



INTERNATIONAL FOOD
POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty

Grain Reserves & Food Security

Lessons from country case studies

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FOOD PRICE VOLATILITY AND FOOD SECURITY

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CENTER FOR DEVELOPMENT RESEARCH,

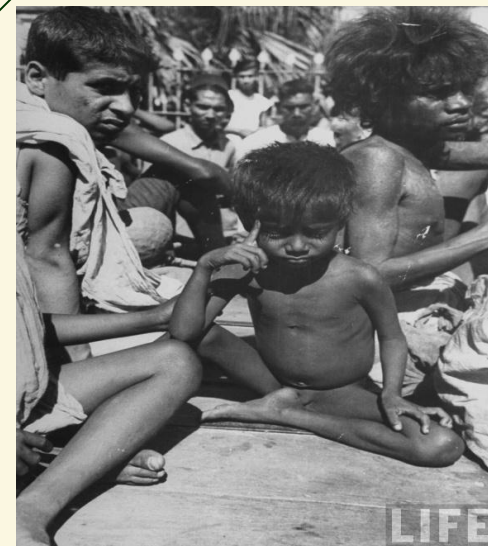
UNIVERSITY OF BONN, GERMANY

Plan of Presentation

- Economic / policy justifications or grain reserves
 - Context
 - Rationale and objectives
- Grain reserve and food & Ag policies
 - Illustration of the basic model
 - The challenges of this model
- Country experiences
 - Emerging policies and potential challenges
- Summary

Policy context: The genesis

Transportation for British Indian Soldiers



Images of Bengal Famine 1943

Policy context: today's reality (1)



Why GR in developing countries?

- Price is the outcome of a ***process of exchange***, we call market. So, price of a commodity will be right only if the process of exchange is right—that is, if the market fundamentals (infrastructure, markets institutions, information, etc.) are right.
- If market fundamentals are ***missing / inadequate***, markets cannot ensure efficient resource allocation; and hence public interventions (e.g., holding food stocks, building roads, promoting technology) are justified.
- And such interventions are ***not contradictory*** to the theories of market economics

Grain reserves objectives

Objectives (general)

1. Maintain food security reserve
2. Address emergencies
3. Stabilize market prices



- Are these mutually exclusive objectives?
- Holding food security reserves is a mean to addressing emergencies?
- Price stabilization is needed following an emergency / market shock

An additional objective in Asia

Keep the public food distribution operational



- It implicitly assumes that all public distribution channels are justified and efficient!
- And these implicit assumptions make the policy objective ambiguous.

Grain reserve & food security policies (1)

- To enhance agricultural productivity, government does the following:
 - Invests in agricultural R&D to develop a new adaptable technology.
 - Disseminate this technology through massive extension programs.
- Farmers adopt new technology; and
 - There is bumper harvest, with prices hitting lower than costs of production → *market collapses*

Grain reserve & food security policies (2)

A policy advisor steps in and suggests ensuring a minimum price so that farmers do not get discouraged by market collapse.

