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## POST-HARVEST LOSS REDUCTION FOR ENHANCED FOOD AND NUTRITION SECURITY IN IGAD MEMBER STATES

May 2022

SDGs:



Countries: Djibouti, Ethiopia, Eritrea, Kenya, Somalia, Sudan, South Sudan and Uganda

Project Code: TCP/SFE/3702

FAO Contribution: USD 200 000

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### Implementing Partners

The Intergovernmental Authority on Development (IGAD).

### Beneficiaries

Ministries of agriculture of the IGAD Member States.

### Country Programming Framework (CPF) Outputs

FAO Regional Initiative 2 (RI2): Sustainable Production Intensification and Value Chain Development in Africa.



### BACKGROUND

Food insecurity and malnutrition remain a major public health and socio-economic concern in Africa, particularly in Eastern Africa, which is home to more than half of the continent's undernourished population. The region is highly dependent on food import, in particular cereals. According to recent estimates (FAO, 2021, The State of Food Security and Nutrition in the World), around 70 million people in the region are food insecure, and at least 20 million of its population are dependent on food aid.

The lack of food self-sufficiency has prompted national and regional policymakers in the Eastern Africa region to investigate the causes of low production and to promote interventions to increase domestic food production and reduce food losses along the agricultural value chain. Post-harvest losses (PHL) is an essential, but often overlooked component that jeopardizes food security and affects incomes of producers. PHL is a measurable reduction in foodstuffs caused by insects, microorganisms, rodents, and birds, which can affect the quantity or quality of agricultural crops produced.



According to FAO, up to one-third of all food produced worldwide was lost or wasted between production and consumption in 2019 with losses in sub-Saharan Africa estimated to be around 20 percent for cereals, 40 percent to 50 percent for root crops, fruits and vegetables, 27 percent for oilseeds, meat and milk, and 33 percent for fish. Loss refers not only to quantity but also to quality. Quality losses result in lower nutritional value, foodborne health risks, and economic losses when the produce misses market opportunities or loses desirable characteristics to customers. Changes in food nutritional value have a significant impact on efforts to eliminate micronutrient deficiencies and undernutrition. Against this background, African leaders committed to halving PHL by 2025 and adopted in 2014 the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods, while the international community agreed to halve global food losses and waste by 2030 under the third Sustainable Development Goal (SDG) target 12.3.

The high levels of PHL in Eastern Africa have been linked to poorly functioning and inefficient post-harvest systems, particularly poor interventions along the value chain, with most countries in the region experiencing periods of high yields followed by periods of hunger, owing to poor post-harvest loss management (PHLM). However, knowledge of the extent of PHL is limited, and the actions that have been attempted to alleviate the losses are insufficient. A significant impediment to achieving PHL mitigation is a lack of a clear knowledge of the true extent of losses, coupled with an inadequate understanding of the critical loss nodes along the food value chain. To further inform policy-making and PHL reduction program design, it is necessary to assess the economic value of PHL and identify the socio-economic elements that cause losses.

In this context, FAO assisted the Intergovernmental Authority on Development (IGAD), which has been tasked with assisting its Member States (Djibouti, Ethiopia, Eritrea, Kenya, Somalia, Sudan, South Sudan and Uganda) in their efforts to reduce poverty and achieve food security through mutual benefit, based on rational use of natural resources and sound environmental management for sustainable development.

In addition to contributing to the Malabo Declaration and SDGs, this project falls under the IGAD Regional Strategy 2016-2020, the IGAD Drought Disaster Resilience and Sustainability Initiative Strategy (IDDRSI), and is aligned with the Africa Union Agenda 2063, the Comprehensive Africa Agriculture Development Programme (CAADP) and the IGAD-CAADP Regional Investment Plan (RAIP) 2016-2020.

## IMPACT

This project enabled stakeholders in Eastern Africa to gain a better understanding of PHL and increase their capacities as well as to improve the institutional environment for the implementation of PHL reduction activities. By promoting action towards an enhanced PHLM, this project helps improve the food and nutrition security in the region.

The support provided to reduce food waste and loss is in line with SDG 12, which aims to promote responsible consumption and production, as well as SDG 2, which ambitions to eliminate hunger by 2030.

