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# Price Stabilization and Strategic Grain Reserves: The Case of Malawi

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## African Agricultural Markets Program (AAMP)

### “Risk Management in African Agriculture: Taking Stock of What Has and Hasn’t Worked”

Lilongwe, Malawi.

## Price Stabilization vs SGR/Emergency Stocks

### 1. Price stabilization involves:

- *Producer price support*---for producers when marketing their surplus food production and/or
- *Consumer support*----providing supplies of staple foods at a price which *low-income consumers* can afford to pay

### 2. Emergency stocks:

- *Food stocks readily available for immediate relief of vulnerable groups* --food shortages following disasters, etc

## Presentation Outline and Objective

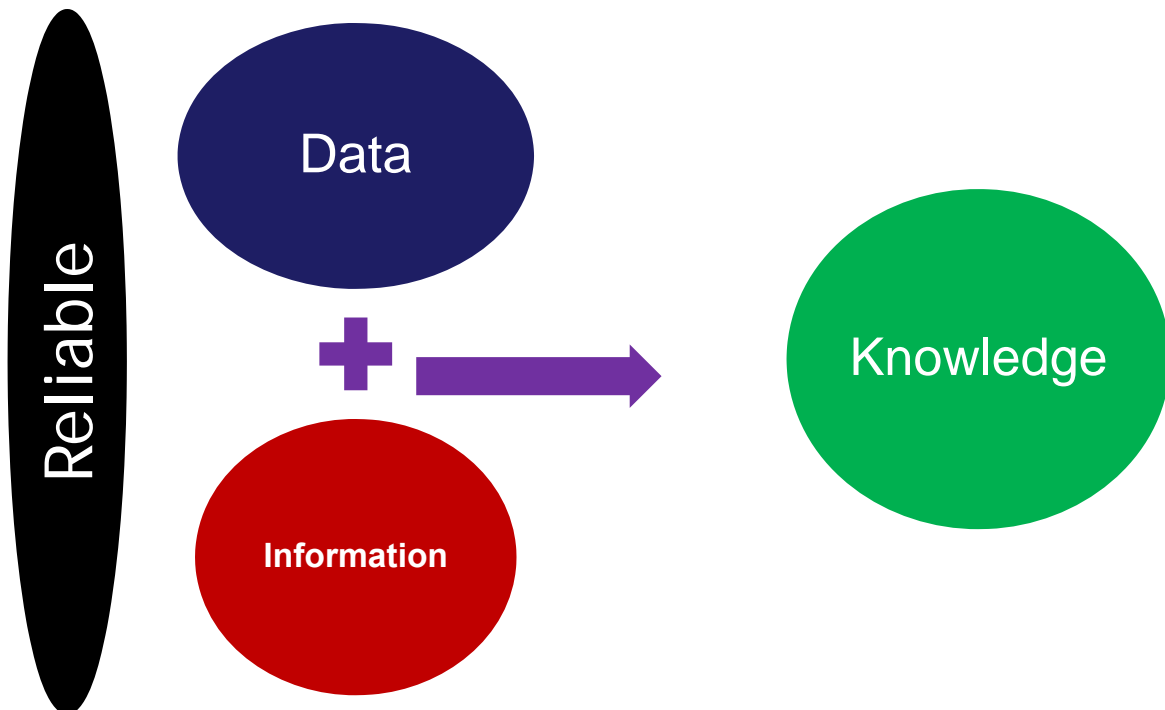
- Historical interventions in the marketing of agricultural crops & Evolution of SGR
- SGR institutional arrangement & operational performance
- SGR Rotation, Pricing Policy, & Grain Markets
- Linkages with Food security programs
- Conclusions & policy issues

### Objective

Examine the effects of attempts to stabilize commodity prices using buffer stocks.

We use the case of Malawi

## Data and Information



## Malawi-Background & Agriculture

- Agriculture contributes 35% of GDP & 90% of total foreign exchange earnings
- Agricultural sector has two main sub-sectors:
  - the smallholder
  - the estate
- The smallholder sector contributes about 70% of agricultural production.
- Smallholder agricultural sector is very important: hence, marketing of smallholder produce has been of interest to govts.

