduction strategy to coordinate interventions, engage with key stakeholders, and invest and allocate resources to achieve post-harvest loss reduction goals.

¹ Including but not limited to the following: cereals (maize, sorghum, millet, rice and wheat); pulses (beans, peas, groundnuts), and oils crops (sesame and sunflower).

Strategy preparation

The approach taken by the RBA project on the development of policies and strategies conducive to food loss reduction is based on evidence generated by food loss studies and on broad consultations with key stakeholders in the supported supply chain.

The FAO case study methodology identifies and analyses the underlying causes of food losses in selected food supply chains, identifies critical loss points, and recommends feasible solutions and strategies to address losses.

The food loss analysis methodology is based on a combination of the following four methods: a screening to provide an overview of the subsector and to select the food supply chain to be studied; a survey to identify and assess the critical loss points and the possible major causes of losses at different levels; a load tracking and sampling method to collect indicative quantitative data and qualitative information that supports the findings of the survey on the critical loss points and the main causes of losses; and a synthesis and solution finding component to identify and assess solutions that are technically, economically, socially, environmentally feasible for reducing food losses. Finally recommendations are formulated to establish policies and strategies conducive to food loss reduction based on the results of the aforementioned methods. In the Republic of Uganda, the RBA joint project carried out food loss analysis in maize, sunflower and bean supply chains. The studies identified critical loss points and the major causes of losses in the supply chains, as well as feasible solutions that

informed the development of strategic recommendations for policy-makers. These strategic recommendations formed the basis for the development of the Uganda national strategy on post-harvest loss reduction in grain supply chains, and were complemented by an extensive review of relevant literature such as research reports and publications, the National Agriculture Policy, Agriculture Sector Strategic Plan and National Development Plans.

The development of the post-harvest loss reduction strategy drew on consultations with a wide spectrum of stakeholders, which included actors in the grain value chain: producers, aggregators, processors, technology suppliers, warehouse operators, distributors and consumers; MAAIF and other ministries such as the Ministry of Trade, Industry and Cooperatives (MoTIC); the Ministry of Finance, Planning and Economic Development; the Ministry of Works and Transport; the Ministry of Local Government; Academic and National Agricultural Research Organisation and other state actors, development partners, international organizations, private sector companies and civil society organizations.

The main objective of the broad consultation was to discuss and agree on issues related to current post-harvest management practices. Consultations revealed the challenges observed in the post-harvest management of grains; good practices and solutions needing to be promoted and used; and interventions proposed for the national strategy. The participatory and consultative approach was essential to engage and receive feedback from key stakeholders, and for their buy-in to implement the strategy.



Development of the Uganda national strategy on post-harvest loss reduction in grain supply chains

The MAAIF Policy Unit led the development of the Uganda national strategy on post-harvest loss reduction in grain supply chains. The United Nations RBA joint project supported the development of the evidence base by contracting a national expert to collect and analyse the information and data required to formulate the strategy document; provide relevant information on food losses and post-harvest management in grain supply chains; assist operational aspects; and validate

the content of the strategy document by convening a national workshop in 2019. The strategy covers cereals (maize, sorghum, millet, and rice), pulses (beans and peas), and oilseeds (sesame, sunflower and groundnuts).

The outcomes of the food loss analysis studies carried out in the framework of the project and the comprehensive consultations led to the identification of and consensus on the following major causes of losses along the grain supply chains. These analyses served as a basis for identification of the main issues to be addressed by the strategy:

TABLE 1: Republic of Uganda: major causes of losses in grain supply chains

Supply chain	Major causes of losses
Harvesting	<ul style="list-style-type: none"> ▶ Limited awareness of losses at harvest ▶ Lack of knowledge of good post-harvest management practices and poor harvesting techniques (Poor timing – premature or late harvesting); field drying causing losses from pests, disease and theft; crops remaining in the field unharvested)
Drying Shelling Threshing Pounding Winnowing Sorting	<ul style="list-style-type: none"> ▶ Negligence and poor mind-set ▶ Lack of knowledge of good post-harvest management practices and the relationship between quality of grain, food safety and incomes (Mixing with other grains; contamination of grains and adulteration; poor shelling methods breaking grains; rot and formation of mould caused by insufficient drying; destruction by termites) ▶ Poor quality machines ▶ Lack of affordable drying materials ▶ Theft ▶ Unfavourable weather
Storage (at producers, aggregators, and warehouse levels)	<ul style="list-style-type: none"> ▶ Poor mind-set ▶ Lack of knowledge of good storage practices (Bags stacked up to roof, on walls and/or on floor; non-use and misuse of fumigants/pesticides; counterfeit chemicals; mixing of grains; poor packaging materials causing proliferation of pests, rodents and weevils; rough loading and off-loading) ▶ Poor storage materials/facilities; poor ventilation; roof leakage ▶ High cost of storage and chemicals, inaccessible and hazardous use of pesticides
Processing	<ul style="list-style-type: none"> ▶ Limited skilled personnel ▶ Inefficient technology and practices used (poor quality machinery, high moisture content of grains; poor quality grains) ▶ High cost of power; expensive machines and maintenance ▶ Theft by machine operators
Distribution and Marketing	<ul style="list-style-type: none"> ▶ Lack of knowledge of good practices (rough/improper handling and loading of bags; spillage; spoiled produce mixed with good) ▶ Low quality sacks and bags ▶ Bad road and vehicle conditions; poor market infrastructure ▶ Traders' lack of funds for accessing appropriate markets ▶ Pilfering during transportation ▶ Exposure to bad weather

Source: FAO, IFAD, MAAIF and WFP (Forthcoming).

Traditional storage options



The process identified the following factors that contribute to food losses at the institutional level: lack of coordination among actors in the value chain; lack of support for the adoption and scaling-up of best practices for post-harvest loss reduction; insufficient capacities at research institutions, training centres and universities; lack of awareness of post-harvest losses and capacity within public institutions including the MAAIF and MoTIC; lack of coordination on post-harvest loss reduction issues with other disciplines such as health, nutrition and business enterprise development). The consultations also highlighted the lack of financial support throughout the agricultural supply chain and incentives to promote post-harvest loss reduction. Allocated budgetary resources are limited for post-harvest loss reduction activities and solutions; import taxes on post-harvest equipment are high; and there is no commodities exchange or warehousing receipt system.



Based on the above, the following main strategic issues impacting the Ugandan grains sector have been identified:

- ▶ lack of awareness and a negative mind-set in regard to appropriate PHL reduction;
- ▶ inadequate knowledge and skills in PHL reduction;
- ▶ improper/inadequate technologies and practices used to reduce PHL;
- ▶ lack of a regulatory and policy framework or weak enforcement for coordinating PHL reduction along the grain value chains.

The consultations resulted in the following proposed vision for the Uganda national strategy on post-harvest loss reduction in grain supply chains:

“Food security, nutrition, and incomes of producers and other value chain actors enhanced through increased post-harvest loss reduction. The strategy provides a holistic framework for intervention to improve grain post-harvest handling and storage practices and increase the quality of grains processed, sold and consumed in Uganda”.

The framework will feed into the National Vision 2040² through enhancing income and food security among the grain producers and other value chain actors.

The proposed objective of the national strategy is: “to reduce postharvest losses and ensure grains are handled, stored and marketed in conformity with existing national and regional quality standards (and trade regulations)”

The following four specific objectives have been proposed to address the main strategic issues identified:

- increase general awareness and trigger a change in mind-set towards reducing grain PHL;
- enhance the knowledge and skills of actors in the value chain so they can effectively reduce PHL;

