AlfaSTOP supports implementation of PACA objectives
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I. Executive Summary

The storage surveys in North Rift and Eastern provinces are the result of collaboration between the AflaSTOP project and the International Food Policy Research Institute (IFPRI). In spring 2012 IFPRI and the University of Nairobi conducted the storage survey among 50 farmers in Eastern province, a low maize-productive area with a range of subsistence farmers (Makueni) to highly diverse smallholders (Meru) Later in November 2012, ASI, in partnership with Pan African Research Services Ltd. (PARS), conducted the second storage survey among 50 farmers in Rift Valley Province (North Rift), a highly productive maize area dominated by commercially orientated smallholder farmers. IFPRI then completed analysis of the data from North Rift in early 2013.

This document combines the analysis of both surveys to enable easier comparison between the practices and attitudes of farmers in Eastern and North Rift provinces. Key findings related to storage in this report include the following:

- Farmers own various types of storage structures—there are still some traditional storage structures in place, but mainly farmers are using cribs, crib-like stores, stores, and/or a dedicated room in the house. A few farmers share their living room with their stored grain.

- 90% of farmers in North Rift, 59% in Meru, and 75% in Makueni have a dedicated storage structure capable of holding 60–100, 50–80, and 20–40 90kg bags, respectively. Within these storage types, 32% of North Rift, 43% Meru, and 56% of Makueni farmers use a dedicated room in their house when their storage capacity is not sufficient.

- In terms of storage structures, there were similarities in North Rift and Meru where 61% and 76% of farmers, respectively, had a solid store compared with only 20% of farmers in Makueni. However, in Makueni, 67% of farmers had a crib-like structure compared to only 12% in North Rift and none in Meru. Farmers using a room in a house ranged from 7% in Makueni, 18% in Meru, and 22% in North Rift.

- A solid store structure was the most common structure in all regions (52–78% across farm size\(^1\)), followed by a crib-like structure (22–70% across farm size), and lastly a dedicated room in the house (10–26% across farm size).

- The traditional crib structure with wire mesh sides that allows good airflow has been adapted, by most farmers, to replace the wire mesh with slightly spaced sticks or planks of wood. This modification reduces the efficiency of the air flow but significantly lowers the cost of construction.

- In all regions, farmers store cobs for a median of 4 weeks compared to grains, which are stored a median of 24 weeks by North Rift farmers versus 20 weeks in Meru and 12 weeks in Makueni.

\(^1\) For the purposes of analysis, farms were divided into three size categories: small (0.5–3 acres), medium (3.59–9 acres), and large (>10 acres).
96% of farmers in North Rift dry their maize after shelling compared to 70% of Meru farmers and 65% of Makueni farmers.

North Rift farmers check their stores weekly compared to farmers in Meru and Makueni who check three and five times, respectively, during the storage period. However, farmers take grain from the stores to eat on a regular basis, which is often when they also discover pest problems.

All farmers prepared their store prior to the season, cleaning out debris and putting down pesticide. 86% of North Rift farmers treated their maize with a chemical dust insecticide and 68% of those farmers experienced infestation. The dominate pest was the maize weevil (50%) and large grain borer (18%). 96% of farmers in Meru and 90% of Makueni farmers treated their maize with a dust, and an equal number of farmers suffered infestation. In Meru, however, 50% of farmers had a problem with the large grain borer and 36% with the weevil, whereas in Makueni 65% had a problem with weevil and 40% with the large grain borer. Of the farmers who treated their maize, 92% in North Rift, 87% in Meru, and 100% in Makueni treated their maize while in storage again before a problem was identified as a preventative measure.

By far the most common pest were rats (82% in North Rift, 76% in Meru, and 50% in Makueni), and yet almost no farmer took measures to prevent rats entering their stores—there was a significant lack of rat guards on store posts, doors with gaps where rats could enter, gaps between planks due to poor construction (rather than airflow), and piles of debris where rats could hide beside and under stores.

Within the first month of storing their grain, 54% of farmers in North Rift, 50% in Meru, and 20% in Makueni had some mold problems. Given the infrequency that Meru and Makueni farmers check their maize, this could be higher—about 10% more over the storage period. Most farmers fed this maize to their livestock.

Almost all farmers in North Rift (94%) thought they had enough storage space compared with 73% in Meru and 60% in Makueni. In bumper harvests, 26% of North Rift farmers, 11% of Meru farmers, and 35% of Makueni farmers had enough space, and those who did not generally used a room in their house for the extra or sold the excess.

Farmers in North Rift saved their maize for 18 months, whereas farmers in Eastern saved just over a year to build their stores—the time difference perhaps reflecting the different-sized structures. Many farmers simply built a store in a single season, possibly from the proceeds of selling the grain. Farmers prioritize improved storage for maize over other crops and primarily are looking for structures that will address their pest problems.

Farmers in Eastern appear to be more ready to try new structures than North Rift. The number of bag farmers want structures to hold ranges from 150 in North, 100 in Meru, and 30 in Makueni, and all farmers generally want to prevent outsiders from seeing the volume of grain stored.
While farmers said they did not have cash to invest in storage, 42% of North Rift farmers, 66% of Meru farmers, and 50% of Makueni farmers would take a loan with interest rates at 20% per annum.

Radio is the easiest way to reach farmers with messages.

Middle-age farmers in North Rift were found to be more hopeful and more likely to take up new technology that saves them time than older and younger farmers (questions not asked in Eastern).