Public grain reserves: International experience and lessons for Malawi

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Outline

• Objectives of public grain reserves
• Current issues
  • Public food distribution
  • Emergency relief
  • Price stabilization
• International experience
• Future directions
• Conclusions & lessons for Malawi
Objectives of public grain reserves

- **Food and nutrition security**: ensuring that all people at all times have access to sufficient nutritious food for a healthy, active life
- Public reserves can promote FNS in three ways
  - Reserves can supply food distribution network
    - assistance to chronically poor households
  - Reserves facilitate emergency relief
    - assistance to temporarily poor household due to flooding, drought, or other natural disaster
  - Reserves can be used for food price stabilization
    - reduce risk to households and farmers
Current issues: Public food distribution

- Capacity and stocks needed for public food distribution depend on:
  - Monthly quantity distributed (Q)
  - Average time (months) in storage (T)
  - Capacity requirement = 2QT (under certain conditions)
Current issues:
Public food distribution

- Traditional approach: procurement in surplus areas or from imports, sell to consumers in urban areas and sometimes rural areas at subsidized prices
- Cost-effectiveness as poverty reduction strategy depends on targeting
- Studies show leakage to non-poor households is common
- Shift from universal distribution to geographic targeting to social safety net programs
Current issues
Emergency relief

- Capacity and stocks needed for emergency relief depend on:
  - Time needed to obtain supplies from imports or other sources
  - Distribution of emergency need within that time
  - Percentage of emergencies to be fully covered
Current issues
Emergency relief

- Fuzzy boundary between emergency relief and price stabilization, particularly if “emergency” defined broadly
- Traditionally emergency relief in form of food (cereals, vegetable oil, etc)
- Increasing use of cash assistance
  - Cash assistance is cheaper for government & more flexible for beneficiary
  - Works well if shortages are local and market work well
  - Food aid still needed if emergency is national or markets don’t work
Current issues
Price stabilization

- Motivation for price stabilization

By comparison, for six Asian countries, the CV for rice prices ranged from 12% in Bangladesh to 25% in the Philippines.
Current issues

Price stabilization

- Benefits of price stabilization
  - Importance to consumers depends on share of budget spent on grains
  - Importance to farmers depends on share of income from grain sales
  - Studies find benefits of price stabilization to be relatively small (0-2% of income) but political pressure for stabilization remains strong

- Costs of price stabilization to government
  - Amortized cost of storage facilities
  - Transport and handling
  - Spoilage in storage
  - Financial costs (buy now, sell later)
Level of price band

- If band is too high:
  - Buying more than selling
  - Accumulation of stocks
  - Eventually exhaust funding or storage capacity

- If band is too low:
  - Selling more than buying
  - Depletion of stocks
  - Eventually exhaust stocks

- One option: adjust mid-point using rolling average (e.g. past 3 years)
Width of price band

- **Wide band implies:**
  - Less price stabilization
  - Less frequent intervention
  - Lower cost

- **Narrow band implies:**
  - More price stabilization
  - More frequent intervention
  - Higher cost
Benefits of price stabilization

Figure 1. Diagram of effect of food price instability on household welfare

- Food price instability
- Real income (purchasing power)
- Consumption
- Reduction in welfare

Importance of commodity in consumption or as source of income, level of diversification

Ability to smooth consumption with savings, credit, sale of assets, etc.

Level of income, degree of risk aversion
Costs of price stabilization depend on details

For hypothetical country producing 2 m tonnes/year with high volatility, relationship between width of band...

... and cost of price stabilization for a country producing 2 million tonnes per year with high price volatility
Public food reserves in practice

- Typically managed by state-owned enterprise
- Reserves in main staple cereal and 1-2 others
  - Root crops and cooking bananas too perishable
- Food reserves in developing countries have multiple objectives
  - Price stabilization, preparation for emergencies, support farm price, keep down consumer prices, etc.
- Food reserves use different types of interventions
  - Not just buying & selling, but import & export policy, government imports and exports, regulations of grain marketing
- Food reserves do not use consistent buy/sell rules
  - Intervention depends on budget resources, politics, etc.
## Public food reserves in practice

### Buying and selling policies

<table>
<thead>
<tr>
<th></th>
<th>Discretionary</th>
<th>Rule-based</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Decisions about buying and selling are made based on judgement based on a wide range of factors</td>
<td>Decisions about buying and selling are based on explicit criteria using a small number of quantifiable factors such as price</td>
</tr>
<tr>
<td><strong>Factors influencing decision</strong></td>
<td>Weather, harvest size, world prices, stocks, availability of funding, political pressure, political debate, leadership decisions</td>
<td>Usually just buying price and selling price, though may be adjusted occasionally</td>
</tr>
<tr>
<td><strong>Predictability</strong></td>
<td>Less predictable</td>
<td>Predictable based prices</td>
</tr>
<tr>
<td><strong>Effect on private sector</strong></td>
<td>Lower investment in storage and transport capacity because of uncertainty</td>
<td>Greater investment due to predictability</td>
</tr>
<tr>
<td><strong>Potential for rent-seeking</strong></td>
<td>Higher</td>
<td>Lower</td>
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</table>
### Public food reserves in practice