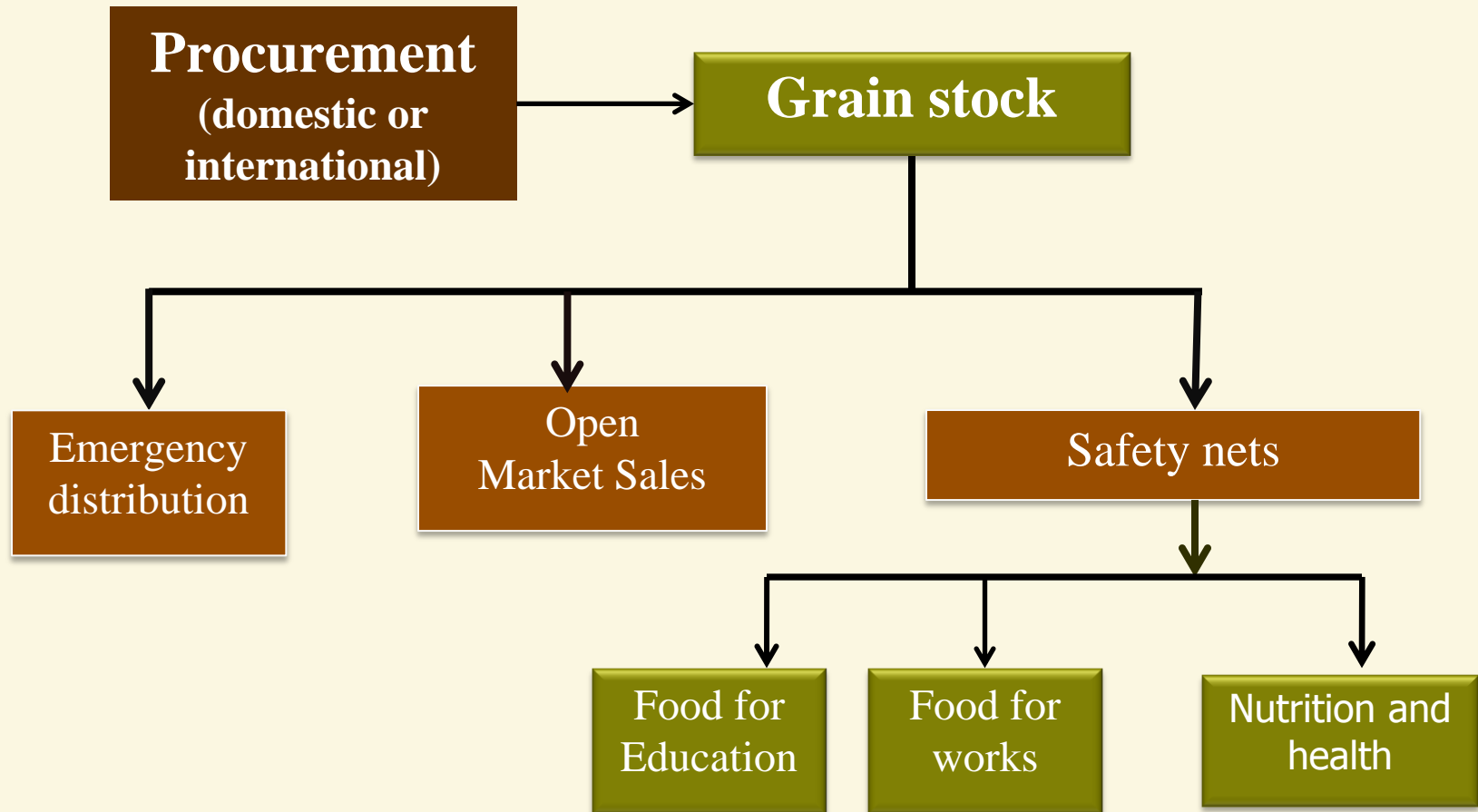


- Estimation of right minimum price
- Setting up institutions to carry out monitoring

- Storages facilities
- Grade & Standard assurance

- Stock management
- Distribution in market friendly way

Grain reserve & food security policies (3)