Improved storage



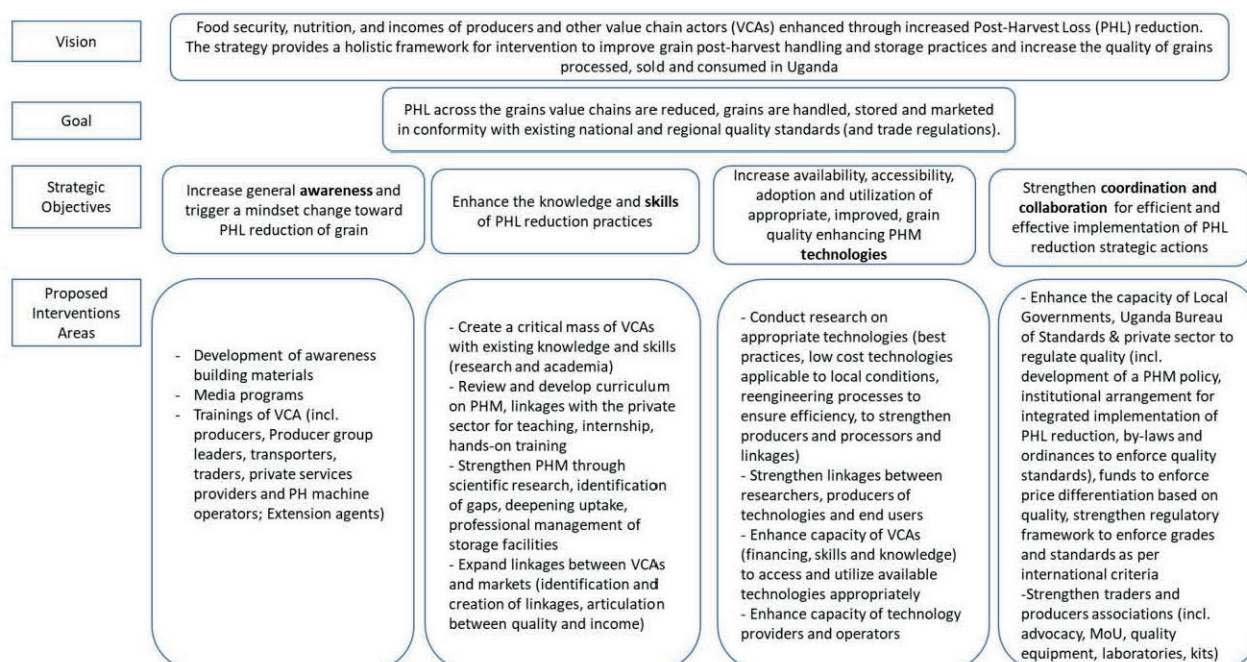
² Uganda society transformed from a peasant to a modern and prosperous country within 30 years from 2010-2040.

- increase availability, accessibility, adoption and use of appropriate and improved grain post-harvest and quality enhancing technologies by actors in the value chains;

- strengthen coordination and collaboration to achieve efficient and effective implementation of strategic actions to reduce PHL.

Figure 1 illustrates the proposed results chain of the strategy, with major interventions to be implemented to achieve the four strategic objectives.

FIGURE 1: Proposed result chain for the Uganda national strategy to reduce PHL in grain supply chains



Source: FAO, IFAD, MAAIF and WFP (Forthcoming).

An implementation structure and a detailed five-year action plan have been developed for the strategy, with an estimated budget of United States Dollars (USD) 10 000 000³.

The MAAIF needs to develop a robust strategy to mobilize resources, involving resources from actors in the value chain as well as government and development partners. A monitoring and evaluation plan have been developed and the related mitigation measures proposed.

In addition, an organization and management framework was proposed to coordinate initiatives and partners involved in the implementation of the strategy. The framework proposes that the MAAIF acts as focal point for the operationalization of the strategy. An Inter-Ministerial Committee has been suggested at the Cabinet level to include political leadership from Ministries responsible for Agriculture, Trade, Works and Transport, and the Office of the Prime Minister,

Ministry of Finance, Planning and Economic Development and the Ministry of Local Government. Furthermore, a technical working group, in charge of implementing the strategy, would be formed involving technical officers from ministries, the private sector, development partners, and civil society and farmers/producer organizations. It was proposed that a focal person in the Department of Planning head the technical working group.

³ USD 1 = Ugandan Shillings (UGX)3700

Alignment with the Africa-wide strategy on post-harvest loss management

The development of the Uganda national strategy on post-harvest loss reduction in grain supply chains also sought alignment with the AU strategy on post-harvest loss management to contribute to the goal of halving the levels of losses recorded in 2015 by the year 2025, in line with the Malabo Declaration (AUC. 2018).