## Historical interventions in the marketing of agricultural crops & Evolution of SGR ..... 1/3

- **1926** : National Tobacco Board(NTB)
  - 1938 NTB buys tobacco from farmers & selling it at Auction
  - 1948 Price stabilization fund established
  - 1950 NTB starts selling subsidized farm inputs (esp. ferts.)
  - 1952 NTB--African Tobacco Board (ATB).
- **1949** : Maize Control Board (MCB) & Cotton Control Board (CCB)
  - To provide marketing services to maize and cotton producers
- **1956**: ATB+MCB+CCB=Agricultural Production and Marketing Board (APMB)
  - To provide stable and efficient marketing system (main cash crops).POLICY: Pay growers a price that provided a 'reasonable return'.
- **1957**: POLICY change-govt implements minimum uniform pre-planting prices.

## Historical interventions in the marketing of agricultural crops & Evolution of SGR .....2/3

- **1962:** Agricultural Production and Marketing Board (APMB) replaced by Farmer Marketing Board (FMB).....
  - Responsible for marketing, processing, and disposing of agricultural products;
  - price stability ---to protect farmers from world price fluctuations
  - increase agricultural output
  - provide storage facilities for food reserves on behalf of the government, and
  - subsidize inputs to increase yields
- **1971:** FMB = ADMARC

For details see: Chilowa, W, 1998. Food Policy Vol. 23, Issue 6.

## Historical interventions in the marketing of agricultural crops & Evolution of SGR .....3/3

- 1981: Govt. asks ADMARC to establish SGR
- SGR established with 180,000 Mt--equivalent to 3 months of national consumption?? (incl. refugees)

**ADMARC had:**

- Comparative advantage of having large number of warehouses distributed across all regions of the country
- Larger share of maize market

**1999:**

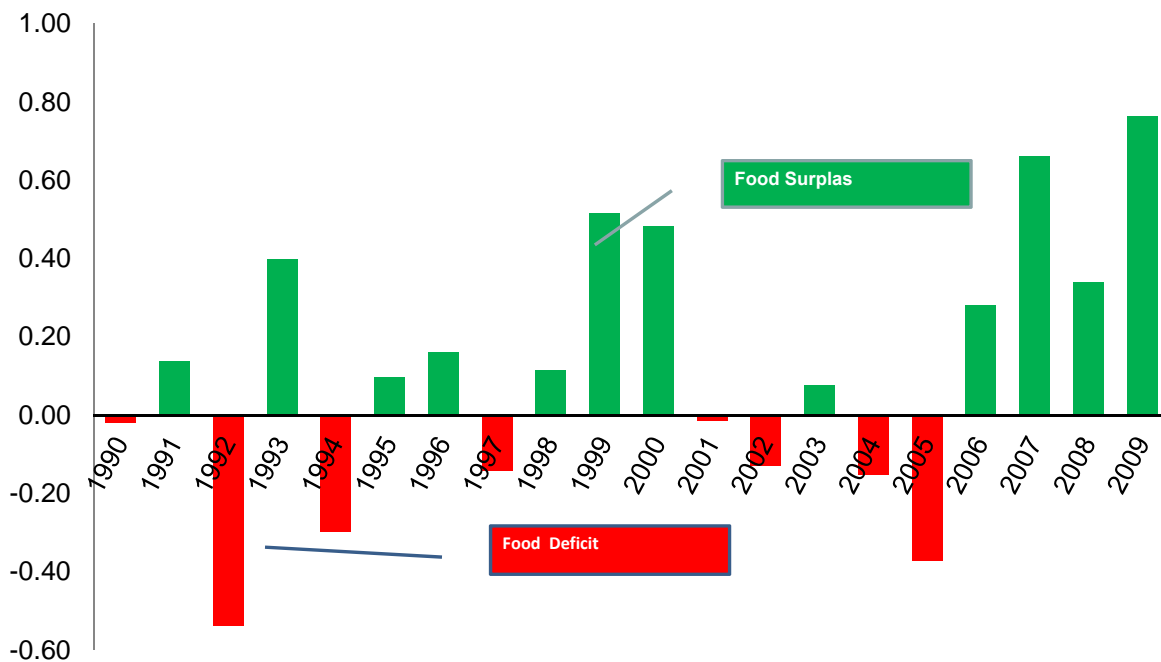
- The National Food Reserve Administration (NFRA) established
  - SGR custodian (60,000Mt) and
  - Complement ADMARC grain trading

