

The two tables below show the positive and negative features of a variety of grain stores. These are the contributions of the grain store survey respondents (X) and the study authors (X).

Table 3a: Positive features of the different store types

STORE TYPE ▽	Polypropylene bag	Jute sack	ZeroFly® storage bag	PICS triple bag	Bio-Plastics triple bag	Agrobags®	GrainPro SuperGarin bag®	GrainPro GrainSafe II®	GrainPro cocoon®	Metal silos	Metal tanks	Metal drums	Concrete silos	Mud silos	Plastic silos/drums	Improved brick granary	Improved kihenge	Improved farmer granary	Gorongosa mud granary
▽ Positive features of store (as mentioned by respondents)																			
<i>Too early to comment</i>			X		X	X	X												
Low initial investment	X		X	X	X	X	X				X	X		X	X		X	X	X
Durable (lifespan of >7 years)								X	X	X	X	X	X	X	X	X	X	X	X
Insect control without chemical pesticides*				X	X	X	X	X	X	X		X			X				
Easy to use	X	X		X	X	X	X				X				X				
Robust and resistant to fire										X	X	X		X					X
Rodent proof										X	X	X		X					
Choice of different capacity sizes								X	X	X	X		X	X	X	X	X	X	X
Convenient and portable in case it suddenly needs to be moved for sale or due to flood	X	X	X	X	X	X	X												
Easily adaptable to the quantity of grain to be stored, and location	X	X	X	X	X	X	X												
Easy to keep in house & protect from theft	X	X	X	X	X	X	X			X		X			X		X		
Easy to fumigate grain inside it								X	X	X	X								
User-friendly for women	X	X		X	X	X	X			X					X				X
Can be locally made in a rural area										X				X		X	X	X	X
Relatively difficult to remove grain thus easy to control consumption & 'unwanted removals'												X		X	X				
Often given out for free										X									
Occupies a small space										X									
Easily hidden during food shortages	X	X	X	X	X	X	X												
Powerful killing action of any insects that touch the walls of the bag			X																
Multi-purpose packaging (transportation, handling and storage)	X	X	X	X	X	X	X												
Easy to monitor for insect damage	X	X	X	X	X	X	X												
Easy to calculate amount of grain in stock	X	X	X	X	X	X	X												
Standard measurement for uniform packing, stacking, sampling, commodity accounting etc.	X	X	X	X	X	X	X												
Formal market trading unit (when filled)	X	X																	
Easily available locally, even at village level	X																		
Wide adoption, good supply chain efficiency	X																		
UV resistant PP bags do not become brittle	X																		
Anti-slip weaving helps in stacking	X	X	X	X	X	X	X												
Bag does not break during quality sampling	X	X	X																
No harvest of natural resources each year	X	X	X	X	X	X	X			X		X			X				
Status symbol for farmers				X	X	X	X			X									

Key: X= respondents suggestions on specific store types, X = authors' overview of other store types affected by same issue
 *= Viewed as positive as i) farmers prefer not to use pesticides on their food; ii) eliminates health risks and other MRL issues such as import rejection; iii) less need to wash grain pre milling; iv) no additional cost of purchasing insecticide

Table 3b: Weaknesses of the different store types

Weaknesses of this store ▽	Polypropylene bag	Jute sack	ZeroFly® storage bag	PICS bag triple bags	Bio-Plastics triple bag	Agrobags®	GrainPro SuperGarin bag®	GrainPro Grain safe II®	GrainPro Grain cocoon®	Metal silos	Metal tanks	Metal drums	Concrete silos	Mud silos	Plastic drums/silos	Improved brick granary	Improved kihenge	Improved farmer granary	Gorongosa mud granary
<i>Too early to comment</i>			X			X													
Susceptible to rodents and rough handling	X	X	X	X	X	X	X		X						X				
Prone to termite damage		X												X					
Prone to insect attack	X	X																	
May not withstand typical handling methods*				X	X	X	X												
Capacity/ size is often limiting												X			X				
Distribution network needs strengthening			X	X	X	X	X			X						X			
Care required each time during closing			X	X	X	X	X	X	X	X		X			X				
Must be kept closed for a period to generate hermetic effect, before grain can be removed				X	X	X	X	X	X	X	X	X			X				
Must be full so that volume of oxygen is low, so drum size must match quantity to be stored										X	X	X			X				
Grain being stored must be below 14% mc	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knowledge intensive technology			X	X	X	X	X	X	X	X	X	X			X				
Environmental concern -short lifespan/ plastic				X		X	X												
Labour intensive									X										
Zipper is weakest point and needs regular checking to prevent entry of oxygen									X										
Hard to set-up, instructions are poorly written								X											
Only protects clean non-infested grain			X																X
Insect infestations in the grain bulk continue to develop during storage if no pesticide added	X	X	X										X	X		X	X	X	X
Stored grain requires regular monitoring	X	X								X	X	X	X	X	X	X	X	X	X
Requires a pallet to keep them off the ground	X	X	X	X	X	X	X			X	X	X							
Needs thorough cleaning out if acquired as second hand fuel container												X							
Handle with care during transport/ needs roof										X			X	X					
Difficult to install in houses with small doors										X									
Not hermetic, some farmers fumigate it indoors										X									
Often hard to seal in/outlets to make hermetic										X	X								
Quality control challenges for handmade silos										X	X								
Loading &/or off-loading grain can be difficult										X		X				X			
Stored grain may be affected by ambient moisture	X	X											X	X			X	X	
Not easily movable to a new place													X	X		X	X	X	X

Key: X= respondents suggestions on specific store types, X = authors' overview of other store types affected by same issue, ?= No evidence yet. *= Typical handling, e.g. being thrown when full on ground during unloading or piled high on trucks.