## ACHIEVEMENT OF RESULTS

This FAO project aimed to assist IGAD Member States in meeting SDG target 12.3 and Malabo Declaration Commitment 3.3 to end hunger in Africa by 2025 by halving current levels of post-harvest losses. To that end, FAO assisted in the development of a regional strategy for an enhanced PHLM as well as the necessary tools for its implementation at the regional and national levels.

The first milestone of this project is the development of a regional strategy for PHL reduction in conformity with the African Union Continental Framework. This strategy seeks to support the management of food losses in Eastern Africa through developing, implementing and coordinating policies, investments, processes, regulations and regional trade activities that require intervention and coordination at the regional level. FAO and the IGAD Secretariat developed a draft PHLM regional strategy, a monitoring and evaluation (M&E) framework and an action plan informed by country PHL assessment reports, inputs and feedback from relevant stakeholders and key informants. This formulation was made possible by reviews of current national PHL policies in Djibouti, Ethiopia, Kenya, South Sudan, Sudan, and Uganda. These reviews made it possible to: i) assess the current national PHL status; ii) identify five priority food commodities and map out their value chain structures; iii) identify critical loss points (CLP) for these priority food commodities; iv) discuss the level of losses, micro, meso, and macro causes and solutions for each CLP; and v) identify regional issues affecting the management of PHL for all five priority food commodities and propose possible policy interventions. Based on these findings, the IGAD Secretariat and FAO convened a regional technical workshop allowing the PHLM regional strategy and its M&E framework to be reviewed and enhanced. The revised strategy was then technically validated during a regional pre-ministerial technical experts session and endorsed by IGAD ministers of agriculture.

The strategy outlined five strategic objectives that will be carried out at the regional level through the IGAD: i) raising PHL policy awareness and communication to enhance implementation; ii) coordinating and ensuring coherence of PHL reduction activities; iii) promoting private sector participation; iv) carrying out knowledge management and capacity building in PHLM; and v) ensuring adaptive research, data collection, and PHL measurement.

This project also focused on strengthening the capacity of the IGAD Secretariat and its Member States in designing and implementing food loss reduction policies, strategies and programmes. This was achieved through capacity building sessions for both technical and policy-maker personnel from the IGAD Secretariat and IGAD Member States staff on PHL assessment, and designing and implementing food loss reduction solutions. A field trip to the Ethiopian Institute of Agricultural Research was also organized, where participants were exposed to hands-on work through laboratory exercises such as grain sampling, visual sorting of damaged and undamaged grains by pest during storage, and demonstration of improved grain storage technologies (including metal silos and hermetic bags). These training sessions were complemented by awareness-raising activities on the magnitude and impact of food loss and waste in the region held during a technical stakeholders consultation workshop, a pre-ministerial technical experts session, a ministerial meeting, and a training of trainers workshop.

Furthermore, FAO-developed PHL training materials, notably the FAO Food Loss Analysis Methodology, were adapted to the regional context by competent PHLM experts. The IGAD and its Member States committed to adopting the FAO Global Food Loss Index and to incorporate it into the IGAD reporting system, while the Malabo Declaration M&E framework was partially incorporated into the IGAD PHLM strategy.

Finally, two project proposals on PHL reduction of grains in the IGAD region were formulated by the IGAD thanks to FAO's support and by FAO in collaboration with WFP. These project proposals will allow additional funding to be sought to ensure the continuity of the project and the implementation of the PHL reduction activities. This proposal was enriched by inputs and feedback from training of trainers workshop participants, and consolidated by PHLM experts.



## IMPLEMENTATION OF WORK PLAN AND BUDGET

At the beginning of the project, a two-day inception workshop in Djibouti successfully brought together 26 participants from IGAD Member States' ministries of agriculture, the IGAD Secretariat, the African Union and FAO to agree on a work plan and the various roles of stakeholders for the project's successful execution. Given the project's limited budget and timeframe, it was underlined that the project will serve as a catalyst for the launch of several future initiatives, which are expected to leverage the results of this project after the project concludes.

