Rethinking Post Harvest Management Interventions in Southern Africa in the Era of COVID 19

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ABSTRACT

Post-harvest losses among smallholder farmers in the Southern African region have been a major concern with losses as high as 40 percent of harvested crops. This has increased pressure on food security with rapidly expanding population, poor infrastructure to move crops to the market and price volatility. The paper looks at the recommended postharvest interventions strategies and how these have been affected by the prevailing context of COVID 19, and how communities and governments now need to rethink management strategies going forward. Ignoring this important area is not an option for governments and farmers given the opportunity cost involved when more expensive food has to be imported to meet demand in a region that faces perennial food shortages.

INTRODUCTION

Food loss and waste have become a major global phenomenon with losses as high as one-third of the food produced globally for human consumption being put to waste. According to the Food Agriculture Organization (FAO), the annual losses can be quantitatively approximated at a staggering US$680 billion in industrialized countries or US$310 billion in developing countries. For Sub-Saharan Africa, as much as 100 million metric tonnes of losses are recorded each year and of that, roughly US$4 billion is the annual value of post-harvest losses in grains alone, an amount equivalent to food requirements for 48 million people annually (African Union Commission 2019).

[1] SARDC is an independent regional knowledge resource centre established in 1985 to strengthen regional policy perspectives and track implementation on a range of issues in southern Africa, and works in partnership at national and regional levels. SARDC's Institute for China Africa Studies in Southern Africa (ICASSA) was established to coordinate the exchanges, seminars and research activities for China Africa Studies that began in 2007 and focuses on two main objectives.

- Strengthen academic and strategic linkages including joint research and exchanges; and
- Strengthen private sector collaboration and opportunities, and address challenges to this sector through practical support.

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In the southern Africa sub-region, the extent of impact of Post-Harvest Losses (PHLs) is often downplayed with drought and other natural disasters being cited as major contributors to food insecurity in the region yet as much as 40 percent of farm produce particularly harvested crops from smallholder farmers are lost along the agricultural value chain. For example, studies show that Malawi spends an estimated US$275 million annually to import food (Mutungi and Affognon 2013), while PHLs in Zimbabwe are estimated at 20 to 30 percent in storage alone. The quantity even goes as high as 40 percent when losses during transportation, handling and processing are included. This would be much the case with the majority of countries in southern Africa with the exception of South Africa which has relatively better developed mechanisms and infrastructure for transportation and storage. For many of the countries in the region, addressing the PHL challenge alone would be enough or even exceed the annual value of grain imports into the region while even removing the need for food aid from outside the continent.

As such, governments have realised that increasing food production in isolation, without addressing post-harvest losses, is inadequate in addressing food insecurity, hence a renewed interest to reduce post-harvest losses. Further, FAO (2018) notes that the reduction in food losses could have immediate positive returns on livelihoods as investment in reduction of food losses helps to increase access to food, reduces food prices for consumers and improves economic returns to farmers and other value chain actors.

With much time being spent on devising strategies with little action on the ground, the PHLs challenge has increased pressure on food security with rapidly expanding population, poor infrastructure to move crops to the market and price volatility while the COVID 19 dimension has brought with it more complex challenges. This paper looks at the recommended postharvest intervention strategies and how these have been affected by the prevailing context of COVID 19, and how communities and governments now need to rethink management strategies going forward. Ignoring this important area is not an option for governments given the opportunity cost involved when more expensive food has to be imported to meet demand in a region that faces perennial food shortages.