## Rationale for the SGR in Malawi

## Rationale for the SGR

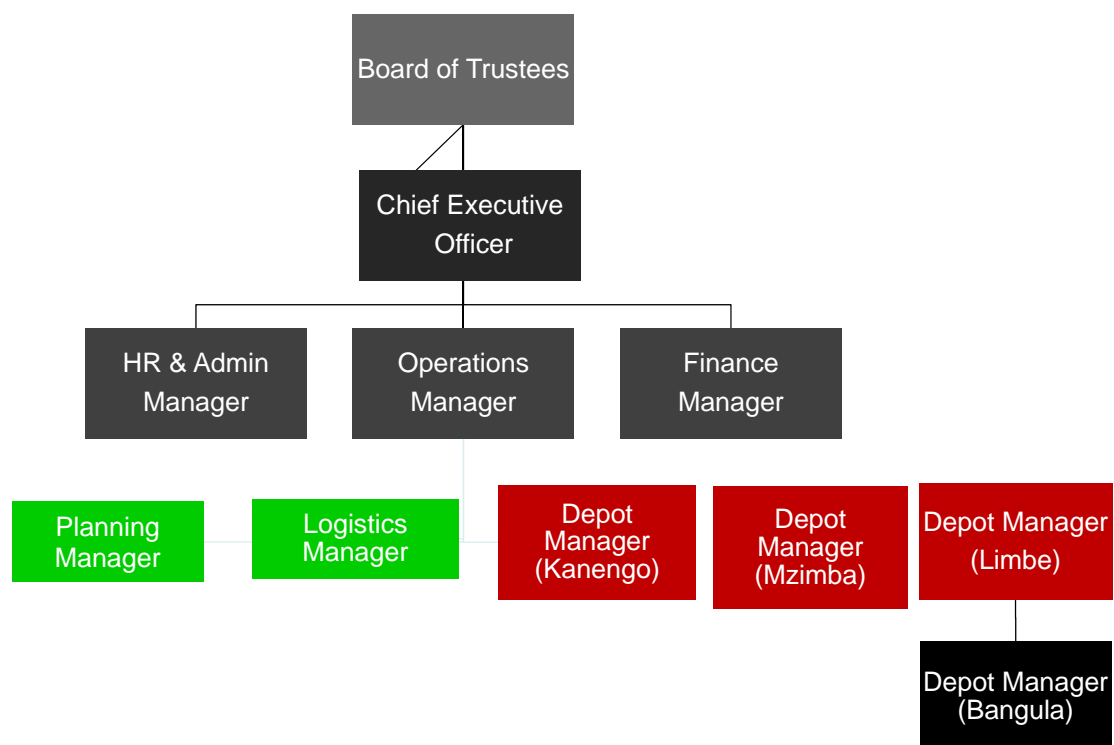
- **Droughts and Floods**
  - Between 1970 - 2006, around 40 weather related disasters have been registered
  - Of which 16 occurred after 1990
- **Food Gap**
  - Out of the 20 years (1990 - 2009) in only 12 years did the country manage to meet its food requirement from local production
  - Dependence on import and food aid
- **Despite exports in some periods, the country remained importing in those deficit periods**

## Rationale for the SGR-Net Food balance (Surplus and Deficit)



## Institutionalizing the Malawi SGR National Food Reserve Administration (NFRA)

# Institution and Operation



## Spatial location and capacity of NFRA and ADMARC warehouses

Region	Number of RDP	NFRA Storage Capacity (Mt)	ADMARC Storage Capacity (Mt)		Total Storage Capacity (Mt)
			Markets	Depot	
Central	8	235,000	119,760	125,000	479,768
East Central	1		6,750		6,750
South	10	65,000	45,380	120,000	312,150
North	5	5,000	17,470	30,000	77,270
<b>Total</b>	<b>24</b>	<b>305,000</b>	<b>189,360</b>	<b>275,000</b>	<b>875,939</b>

## Warehouse capacity and Utilization by NFRA

- Total capacity: 328,000 Mt
- Effective capacity: 288,000 Mt
- Newly constructed: 60,000 Mt ??
- National warehouse capacity utilization in 2009: 48%