One of the project's strongest assets was the commitment and collaborative approach adopted by the IGAD Secretariat, IGAD Member States via their ministries of agriculture, FAO, the private sector, NGOs, and other UN agencies, guaranteeing that each partner effectively carried out its roles and responsibilities. This project also built on previous PHL activities carried out by FAO, the Rockefeller Foundation and the African Union Commission (AUC) in 2018 that led notably to the development of a PHLM strategy to guide and coordinate food losses and waste reduction initiatives.

Due to COVID-19 travel restriction measures, certain activities, in particular face-to-face trainings, could not be conducted on time. Therefore, the deadline of the project was postponed two times to ensure its full implementation. Nevertheless, most activities were implemented within the planned budget. However, a resource mobilization workshop could not be organized within the project timeframe.

## FOLLOW-UP FOR GOVERNMENT ATTENTION

The IGAD ministries of agriculture agreed to fully implement the newly-developed strategy at the national level, either through its integration into existing national frameworks or through the development of new national strategies.

Due to limited country capacity on PHLM, continuous capacity development initiatives of technical staff from universities and research institutions, ministries of agriculture and their affiliated institutions, NGOs, and the private sector are required. The master trainers trained during the training of trainers workshop are key staff that can support capacity strengthening in the region. Thanks to the support from the IGAD, they can deliver training to community level extension workers.

Additionally, to coordinate and monitor food loss reduction initiatives, technical experts who attended the training of trainers workshop agreed to establish national technical working groups to serve as an information sharing and networking platform on PHLM to guarantee capacity building and technical support to the IGAD Member States.

In addition to capacity building, the dissemination of project findings and results will serve countries that can benefit from other countries' experiences. The translation of project documentation through the IGAD Secretariat will contribute to this objective.

The FAO global call to reduce food loss and waste, launched during the International Day of Awareness of Food Loss and Waste in 2021, is an important initiative that could support the continuity of some of the activities initiated during the project, such as strengthening capacities for food loss reduction. In addition, the ministries of agriculture of the IGAD Member States need to mainstream and implement PHLM strategies, and are expected to report on their efforts to reduce PHL every two years as part as their commitments towards the Malabo Declaration. Countries that are not able to fulfil this commitment will receive a low rating under the AUC reporting system. In this regard, there is a need to support further initiatives for PHLM with further funding, so that the identified best practices and interventions can be scaled up and expanded in all IGAD Member States. It is recommended that the IGAD Member States and IGAD Secretariat allocate more resources and invest more in this objective.

Several countries showed an interest in collaborating on projects and sharing resources. To maintain this dynamic, additional support will be required. Two project proposals are currently under development: one by the FAO Subregional Office for Eastern Africa and the other by the IGAD Secretariat.

## SUSTAINABILITY

### 1. Capacity development

The project helped in developing national capacities in PHL assessment and management. The emphasis was placed on training and capacity building of national stakeholders, including government officials, academic and research institutions, and value chain actors. A total of four sensitisation events and one training of trainers workshop targeting technical and policy stakeholders were conducted.

Staff from research and education institutions, ministers of agriculture and affiliated institutions, the IGAD Secretariat and the private sector were trained during a training of trainers workshop on the assessment and reduction of PHL. In total 22 participants from Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda participated to a five-day face-to-face training in Addis Ababa in Ethiopia. They now form a pool of master trainers that will contribute to the sustainability of the project by ensuring dissemination of the knowledge.

## 2. Gender equality

The project took into consideration the fact that women play a key role in harvesting and post-harvest handling stages. Efforts were made throughout the project to ensure the inclusion of women in project activities, and national consultants hired under this project were encouraged to involve more women in conducting key informant interviews during assessments. Out of 22 participants at the training of trainers, eight were female and 14 male.

Awareness was also raised during project workshops and meetings on the importance of the gender component (including the youth) in PHLM and PHL reduction measures and interventions.

## 3. Environmental sustainability

Reducing food losses preserves agricultural resources and inputs while lowering the carbon footprint caused by lost or wasted food. The project ensured that participants were sensitized on the environmental impact of food loss, as well as the availability of low-cost and environmentally friendly technologies and solutions, such as locally sourced hermetic storage options (hermetic bags, plastic silos and metallic silos) for grains and a zero energy cool chamber for fruits and vegetables at household level, to reduce food loss and waste for various food value chains.