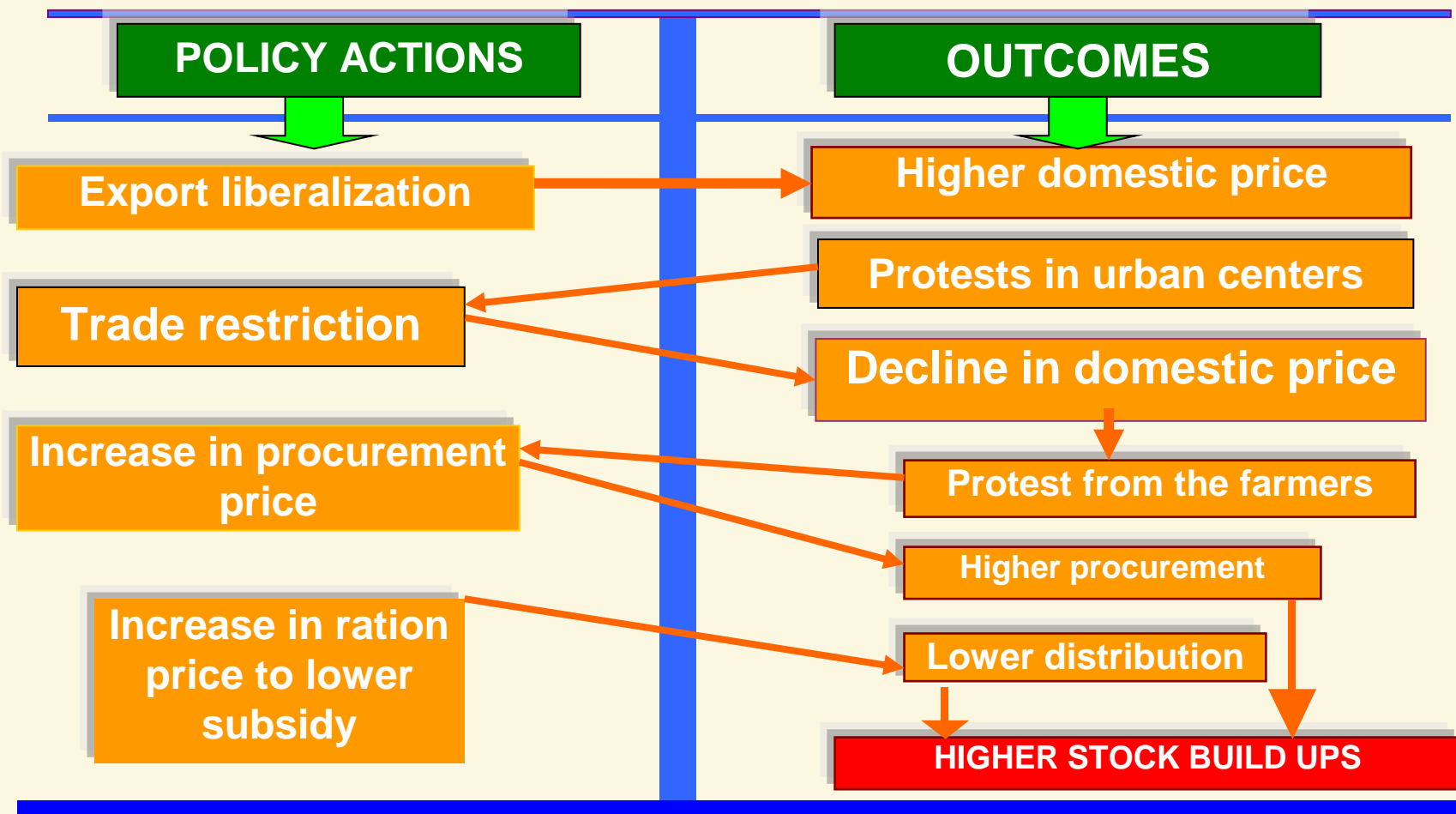


Grain reserve & food security policies (4)

- This is the model Asian countries adopted to promote *green revolution*.
 - While this model worked remarkably well in early years of green revolution, it became very expensive or even counter-productive in some cases
- African governments also heavily intervened grain markets, but the model was different (integration with safety nets, government's market shares, other institutions)
- Reforming this model has proved extremely difficult.
 - Consider the a couple of examples

Challenges of Asian model

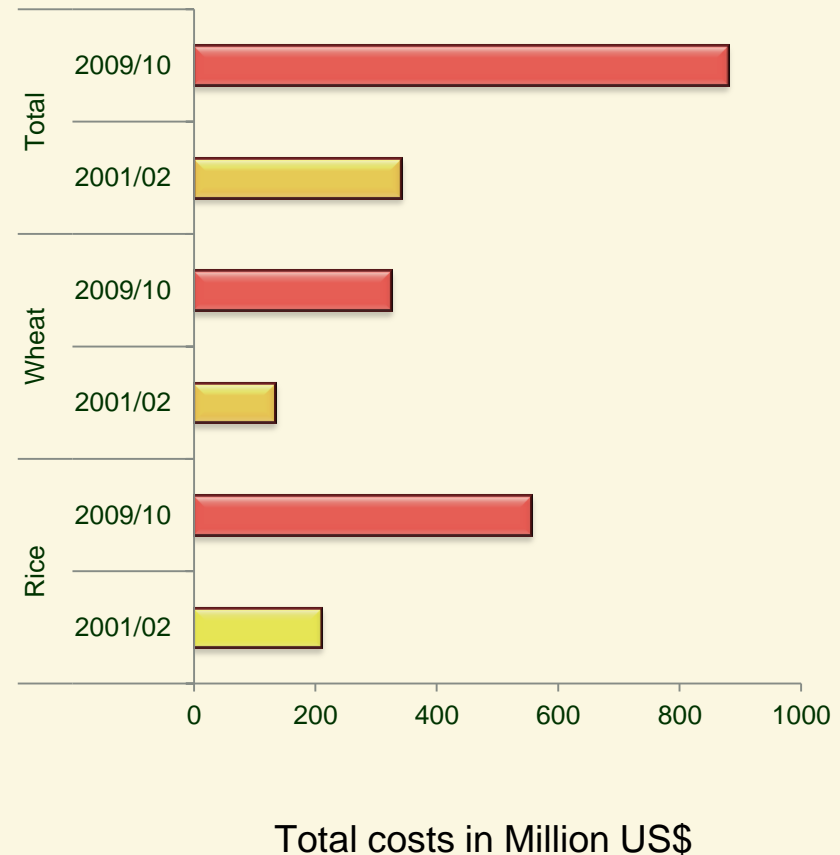
Challenges: once adopted, hard to get out