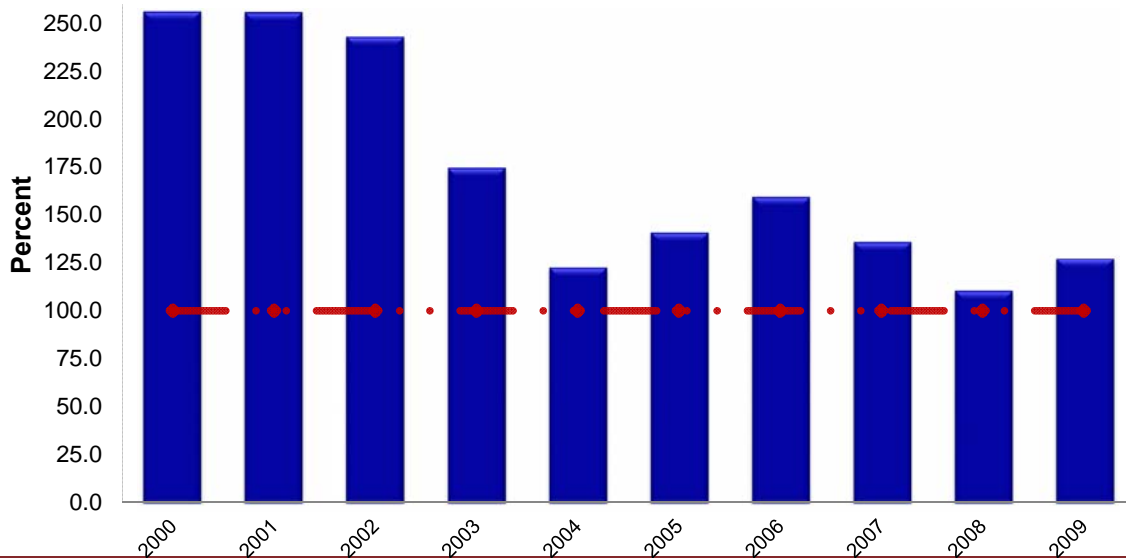
Location	Type	Capacity (Mt)		Average stock in 2009	Capacity Utilization (%)
		Rated	Effective		
Kanengo	Big Storage	47,000	39,950		
	Silo	180,000	153,000	130,755	85
Mangochi	Newly constructed	20,000	20,000	2703	14
Bangula	Big Storage	5,600	4,760		
Limbe	Big Storage	30,000	25,500	4019	16
Zomba	Big Storage	5,600	4,760	2595	55
Luchenza	Newly constructed	20,000	20,000		
Mzuzu	Newly constructed	20000	20,000		
<b>National</b>		<b>328,200</b>	<b>287,970</b>	<b>140,072</b>	<b>48.4</b>

## Operational Performance

## Operational performance.....2/3

### *Stock Movement : Stock movement vs optimal level*

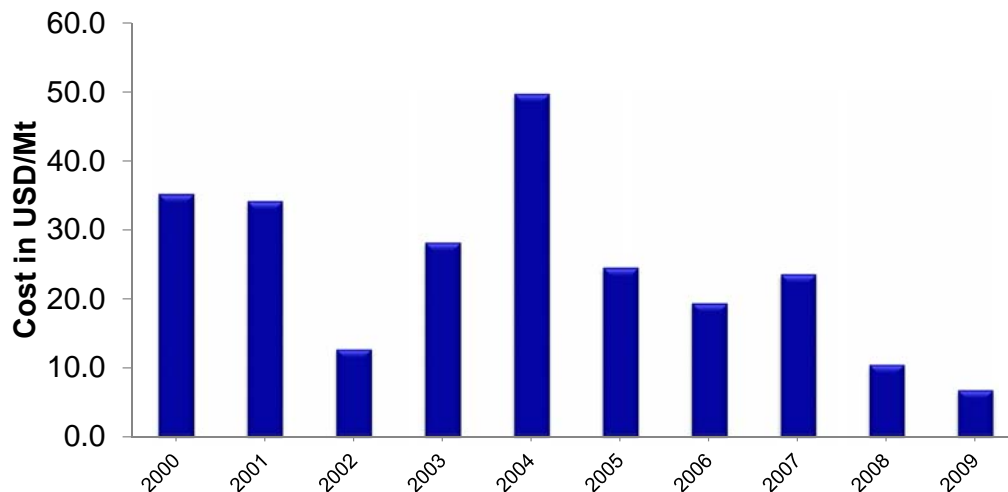
- Using Malawi's optimal SGR pegged at 60,000MT, the country seems to be stocking more grain than it needs.
- Little correlation between changes in stock levels and total costs.