## 4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The project contributed to poverty reduction, nutrition and food security enhancement. During its implementation, the project strictly adhered to the principles of non-discrimination and the promotion of gender equality.

## 5. Technological sustainability

Through the development of a PHLM strategy and the training of stakeholders, the role of effective, scalable and user-friendly technologies and best practices for reducing PHL were emphasized.

## 6. Economic sustainability

In the long term, the effective implementation of the PHLM strategy at regional and national levels will induce positive economic effects for farmers, rural communities and the food supply chain sector which will benefit from decreased input cost and increased incomes.



## DOCUMENTS AND OUTREACH PRODUCTS

### Documents

- IGAD post-harvest loss management strategy.
- IGAD M&E framework and action plan.

### Outreach material

- Ethiopian Monitor.** Press release. IGAD's agriculture ministers devise strategy to tackle post-harvest loss. <https://bit.ly/3MufAQC>.
- FAO.** Press release. Reducing post-harvest loss and waste; crucial to ensuring food and nutrition security in the IGAD region. <https://bit.ly/3G1puGP>.
- FAO/IGAD.** Training modules and other training materials for training of trainers.
- IGAD.** Press release. IGAD ministers for agriculture endorsed a new strategy on post-harvest loss management. <https://bit.ly/3tbEFYU>.



## ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

<b>Expected Impact</b>	<b>Improved food and nutrition security in IGAD member countries through reduced food losses</b>		
<b>Outcome</b>	Improved knowledge base on the status of food loss reduction initiatives in the region would provide a strong basis for action		
	<b>Indicator</b>	Number of projects on PHL Management in IGAD's Member States.	
	<b>Baseline</b>	2	
	<b>End Target</b>	4	
	<b>Comments and follow-up action to be taken</b>	Six food loss reduction initiatives in the IGAD region were mapped out.	
<b>Output 1</b>	Regional Strategy on post-harvest loss management aligned with AU Continental framework formulated		
	<b>Indicators</b>	<b>Target</b>	<b>Achieved</b>
	IGAD PHL management (PHLM) Strategy developed and validated by Member States.	1	Yes
<b>Baseline</b>	0		
<b>Comments</b>	Thanks to an international expert, a draft strategy, including a supporting M&E system consistent with the African Union Continental Strategy and M&E framework, was developed. Subsequently, a regional technical stakeholder consultation workshop was convened on 12 July 2021 to review and enrich the draft PHLM strategy and its M&E framework and action plan. The IGAD PHLM strategy was technically validated during a regional pre-ministerial technical experts session and endorsed by the IGAD ministers of agriculture during a virtual ministerial meeting organized by IGAD, with FAO technical and financial support on 12 August 2021.		
<b>Activity 1.1</b>	<b>Inception Workshop</b>		
	<b>Achieved</b>	Yes	
	<b>Comments</b>	<ul style="list-style-type: none"> <li>- A two-day inception workshop was held in Djibouti on 11-12 March 2019, to officially launch the project. Twenty-six participants, both key technical and policy stakeholders from the Ministries of Agriculture of the IGAD Member States, IGAD Secretariat and FAO, participated in the workshop and agreed on a work plan and roles of stakeholders for a successful implementation of the project. This inception workshop: <ul style="list-style-type: none"> <li>- introduced the key components of the project and foster a common understanding among the IGAD Member States of the specific contribution the project will make to the reduction of post-harvest food losses in the region;</li> <li>- reviewed past and ongoing work in the region that the project may build on; and</li> <li>- developed and agreed on a detailed list of activities and outputs for the project including clear areas of focus and on timelines.</li> </ul> </li> <li>- Given the limited budget and timeframe of the project, it was outlined that the project will act as a catalyst that will initiate these activities that will continue after the end of this project through new sources of funding. The inception workshop was successful in bringing together all major stakeholders, both from the African Union and country-level and developing a joint vision for the project. This ensured ownership of the project by its stakeholders and sustainability of the actions beyond the lifetime of the project.</li> </ul>	