FOOD SECURITY SITUATION IN THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC)

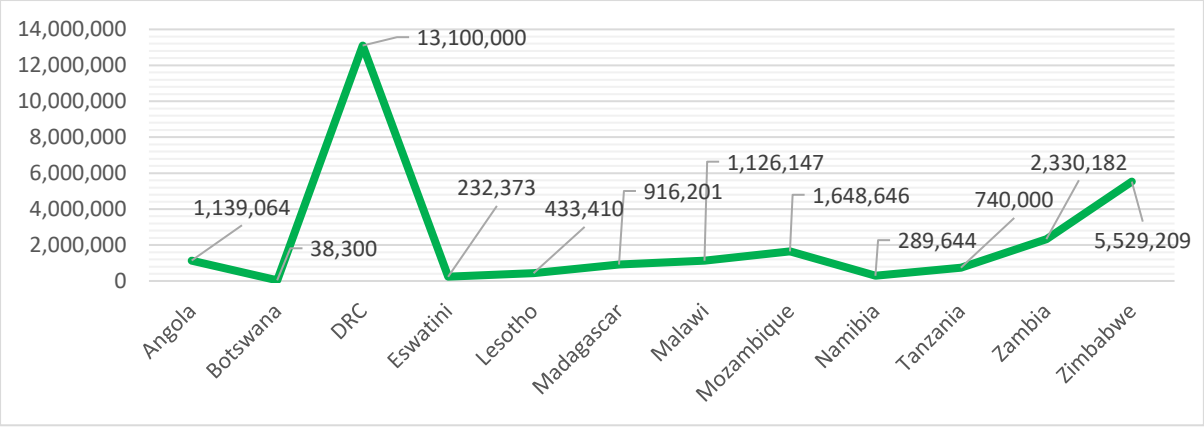
One of the major causes of food insecurity in southern Africa is climate change which manifests itself mainly in the form of floods, droughts and tropical cyclones. Climate projections by the Intergovernmental Panel on Climate Change (IPCC) already indicate a decrease in annual precipitation by as much as 20 percent by 2080 in most parts of the region while the duration of the rainy season will shorten. This is despite the fact that about 70 percent of the population in the SADC region depends on rain-fed agriculture for crop production, thus intensifying risks to food security for most vulnerable populations (SARDC 2020).

Available data from thirteen Southern African Development Community (SADC) Member States show that about 51.3 million people will not be able to access the food they need for an active and healthy life over the period January to March 2021 (SADC 2020). In addition,

the 2020 *Synthesis Report on the State of Food and Nutrition Security and Vulnerability in Southern Africa* indicates that about 44.8 million people across 13 SADC member states were left food insecure due to a poor harvest attributed to low rainfall experienced in the 2019/20 agriculture season. In the previous year, 2018/19 rainfall season, the region recorded a decline in cereal production again attributable to insufficient rainfall, leaving an estimated 41.2 million people in thirteen SADC Member States food-insecure.

Indeed, tropical cyclones on the other hand threaten to undermine efforts to address the food insecurity situation in the region. For instance, though the 2021 national cereal production for Mozambique is expected to remain near average, there are concerns of drought in the northern part of the country while the central and southern provinces were affected by Tropical Cyclone Guambe in the beginning of February. In January, large areas of cropland were flooded by Tropical Cyclone Eloise in Mozambique, which also affected parts of Eswatini, Madagascar, South Africa and Zimbabwe (SARDC 2021). In late December 2020, Tropical Storm Chalane had caused some flooding in Mozambique. According to FAO reports, initial assessments indicate that Tropical Cyclone Eloise affected over 100,000 hectares of cropped land in Mozambique though the extent of damage to crops is yet to be known (SARDC 2021). In March 2019, the SADC Region launched an international appeal to support victims to cope with the impact of Tropical Cyclone Idai that affected parts of Malawi, Mozambique and Zimbabwe. An estimated three million people in the three SADC member states were affected by Cyclone Idai, which has been recorded as one of the worst tropical storms to ever affect Africa and the southern hemisphere (SARDC 2019). As such, the number of food insecure population keeps increasing as shown in the Figure 1 below.