## Operational Performance.....1/3

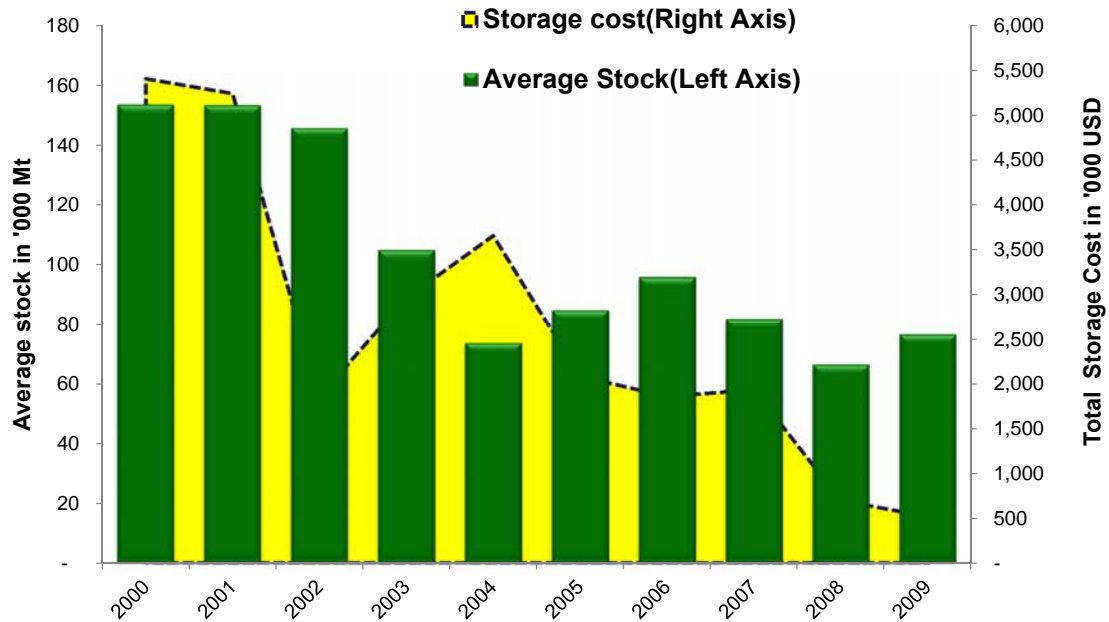
### *Stock Management : Storage cost per metric tons per/yr*

- Average yearly stock in tons (2004-2008)- 80,600
- Average unit cost (US\$/Mt/Year)- 22
- Yearly average total cost (Million US\$)- 1.0