Activity 1.2	Assessment of national PHL policies and strategies to feed into the regional strategy development	
	Achieved	Yes
Comments	<ul style="list-style-type: none"> <li>– National consultants were recruited and undertook PHL national assessments for five priority commodities. Given the movement restrictions due to COVID-19, these assessments were conducted through desk reviews and key informants interviews. The following tasks were performed: <ul style="list-style-type: none"> <li>- assessment of the current national PHL status;</li> <li>- identification of Malabo reporting priority food commodities and mapped out their value chains structures;</li> <li>- identification of critical loss points (CLPs) for priority food commodities;</li> <li>- discussion on the level of losses, micro, meso and macro causes and solutions for each CLP;</li> <li>- identification of regional issues affecting the management of PHL for all five priority food commodities and proposed possible policy interventions to reduce these losses;</li> <li>- reporting country CAADP biennium score and performance; and</li> <li>- providing country PHL 2019 to 2025 projections.</li> </ul> </li> <li>– The recruitment of national consultants also served as a mean to strengthen the PHL assessment and management capacities. Six national PHL assessments were completed for Djibouti, Ethiopia, Kenya, South Sudan, Sudan and Uganda.</li> </ul>	
Activity 1.3	Develop regional strategy document on PHL Management aligned with AUC PHL framework	
	Achieved	Yes
Comments	<ul style="list-style-type: none"> <li>– In line with the project's main outputs, the internationally-hired consultant, with the support of FAO and the IGAD Secretariat, developed a draft PHLM strategy, an M&amp;E framework and action plan informed by PHL assessment reports, inputs and feedback from relevant stakeholders and key informants. The strategy seeks to support the management of food losses in the Eastern African region through developing, implementing and coordinating policies, investments, processes, regulations and regional trade activities that require intervention and coordination at the regional level.</li> <li>– The strategy identified five strategic objectives that will be implemented by the IGAD to achieve the overall objective of the IGAD PHLM Strategy: <ul style="list-style-type: none"> <li>- raising PHL policy awareness and communication to encourage implementation;</li> <li>- coordination and coherence of PHL reduction activities;</li> <li>- promoting private sector participation;</li> <li>- knowledge management and capacity development in PHL management; and</li> <li>- adaptive research, data collection, and PHL measurement.</li> </ul> </li> <li>– Each of the IGAD strategic objectives has a set of interventions to achieve the desired outputs.</li> </ul>	
Activity 1.4	Organize Validation Workshop (technical and ministerial level)	
	Achieved	Yes
Comments	<ul style="list-style-type: none"> <li>– The IGAD Secretariat and FAO convened a regional technical stakeholder consultation workshop on 12 July 2021 during which the draft PHLM strategy and its M&amp;E framework were reviewed and enriched.</li> <li>– The revised strategy was technically validated during a regional pre-ministerial technical session on 12 August 2021 and was endorsed by IGAD ministers of agriculture during a virtual meeting organized by IGAD thanks to FAO technical and financial support.</li> </ul>	