Figure 1: Number of people food insecure in the SADC region 2019/20



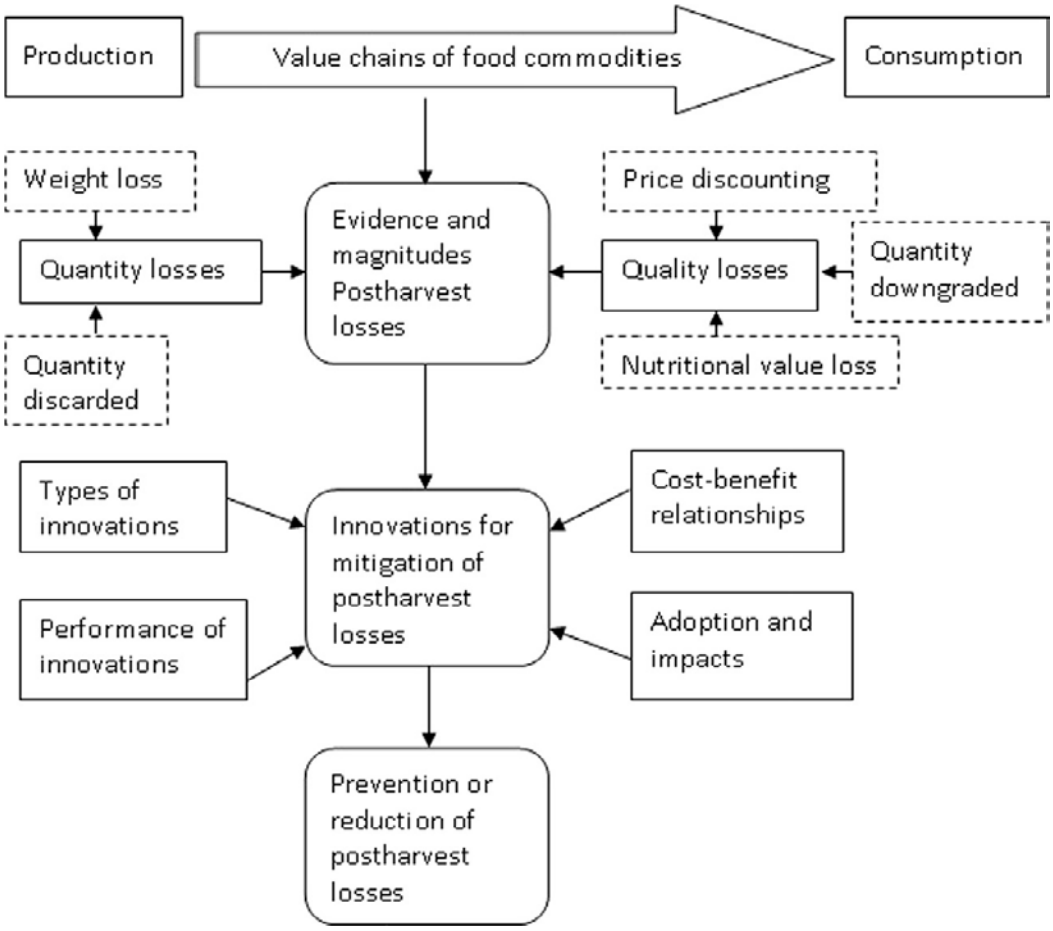
Source: SADC 2020a

POST HARVEST LOSSES: CAUSES, CHALLENGES AND MANAGEMENT INTERVENTIONS

Coupled with climate change, the food insecurity situation has been compounded by increasing percentages of post-harvest losses as well as disturbances in the agricultural supply chain caused by the COVID 19 pandemic. Post-harvest losses occur both in quantitative terms, affecting food availability and nutrition security, and in qualitative

terms, affecting the food use and utilisation as well as food availability. In developing countries, post-harvest losses normally occur at the level of the farmer whereas in developed countries losses are known to occur more at the level of the consumer. The conceptual framework shown in Figure 2 illustrates that while post-harvest losses occur along the agricultural value chain, success in mitigating post-harvest losses also depends on a number of factors. Some of the factors include the types of and performance of innovations available to farmers, cost of the technologies and the rate of adoption or uptake of such technologies by the intended beneficiaries.