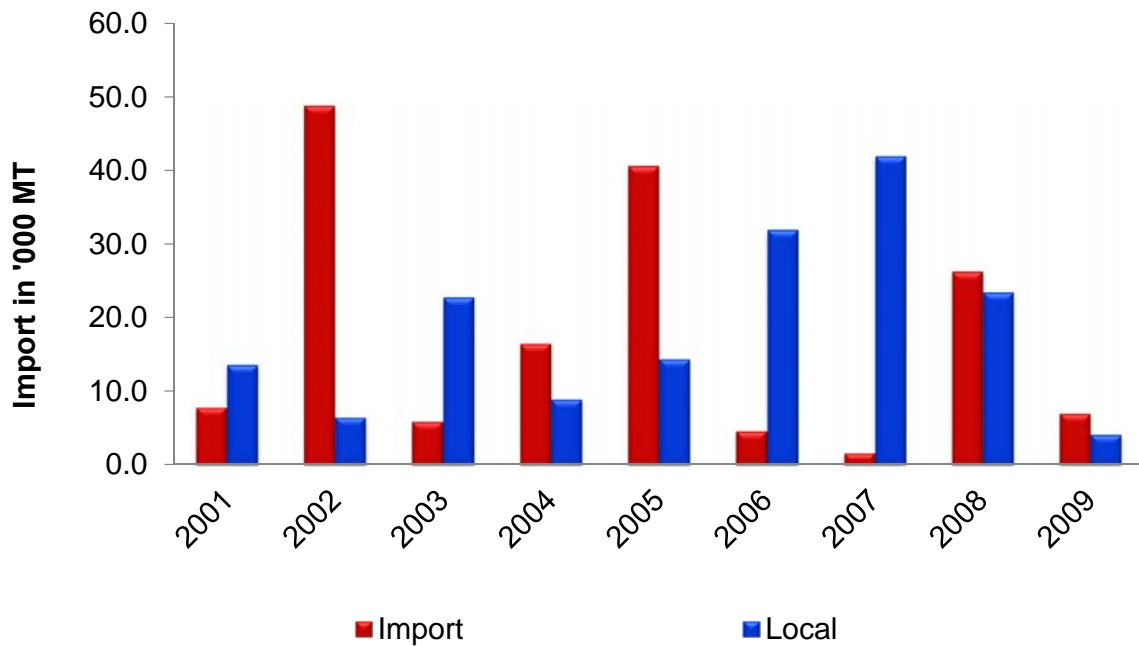
# Operational performance.....3/3

## Change in total stock and cost-Summary result

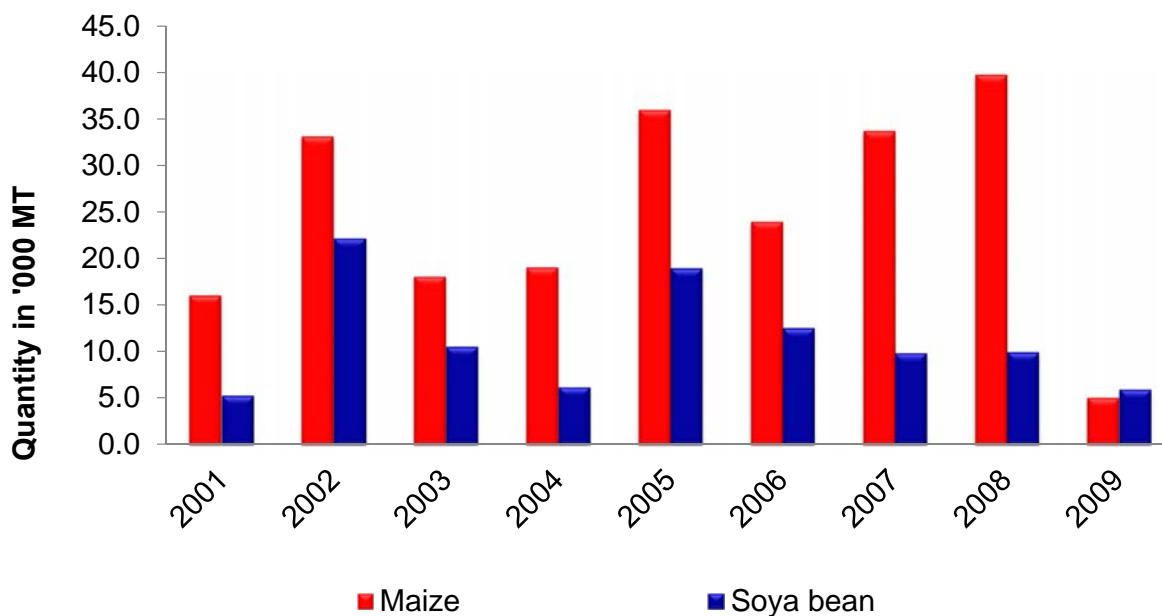


## SGR's Linkages to other Food Security Programs

## Linkages with