



# MECHANISED SHELLING



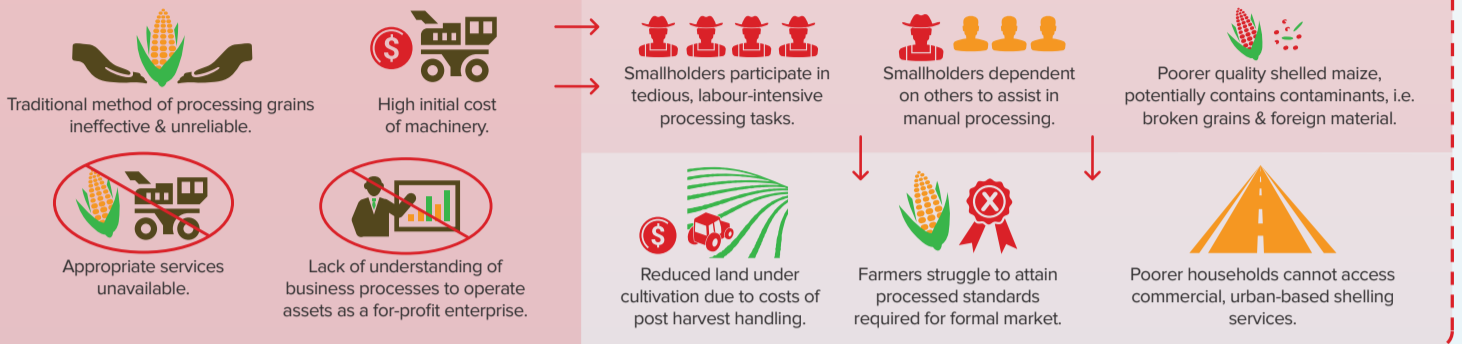
The Zimbabwe Livelihoods and Food Security Programme (LFSP) is improving the food security, nutrition and productivity of smallholder farmers and rural communities in Zimbabwe by co-designing and testing a range of inclusive business models with farmers, agribusinesses and other market actors.

## THE MODEL

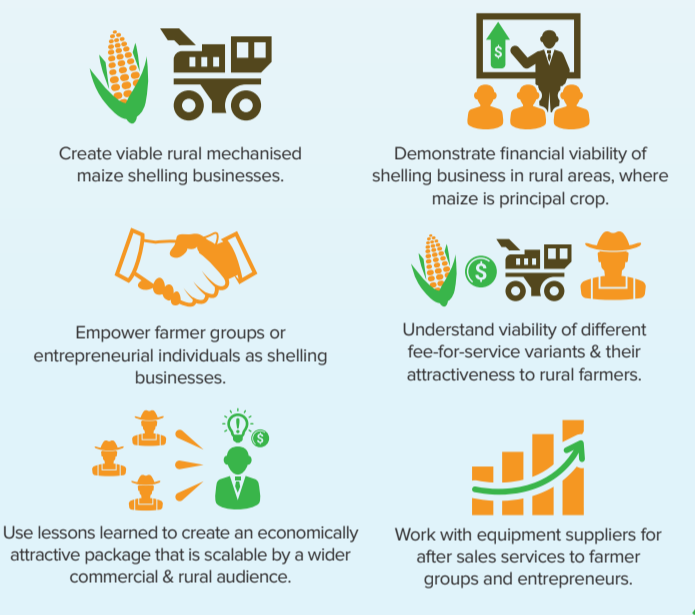
**OBJECTIVES:** • Promote access to, uptake & utilisation of, post-harvest handling/processing equipment. • Generate time & labour savings. • Improve efficiency. • Increase the quality & quantity of output.

Post-harvest mechanical processing of grains is an important component of improving output & profitability for smallholder farmers.

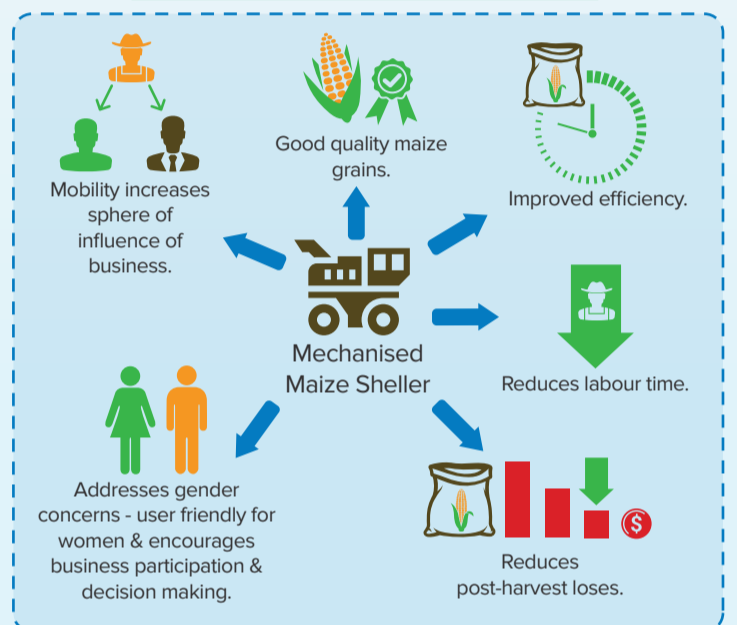
### CHALLENGES



### SOLUTIONS



### ADVANTAGES OF MECHANISED SHELLING



## LFSP SUPPORT & OPERATORS

Support was provided to a range of market actors, including two farmer groups (A & B), a commercial company (C) & an individual entrepreneur (D). The farmer groups were predominantly made up of women & many either had no husband or their partner was working elsewhere.

SUPPORT	MACHINE A	MACHINE B
Supported in 2017	5 entrepreneurs and 5 groups	xxxxx
Supported in of 2018	xxxxxxx	10 entrepreneurs & 17 groups
Efficiency fuel/MT (L)	1L/6MT	1L/5MT
Technological specifications	Does not have a blower. Requires winnowing before packing. Machine is mounted. Sieve is fixed. Similar engine to machine B. Different loading tray to machine B.	Has a blower so no extra winnowing is required. Grain is clean & ready for packing. Machine is not mounted & needs to be supported. Has sieve that is loose & easy to replace. Similar engine to machine A. Different loading tray to machine A.
Mobility	Easier to move from place to place. Motor positioned in front.	Not easy to move due to design. Motor positioned at the back.

### RESULTS

PARAMETERS	FARMER GROUP A	FARMER GROUP B	COMMERCIAL COMPANY C	INDIVIDUAL ENTREPRENEUR D
Organisation type	Farmer Group	Farmer Group	Individual entrepreneur	Individual entrepreneur
Maize shelled (MT)	247	207	154	40
Usual method of payment	Shelled Maize	Shelled Maize	Cash	Cash
Profit (\$ charges less fuel & transport per season)	4,725	3,957	1,386	590

Figures correct as of the end of December 2017

### SCALING POTENTIAL

Evidence from the four cases, suggest that mechanised maize shelling services are scalable when the following parameters are satisfied:

- Thorough awareness initiatives are undertaken before the post-harvest period and adequate training on machinery maintenance and repair is given by the equipment supplier.
- Maize shelling coupled with sorghum or millet increases utility of equipment.
- Mobile machines are placed in areas with maize as a principal crop, & ideally also where awareness of mechanised processing is embedded.
- Where customers are offered a variety of payment options, including – critically – payment-in-kind.
- In the absence of donor subsidy, access to appropriate & affordable loans for machinery purchase is available.



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