Figure 2: Conceptual framework on how post-harvest losses accrue and the dynamics of mitigation



Source: Adapted from Affognon et al 2014.

Apart from reducing the total amount and quality of food available, post-harvest losses worsen the fragility of rural economies by eroding income generation along the food chain and therefore affect the accessibility as well as sustainability of food and nutrition security (African Union Commission 2018).

The SADC region faces a number of challenges with regard to the provision of local, national and regional strategies designed towards reducing post-harvest losses. Some of the key challenges identified in addressing post-harvest losses as illustrated in Table 1 include the

lack of policy direction and focus on post-harvest loss management; poor involvement of the private sector; and lack of or limited market infrastructure such as roads, transport and storage. A sense of urgency must now permeate the region, to expedite the implementation of strategies required to bridge the identified gaps and eliminate barriers hindering the region's full potential particularly in the critical area of food security (SADC, SARDC 2019).

Table 1: Summary of Strategic Factors that Pose Challenges in Post-Harvest Losses in Member States

Strategic Factors	Key Challenges
Policy	- Lack of policy direction and focus on post-harvest loss management - Lack of standardised structures in national PHL Management Strategies
Awareness	- Lack of awareness at all levels and lack of high level focus on PHLs
Institutional	- Lack of coordination among country actors and institutions dealing with PHLs - Poor involvement of private sector and other disciplines in coordinated action on PHLs - Lack of institutional capacity development on post-harvest loss management - Poor enforcement on existing PHLs regulations and guidelines (e.g. in marketing systems and storage structures)
Knowledge Management and Data	- Fragmented and uncoordinated efforts at research and development on PHLs - Lack of PHLs best practices and knowledge platforms, universities, research institutions, training centres - Lack of PHLs data, lack of harmonised data and poor reporting - Poor agricultural market information systems
Skills and Human Development	- Lack of PHLs training at all levels of the education systems - Poor extension services which also lacks PHLs management training
Technology, Agri-business and Agro-Processing	- Lack of appropriate (e.g. labour saving) and access to PHLs reducing technologies - High cost of PHLs reducing technologies - Lack of regulations on standards and efficiency ratings for PHL reducing technologies - Poorly developed agri-business and agro-processing due to lack of incentives for private sector involved in PHL - management particularly in agri-businesses and agro-processing
Markets and market Infrastructure	- Lack of formal coordinated marketing structures - Lack of trade / marketing regulations - Lack of grades and standards (price for quality) both for commodities and for storage structures - Lack of or limited market infrastructure such as roads, transport, storage
Financing and Investment	- High cost of and poor access to financing for PHLs technologies - Lack of funding for PHLs activities - Poor involvement of the private sector in PHLs initiatives including policy formulation
Cross Cutting	- Poor capacity to adapt and mitigate the effects of climate change on PHLs - Poor engagement and training of women and youth in PHL management - Poor regulations on use and disposal of pesticides and other storage chemicals

Source: African Union Commission 2018

RESPONSES TO ADDRESSING POST-HARVEST LOSSES

Several interventions have been put in place to address the food insecurity situation at national, regional, continental and indeed global levels.

At the global level, efforts to address post-harvest losses are guided by the United Nations Sustainable Development Goal (UNSDG) *Goal 12.3: Halve global per capita food waste*, 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.

At the continental level, Commitment 3 of the Malabo Declaration (Ending Hunger in Africa by 2025) calls for African Union (AU) Member States to cut 2014 levels of post-harvest losses by half until 2025 (African Union Commission 2014). In addition, the AU PHL Management Strategy of 2018 presents an integrated approach to dealing with post-harvest losses by bringing together all possible forms of approaches across the entire agricultural value chain that together contribute to reduced levels of losses occurring during and post harvesting of grains and other crops.

