

## Key challenges for Kenya in big push to reduce post-harvest losses

The Kenyan government last December announced its "[big four](#)" development strategy to be implemented over the next five years. Food security is one of the key strategies. The others are affordable housing, manufacturing and universal health care.

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In the realm of food security, the [reduction of post-harvest losses](#) has been identified as a way to boost production. This is in addition to expanding the area used by commercial agriculture for staple crops, expanding irrigated agriculture and increasing the use of yield-enhancing inputs.

Kenya [estimates that 20%](#) of cereals are lost even before reaching the market. That's a high figure, particularly since it doesn't include food waste. Food waste refers to good quality food that is fit for human consumption but that does not get consumed because it's discarded, either before or after it spoils.

Food loss refers to quantity and quality, in which the economic value of produce is degraded. Such food may even become unsuitable for human consumption.

In sub-Saharan Africa, as much as 50% of fruits and vegetables, 40% of roots and tubers and 20% of cereals, legumes and pulses are [lost before they even hit the market](#). In recent years problems with food safety have also contributed to post-harvest losses.

Poor food handling, including poor storage and sanitation, may also result in food losses. Food safety standards and practices have been put in place in Kenya but not all are feasible for adoption by small farmers and traders. More must be done to help people who fall into these groups if the country is serious about tackling food loss.

### Kenya food losses

A [food situation assessment](#) carried out in 2017 showed maize losses could be quite substantial. The

country produced 37 million bags in 2017 of which 12% is estimated to have been lost post-harvest.

These losses translate to about 4.5 million bags. This is greater than the entire 2017 harvest for the annual short rain season, usually between October and January. It is also equivalent to about one-and-a-half month's consumption for the entire country. For other cereal grains, the losses made post-harvest are similar.

To place these losses in context, data from the [Ministry of Agriculture](#) shows that Kenya imported eight million bags of maize between May and December 2017. The total [cost of importation and rebate to miller](#) was \$67m. This year, the country has already [imported about 850,000 bags](#) of maize from Uganda in the first two months at a cost of \$31m to cover for production shortfall.

## Different geographies

Many of the interventions in post-harvest storage and management in Kenya have focused on on-farm storage. A number of technologies that improve grain storage at the household are available to producers. These include hermetic bags, heavy moulded-plastic containers, and metal silos.

Hermetic bags are airtight bags that prevent air or water from getting into the cereals stored in them. First developed by Purdue University, they preserve the contents while restricting the existence of cereal pests by depleting oxygen supply levels and producing carbon dioxide. These bags are considered practical and cost-effective at approximately \$2-3 in Kenya.

A metal silo is a cylindrical structure, constructed from a galvanised iron sheet and hermetically sealed, killing any insect pests that may be present. Plastic containers apply the same principle and cost less.

These technologies are aimed at [increasing the length of storage](#). They also protect grain from rodents, grain borers, weevils, moths and other pests and minimise the use of pesticides.

But their adoption remains low for [several reasons](#): constraints in accessing income and credit access, physical access, education and knowledge barriers.

Several other approaches should be considered to effectively address post-harvest losses. These include both on-farm and off-farm storage and handling. For instance, farmers were able to increase their yields by up to 30% by mechanising the harvesting process in Kenya's main [rice producing area of Mwea](#). This reduced the losses that occurred from manual harvesting and packing of grain for storage.

However, two key hurdles will have to be overcome to effectively address the challenges. First, the methodologies to measure losses for different crops, across different geographies and value chains have to be improved. Second, investment in collecting reliable data on how much is lost for different commodities is required.

## Betting on private sector

The Kenyan government is betting on the private sector to reduce post-harvest losses. This alone will not be effective since the private sector may not be able to adequately fill the knowledge gap when it comes to understanding the use and importance of these technologies among farmers. In addition, farmers with scarce resources may be excluded from using the technologies developed and distributed through the private sector.

Several big funders, such as the Bill and Melinda Gates Foundation and Rockefeller, have already invested heavily in developing low-cost technologies through the private sector. These investments led to the development of PIC bags and metal silos. Further work is still going on to [develop post-harvest storages](#) such as cocoons and improved traditional granaries at lower costs so that farmers can afford them. But more must be done so farmers know about such technologies and adopt them.

The government should also invest in generating data to inform private sector investments. Private sector investors require data on gaps, such as areas with the highest losses, causes of these losses, farm and farmer characteristics to develop appropriate solutions. Generating this data may be out of reach for private sector investors. Additionally, private companies are unlikely to share such information with competitors if they made the investment.

The partnership with the private sector is a great step in reducing post-harvest losses. Additionally, helping farmers overcome barriers to post-harvest management will be a big boost in the reduction of these losses and improve food availability. However, these interventions should begin before rather than after the harvest.

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