The AU continental strategy on post-harvest loss management is anchored to the following pillars, which comprise its strategic objectives:



FIGURE 2. African Union pillars for post-harvest loss management



The proposed strategic objectives for the Uganda national strategy on reduction of post-harvest loss in grain supply chains are broadly aligned with the continental strategy:

- Uganda Strategy SO1 “increase general awareness and trigger a change in mind-set toward reduced grain PHL” is addressed in AU pillars I and II, particularly on awareness and knowledge management.
- Uganda Strategy SO2 “enhance the knowledge and skills of PHL

reduction practices amongst value chain actors” is addressed in AU pillar II, particularly knowledge management and human development on reduction of PHL.

- Uganda Strategy SO3 “increase availability, accessibility, adoption and utilization of appropriate and improved grain post-harvest and quality enhancing technologies by value chain actors” is addressed in AU pillar III on technology, markets and infrastructures.

- Uganda Strategy SO4 “strengthen coordination and collaboration

for efficient and effective implementation of PHL reduction strategic actions” is addressed in AU pillar IV, which aims to ensure adequate budgetary allocation that is crucial for the implementation of the proposed interventions.

Monitoring of the impact of implementation of the proposed interventions in the Uganda national strategy on the reduction of post-harvest loss in grains would contribute to the monitoring of progress towards reducing post-harvest losses at the

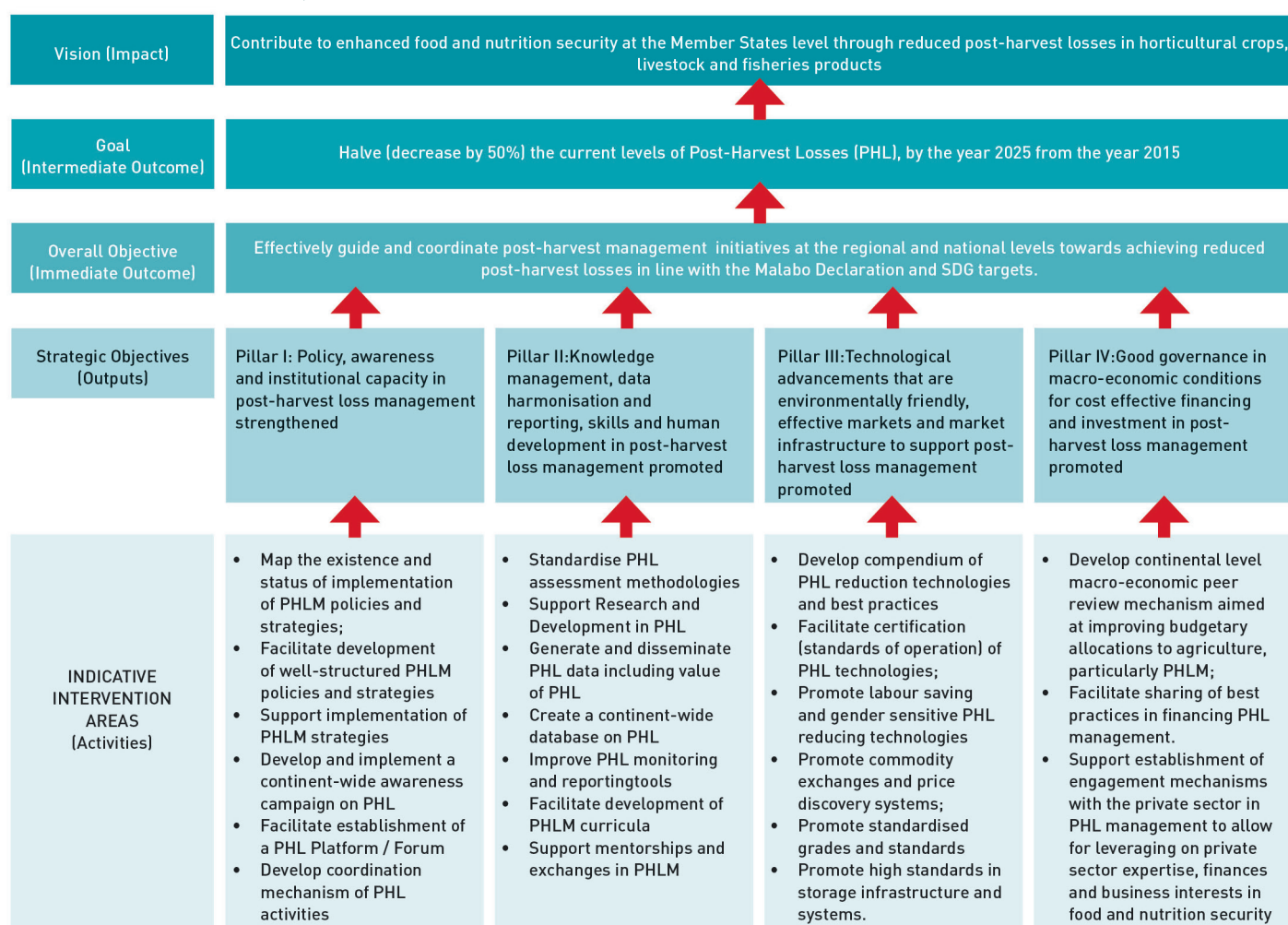
continental level. The performance indicator set in the framework of the Comprehensive Africa Agriculture Development Programme for tracking achievement of the Malabo Declaration Commitment is based on reducing the rate of post-harvest losses for (at least) five national priority commodities, and possibly for the AU agriculture priority commodities: rice, maize, legumes, cotton, oil palm, beef, dairy, poultry and fisheries, cassava, sorghum, millet. The definition of the indicator for post-harvest losses at the continental level is the percentage of total production that is lost (qualitative and quantitative) occurring during all the post-harvest systems for priority products. Reporting