In April 2020, the African Ministers for Agriculture signed a *Declaration on Food Security and Nutrition during the Covid-19 Pandemic* where they urged governments to prioritize the food and agriculture system as an essential service that must continue to operate during periods of lockdown, emergency, curfew and other health containment measures. The African Ministers further committed themselves to ensure that farmers have timely access to quality equipment and crop inputs and to put in place measures that will reduce food post-harvest losses (African Union Commission 2020).

At the regional level, southern Africa is making efforts towards reducing food insecurity particularly post-harvest losses even during the COVID 19 lockdown phases. In May 2020, the Ministers responsible for agriculture, food security, fisheries and aquaculture met to review the guidelines developed by the SADC Secretariat in response to the COVID 19 pandemic (SADC 2020b).

The guidelines provide SADC Member States with measures to avoid disruption to food supply chains and associated livelihoods resulting from the impact of COVID 19. The move by SADC to set up guidelines on food security is supported by the UN FAO which has proposed strategies to reduce food loss and manage harvest gluts in traditional local supply chains.

The strategies include supporting labour migration toward ensuring the uninterrupted harvesting of crops. Another strategy is to promote appropriate measures that increase shelf-life and improve packaging and storage to reduce food loss. Other measures include exempting transporters of bulk food and certain food distribution networks from curfew hours to facilitate the transport of perishable foods during the cooler times of the day and at night to maintain quality and reduce food loss (SARDC 2020).

With all these measures in place, the main impediment during COVID 19 revolves around the limitation of the smallholder farmer to access labour, transport and in some cases markets having been shut down. Where markets were open, the consumers faced real and practical challenges accessing them during lockdowns, thus limitation the market opportunities for the farmers, in many cases resulting in dire PHLs. Further, there has hardly been any recovery packages funded by government similar to the ones extended to those in manufacturing and other sectors such as tourism.

CONCLUSION

Postharvest losses among smallholder farmers in the Southern African region remains an area of major concern with losses as high as 40 percent of harvested crops. While measures have been identified at the national, regional and continental levels, the extent of implementation remains limited due to a number of reasons ranging from lack of political will, infrastructure deficiencies and low uptake of available technologies to mitigate the impact of post-harvest losses. This has increased pressure on food security with rapidly expanding population. It is widely acknowledged that increasing food production in isolation, without addressing post-harvest losses is inadequate in addressing food insecurity, thus a renewed global interest to reduce post-harvest losses in order to meet the sustainable development goals, in particular SDG 12 on sustainable consumption and production patterns.

While efforts by SADC Member States to declare agriculture and the food sector as an essential service exempt from lockdown measures was a commendable policy response, movement restrictions on the general populace heavily weighed against smallholder farmers who rely on casual labour and in most cases public transport for the movement of farm produce along the agricultural value chain. This state of affairs no doubt exacerbated post-harvest losses suffered by this group of farmers and the overall impact during the period of the pandemic is yet to be fully quantified.

Climate change has been cited as a major cause of food shortages in Southern Africa ahead of PHLs yet the later remains the single most contributor to food insecurity in the region. With sufficient political will, post-harvest losses can save the region a significant bill in food imports while in some cases even addressing the need for food aid into the region and the continent in general. The need therefore for SADC to prioritise post-harvest management interventions cannot be overemphasised if resources are to be rechanelled towards other development needs necessary for uplifting the standards of living of the general populace of the sub region.

It becomes even more critical if more money is to be put into the hands of the farmer given the reality that post-harvest losses in developing countries generally take place at the level of the farmer as opposed to the consumer level as happens elsewhere. More resources should thus be channelled towards promoting technologies that reduce post-harvest losses at farmer level. There is therefore scope for drawing lessons from other regions that have successfully mitigated this challenge, in particular China, which was the first to suffer from

COVID 19 and was able to term the pandemic and its attendant impacts in the shortest possible time.

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