Challenges of Asian model (Bangladesh example)

- PFDS has grown and become expensive compared to 2001/02. increased sharply compared to 2001/02.
- Gross operating costs has increased from US\$350 million in 2001/02 to US\$877 million in 2009/10
- Total operating costs on account of rice alone is estimated to be more than US\$450 million in 2009/10.

Figure __: Gross PFDS costs (mn US\$) by cereal (2001/02 and 2009/10)



Evolving policies and potential challenges

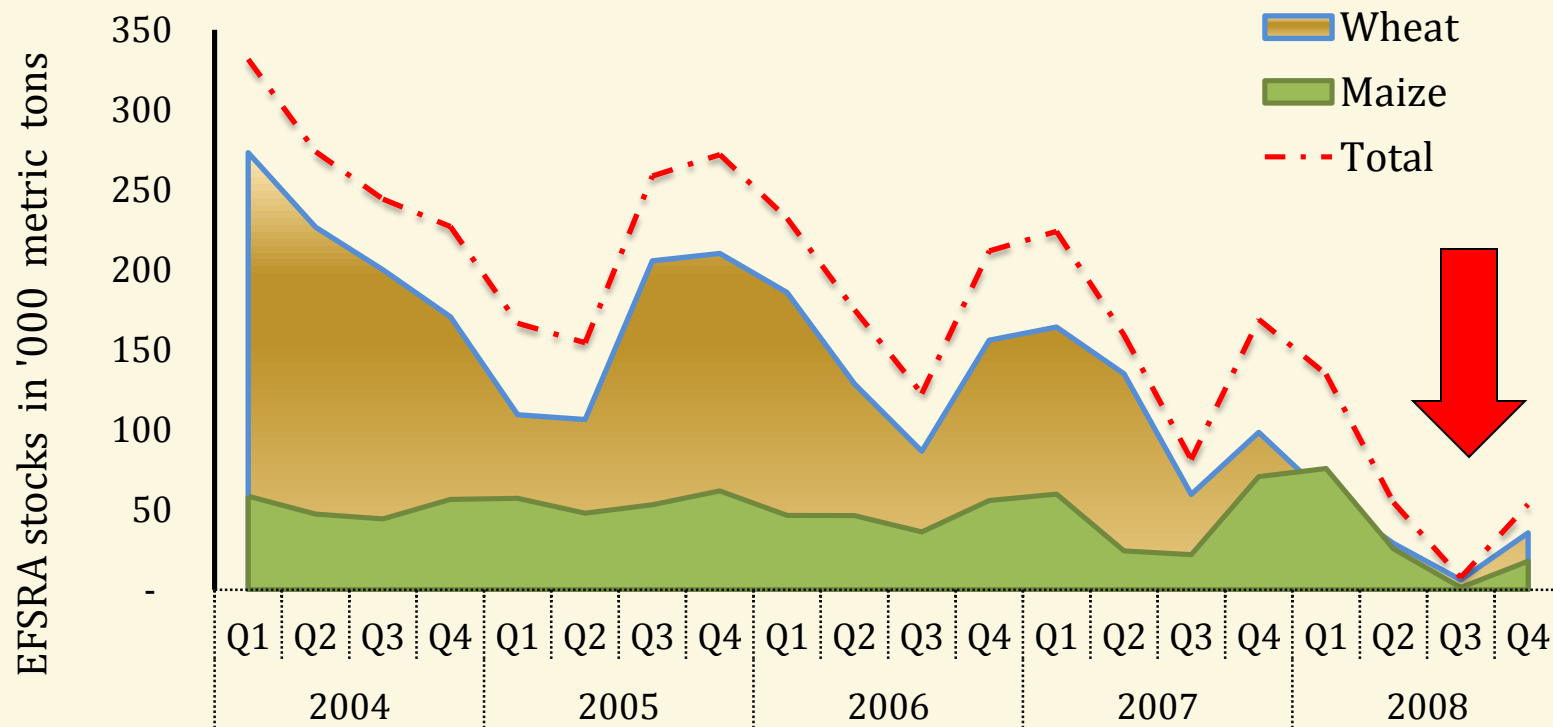
- More and more countries are considering increasing grain stocks. Here is a sample:

