

# Smallholder grain postharvest management in a variable climate: practices and perceptions of smallholder farmers and their service-providers in semi-arid areas

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## Abstract

Field data on current crop postharvest management practices and perceptions from smallholder farming communities in an increasingly variable climate are scarce. Our study used a multi-dimensional approach to explore the practices and perceptions of these communities and their service-providers regarding grain postharvest management in semi-arid Mbire and Hwedza districts in Zimbabwe. A total of 601 individual household interviews, six focus group discussions with women and men, and interviews with 40 district stakeholders and 53 community key informants were conducted. Farmers and service-providers explained how climate change was threatening food security; causing reduced and more variable maize and sorghum yields of below 0.5 t/ha, alongside higher grain storage insect pest pressure. Increased food insecurity and concerns regarding grain theft have driven a shift from bulk storage in traditional outdoor free-standing granaries to polypropylene bags stacked inside the living quarters. Poor and improper use of synthetic pesticides in these circumstances exacerbates the health-related risks. Agricultural extension officers were the most common source of agronomic and postharvest information followed by farmer-to-farmer information exchange. Targeted postharvest training; participatory field trials involving agricultural extension staff, farmers and other service-providers; and policy dialogue around grain postharvest management and food security are proposed to help in strengthening the capacity to reduce grain postharvest losses under increasingly unpredictable conditions.