<b>Output 2</b>	Human and institutional capacity of the IGAD Secretariat and member countries strengthened in the design and implementation of food loss reduction policies, strategies and programmes		
	Indicators	Target	Achieved
	Number of awareness-raising events and training undertaken.	2	Yes
<b>Baseline</b>	0		
<b>Comments</b>	A total of four sensitisation events and one training of trainers were undertaken targeting technical and policy stakeholders.		
<b>Activity 2.1</b>	Adapting of Post-Harvest Loss reduction Generic Toolkit		
	Achieved	Yes	
	Comments	PHL training materials previously developed by FAO, including FAO Food Loss Analysis Methodology, were adapted to the Eastern African context by PHLM experts.	
<b>Activity 2.2</b>	Undertake Training of Trainers (ToT) of the Member States on post-harvest loss assessments/management		
	Achieved	Yes	
	Comments	<ul style="list-style-type: none"> <li>– Capacity building for IGAD Secretariat staff and representatives of IGAD Member States, both technical and policy-makers personnel, on food loss assessment, and designing and implementing food loss reduction solutions in the IGAD Member States were executed by PHLM experts. A five-day face-to-face training was conducted for selected technical experts on 23-27 March 2022, in Addis Ababa, Ethiopia, to build the capacity of Master Trainers. A total of 22 participants (eight females and 14 males) from Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda and technical officers from IGAD secretariat participated in the training.</li> <li>– The main aim of the training was to conduct specialized training of trainers for the IGAD secretariat and representatives from Member States on food loss assessment and management of various food value chains, with an emphasis on measurement methodologies, data collection and analysis and reporting, to equip the trainees with the knowledge and practical skills.</li> <li>– The training methodology was interactive as the trainers ensured that knowledge was not only disseminated but accurately perceived and understood by the participants. To achieve this, participants engaged in hands-on exercises and group discussions.</li> <li>– A field trip to the Ethiopian Institute of Agricultural Research was also organized, during which participants were exposed to hands-on work through laboratory exercises included grain sampling, visual sorting of damaged and undamaged grains by pests during storage, and demonstration of improved grains storage technologies such as metals silos, and hermetic bags ( including PICs bags and super bags).</li> <li>– The training workshop also served as a platform to receive feedback from the participants on the draft concept note, subsequent full-fledged project proposal and resources mobilization workshop.</li> </ul>	
<b>Activity 2.3</b>	Organize awareness creation on PHL Management		
	Achieved	Yes	
	Comments	Four awareness-raising events were carried out during a technical stakeholders consultation workshop, a pre-ministerial technical experts session, a ministerial meeting, and a training of trainers workshop on the magnitude and impact of food loss and waste in the Eastern Africa region through technical presentations.	
<b>Activity 2.4</b>	Establish national technical working groups to coordinate and monitor food loss reduction initiatives		
	Achieved	Yes	
	Comments	The IGAD ministers of agriculture and the IGAD Secretariat committed to the full implementation and integration of the regional strategy into the national frameworks or through the development of new national strategies. To ensure continuous capacity building in the Member States and regular knowledge and experience sharing, the technical experts who attended the training of trainers committed to forming a technical working group to act as an information sharing and networking platform on post-harvest management.	



<b>Output 3</b>	IGAD PHL M&E system established to monitor and report on progress to achieve the Malabo PHL target and synchronized with the AUC PHL M&E and biennium review process		
	Indicators	Target	Achieved
	Regional PHL M&E System developed.	1	Yes
<b>Baseline</b>	0		
<b>Comments</b>			
<b>Activity 3.1</b>	IGAD adopts the Malabo M&E framework including the newly established Global Food Loss Index (as opposed to the use of PHL percentages)		
	Achieved	Yes	
	Comments	The IGAD Secretariat and FAO developed and incorporated an M&E framework into the IGAD PHL management strategy, in alignment with the continental M&E framework, which was endorsed by IGAD ministers of agriculture.	
<b>Activity 3.2</b>	Incorporation and adoption of the FAO Global food loss index in the IGAD reporting system		
	Achieved	Yes	
	Comments	Following the validation and endorsement of the strategy, regional and national technical working groups on PHL reduction committed to adopting the FAO Global food loss index into the IGAD reporting system.	
<b>Output 4</b>	A bankable project to further enhance efforts on post-harvest loss reduction developed		
	Indicators	Target	Achieved
	Project proposal developed.	1	Partially
<b>Baseline</b>	0		
<b>Comments</b>			
<b>Activity 4.1</b>	Develop a full-fledged project proposal		
	Achieved	Yes	
	Comments	Using the evidence generated by the project activities, the FAO project team in collaboration with WFP developed a project proposal on PHL reduction of grains. Furthermore, during the training of trainers a project proposal write-up workshop took place during which PHLM experts provided their inputs and feedback for a draft concept note to be included in a full-fledged project proposal developed by the IGAD Secretariat and supported by FAO.	
<b>Activity 4.2</b>	Organize resource mobilization workshop for the developed project proposal		
	Achieved	No	
	Comments	This activity could not be undertaken within the project timeframe. However, the IGAD Secretariat with FAO support intends to convene a resource mobilization workshop with donors following feedback from IGAD Member States.	

**Partnerships and Outreach**

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