Countries	Pre-food crisis	Post food crisis
Bangladesh	0.7 Million tons	3.0 million tons
Ethiopia	407 thousand tons	3.0 million tons
Kenya	360 thousand tons	720 thousand tons
Malawi	80 thousand tons	200 thousand tons
Zambia	Very small	360 thousand tons

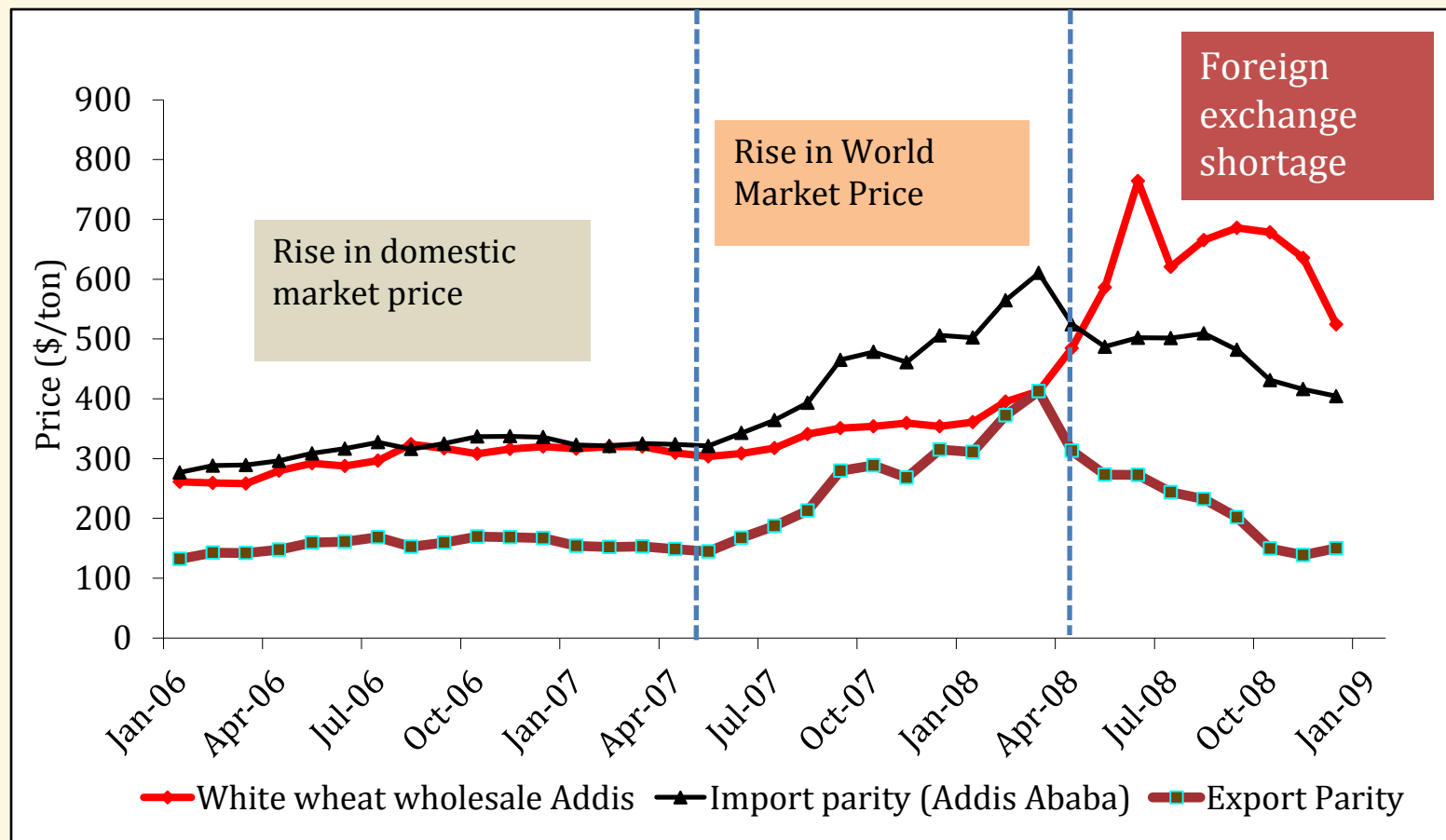
Evolving policies and potential challenges(2)