World Food Program's universal school meals

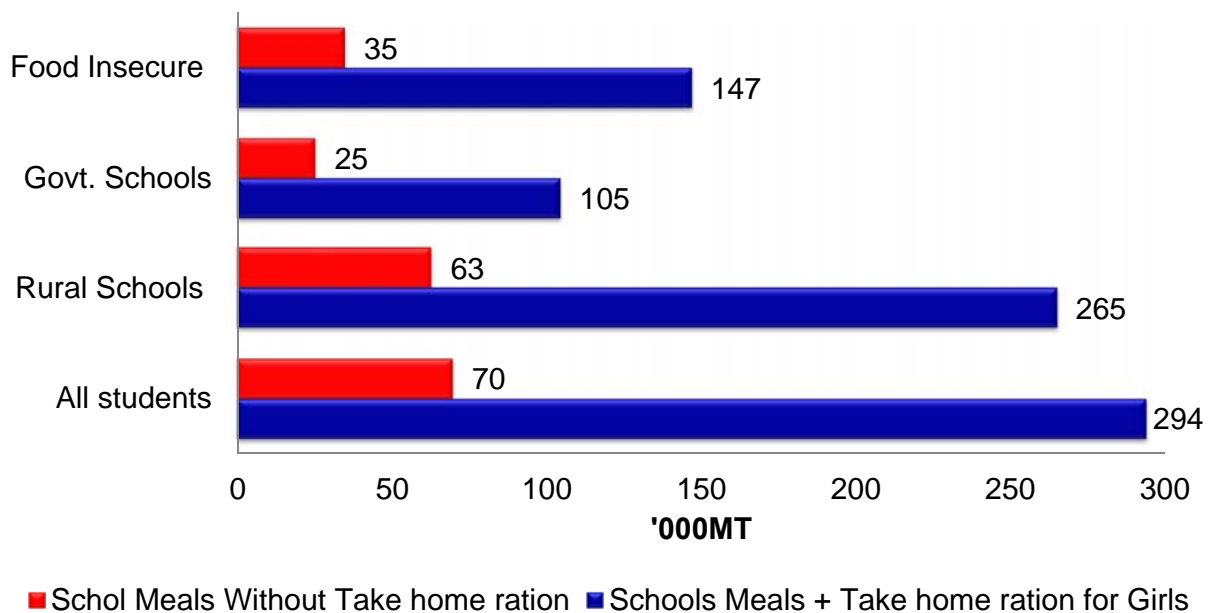


## Commodity purchased locally and imported by WFP



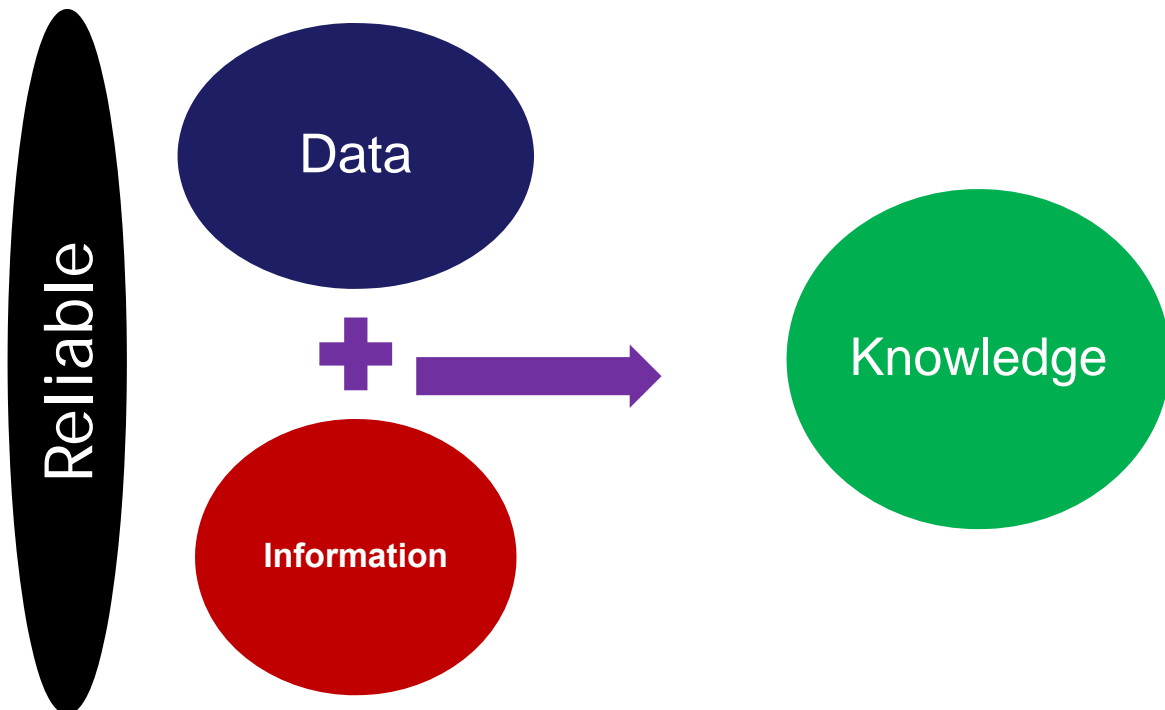
## Large demand for school feeding program in Africa.