is restricted to the losses that occur during harvesting, storage, transport, processing, packaging and sales, which are also stages the Uganda strategy will focus on for proposed interventions in the grain value chains. The analysis of the data to be collected for monitoring post-harvest loss reduction will provide crucial information on the effects of the proposed interventions, which is essential for ensuring the efficient use of resources and orienting investments where most needed.

Figure 3 illustrates the African Union strategy for post-harvest loss management results chain with indicative interventions.



FIGURE 3: African Union strategy on post-harvest loss management in food products listing indicative interventions



Source: AUC, 2018

CONCLUSIONS AND RECOMMENDATIONS

The development of the Uganda national strategy to reduce post-harvest loss in grain supply chains shows the value of conducting food loss analyses and comprehensive multi-stakeholder consultations. Evidence is built and consensus achieved for the development of policy frameworks and strategies that target post-harvest loss reduction. Involvement and buy-in from key actors is ensured at different levels, which is essential for the implementation phase.

By identifying the key strategic issues and feasible solutions to be addressed in context, the embedded multidisciplinary approach informs the interventions to be prioritized and supported in the framework of the strategy.

The formulation of the Uganda national strategy on post-harvest loss reduction in the grain supply chain shows how the complex and interrelated causes of losses identified by food loss analysis and consultations are categorized under the main strategic issues. The strategy needs to focus on these areas, as well as the identified solutions and policy

recommendations comprising the interventions suggested for their implementation.

The use of this methodology to develop post-harvest loss reduction strategies across different African countries can foster alignment and contribute towards the Africa continental strategy to achieve the Malabo Declaration on halving post-harvest losses by 2025 (AUC. 2014) and SDG target 12.3. The methodology is key to optimizing the use of resources in addressing common strategic issues to effectively reduce post-harvest losses and track progress towards reduction of losses at national, continental and global levels.

Development and implementation of the above-mentioned strategies require the allocation of financial and human resources. Institutional support will be required to generate awareness at all levels, for training, development of regulations and coordination to ensure efficient implementation. The institutions involved will need to be appropriately structured and mandated, and appropriate regulatory arrangements developed and enforced.

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