- The decisions to increase grain stocks requires scrutiny:
 - Very little is known how these optimal stock numbers are calculated.
 - Analysis stock data during the global food crisis also raises issues
- Consider the cases of Ethiopia and Bangladesh

Example 1: Ethiopia EFSRA

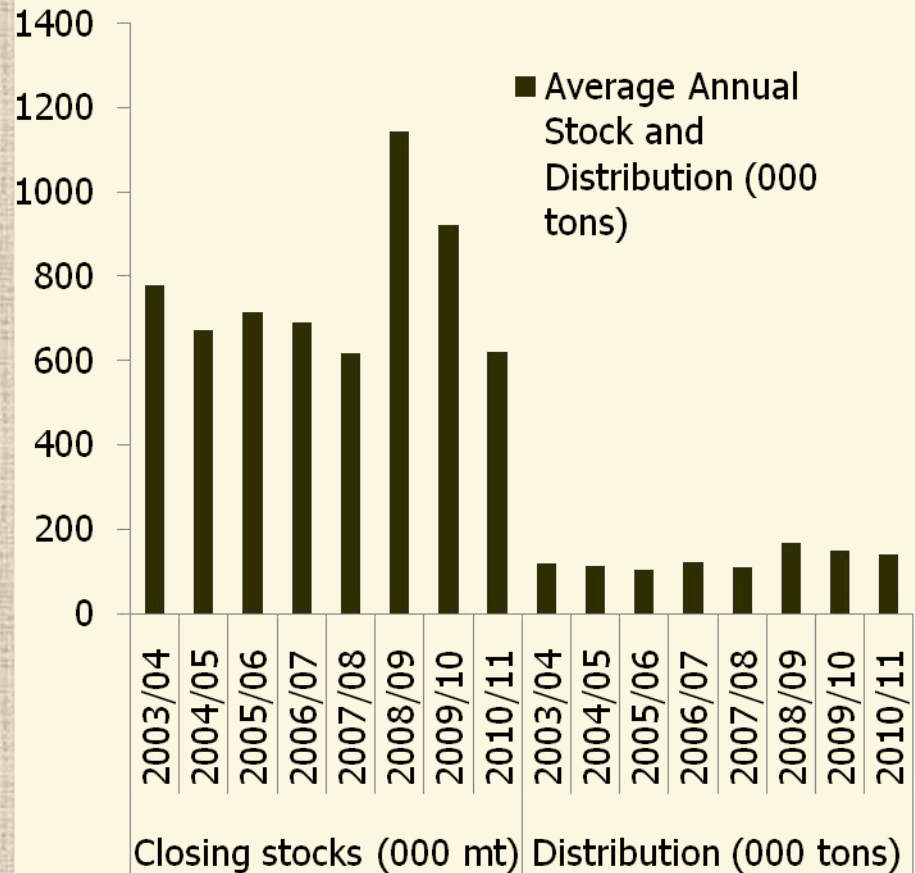


Ethiopia: It was more than grain stock



PFDS stock trends

- During 2003/04 to 2010/11, average monthly closing stock varied from 0.6 million metric tons to 1.2 million metric tons.
- Monthly distribution, on the other hand, averaged around 200 thousand tons.
- Only in 2011, monthly distribution exceeded 400 thousand tons in a few months.



More reasons to be cautious

Indicators	Ethiopia	Kenya	Malawi	Mali
Average stock age (%)				
≤3 months	62.2	33.6	N/A	N/A
Older than 3 but less than 6 months	28.4	25.3	N/A	N/A
Older than 6 but less than 9 months	9.4	8.1	N/A	N/A
Older than 9 months	0	33.0	N/A	N/A
Storage costs*				
Average yearly stock in tons (2004-2008)	163,579	446,792	80,600	43,149
Average unit cost** (US\$/Mt/Year)	39.7	60.9	53.6	48.3

Summary

1. Overview summary

- Grain reserves can play justifiable roles in addressing price instability and food security. BUT
 - Ensuring efficiency and effectiveness is critical.
 - Holding grain reserve is expensive
 - Once adopted, these policies are hard to change

Summary (2)

2. Many countries are considering increasing grain reserves.
 - These decisions do not seem to be based on solid analysis.
 - In general, grain reserve decision need to be based on:
 - A critical minimum necessary to address emergencies and a maximum ceiling to reduce operating costs and waste.
 - A maximum ceiling to reduce waste and operating costs
 - Stock cannot be a single number!!