## Another rotation option: School Meals: with & without "Take-home ration" scenarios



# SGR Rotation, Pricing Policy, & Grain Markets

## Data and Information



## SGR rotation, pricing policy, & grain markets... 1/2

*Can SGR stocks crowd out private stocks and hence impede private trade??*

Depends on:

1. Size of stock
2. Timing of distribution and purchase
3. Targeting of the program beneficiaries.
4. The effects of stocks on market prices also depend on whether a country is food deficit, is self-sufficient, or has a surplus.

## SGR rotation, pricing policy, & grain markets... 1/2

Rotating stocks: through open market sales.

*Major negative consequences can be easily envisioned.*

1. Stock is injected to the market during post-harvest time, it will depress domestic prices, hurting the producers.
2. ... stock is released during the lean season, it depresses prices, can then benefit the consumers, but will affect traders
3. If rotation is done by selling and buying at the same time, the subsidy bills will go up, as government's sale prices will be lower than purchase prices, as well as associated logistic costs.
4. ..can create uncertainties to the market, adversely affecting producers to invest and traders to engage in trade.

## SGR rotation, pricing policy, & grain markets..2/2

A rise in stock levels from 60,000 Mt to 200,000 Mt will depress the market price by 33.9% (if distributed within 6 lean months)

Stock levels	Price depressing effects if:			
	Prices relatively elastic ( $\epsilon_p=0.6$ ) Scenario-1		Prices are relatively inelastic ( $\epsilon_p=0.4$ ) Scenario-2	
	Distribution Model 1 (--12--)	Distribution Model 2 (--6--)	Distribution Model 1 (--12--)	Distribution Model 2 (--6--)
(.....Percent .....				
Stock kept at 60,000 tons	3.4	6.8	5.1	10.2
The actual stock available at the time of visit (147,000 MT)	8.3	16.6	12.4	24.9
<b>Stock increased to 200,000 MT</b>	<b>11.3</b>	<b>22.6</b>	<b>16.9</b>	<b>33.9</b>

## EXAMPLE: Food deficit, self-sufficient, or a surplus country--cereal supply/demand balance

Item	Supply/Demand
<b>Cereal supply and utilization ('000 Mt)</b>	
Domestic Availability	<b>3,852</b>
2009 Production	3,881
<b>2010 Utilization</b>	<b>3,986</b>
Food use	2,416
Non-food use	1,185
<b>2010 Local purchase/Import Requirement ('000Mt)</b>	<b>134 (Private Sector)</b>
Anticipated commercial imports('000Mt)	109
Received or contracted ('000Mt)	103
Food aid needs ('000Mt)	25
<b><u>Current Aid Position</u></b>	
Food aid pledges ('000Mt)	25
Delivered ('000Mt)	25

## Conclusion & Policy Implications

1. **The optimal size of SGR stock should be determined based on robust studies.** Otherwise large SGR size will:
  - Depress market prices and leave -incentives for private traders
  - Ignore the contributions of private sector in holding grain stocks
  - Requires huge resources to manage the stock
  - High risk of spoilage
2. **The SGR should be solely for its intended purpose:**
  - Consider the release of SGR maize for non-relief purposes-only for the purpose of grain circulation
  - *The role of the private sector???*

## Conclusion & Policy Implications....cont'd

### 3. **Establish transparent rotation strategy for SGR commodities**

For example in Malawi:

- ADMARC could be potential partner to NFRA in its rotational programs
- School meals program, in whatever form it will take, could also be another partner in the rotational program
- Establish transparent rotation strategy
- Keep the SGR management strategy transparent

### 4. **Consider diversifying the SGR commodities and regional issues**

- Include Rice, Sorghum and Makaka ndi nandolo etc
- Subsidizing other countries?

THANK YOU