**International experience: Eastern and Southern Africa**

<table>
<thead>
<tr>
<th>Food reserves in different Eastern and Southern African countries</th>
<th>Botswana</th>
<th>Kenya</th>
<th>Malawi</th>
<th>Tanzania</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Reserve</strong></td>
<td>Strategic Grain Reserve (SGR)</td>
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<tr>
<td><strong>Storage Capacity (MT)</strong></td>
<td>70,000(^1)</td>
<td>1,800,000 (20 million bags by 90kgs)(^2)</td>
<td>217,000</td>
<td>240,000(^3)</td>
<td>1,200,000(^4)</td>
</tr>
<tr>
<td><strong>Crops</strong></td>
<td>Maize and other grains</td>
<td>Maize and other grains</td>
<td>Maize</td>
<td>Maize and other grains</td>
<td>Maize</td>
</tr>
<tr>
<td><strong>Responsible Institution</strong></td>
<td>Botswana Agricultural Marketing Board (BAMB)</td>
<td>National Cereal and Produce Board</td>
<td>National Food Reserve Agency (NFRA)</td>
<td>National Food Reserve Agency (NFRA)</td>
<td>Zambia Food Reserve Agency (FRA)</td>
</tr>
<tr>
<td><strong>Population (2015)</strong></td>
<td>2.3 m</td>
<td>46.1 m</td>
<td>17.2 m</td>
<td>53.5 m</td>
<td>16.2 m</td>
</tr>
<tr>
<td><strong>Average Maize Production (2006-2016, MT)</strong></td>
<td>12,477</td>
<td>3,225,397</td>
<td>3,227,864</td>
<td>4,874,602</td>
<td>2,357,469</td>
</tr>
</tbody>
</table>

Source: Chafuwa, Chiyembekezo (IFPRI-Malawi).
Public food reserves in practice
Examples of minimal intervention

- **Uganda**
  - Plan for Modernization of Agriculture says:
    “The Government recognises that publicly held food reserves are very expensive under the best of conditions and require careful management to minimise losses due to spoilage. Such schemes have had limited success in other countries, but have certainly exerted substantial demands upon public funds. Therefore, government will not adopt any policy to accumulate such stocks unless and until careful studies in Uganda have determined their efficacy.”

- **Mozambique**
  - No strategic grain reserve or price stabilization efforts

- **Tanzania**
  - Has Strategic Grain Reserve but has been too small to affect prices (purchases are about 1% of production)
Public food reserves in practice
Examples of more interventionist policies

- **Ethiopia**
  - Ethiopia Grain Trading Enterprise (EGTE)
  - Ad hoc intervention in maize & wheat markets
  - In 2006-8, rising grain prices, surpassed import parity
    - Inflation
    - Harvest smaller than estimated
    - No private imports because announced government imports and foreign exchange shortage

- **Kenya**
  - National Cereals & Produce Board (NCPB)
  - Successful in partial stabilization and raising maize prices
  - Major price spike in 2009 caused by
    - High import tariff (50%)
    - No private imports because announced government imports
    - When tariff lowered, congestion in transport routes
  - Major corruption scandal
    - Allocation of valuable import licenses
    - Allocation of subsidized maize from NCPB
Public food reserves in practice
Zambia

- 1980s: maize marketing controlled by National Ag Marketing Board (NAMBOARD), which set pan-territorial and pan-seasonal prices and handled maize imports and distribution
- 1989: NAMBOARD abolished and private trade legalized
- 1996: Food Reserve Agency (FRA) formed to administer grain reserve as buffer stock, private trade remains legal
- FRA procurement was small or zero over 1996 – 2001, expanded since 2002, dominant buyer since 2005
- Other intervention: export bans, tariff rates, govt maize imports
Study by Mason and Myers (2013)

- Results:
  - FRA reduced CV of maize price by 17%
  - FRA raised average price of maize by 10%
  - Welfare effect of price increases much larger than welfare impact of stabilization
  - Benefits to large surplus farmers, losses to urban consumers and small net-maize buyers in rural areas
Public food reserves in practice
Malawi

- Agricultural Development & Marketing Corporation (ADMARC) and Food Reserve Agency (FRA)
- Three price spikes since 2000
  - Poor rainfall played a role but price spike exacerbated by:
    - Lack of transparency about grain stock size
    - Government announcements of imports, then delays
    - Procurement for government export
- In spite of efforts to stabilize maize price, volatility among the highest in sub-Saharan Africa
  - Question is whether volatility is high in spite of stabilization efforts or whether intervention may contribute to spikes
Maize prices in Malawi
Seasonal price index (1.0=average)
Maize prices in Malawi
Admarc sales, retail maize and MFG prices, 2005-2016
Maize prices in Malawi

Domestic price and import & export parity over 2004-2016 in US$
Buffer stocks are notorious for being politicised, and making variable pricing decisions depending on political pressures. For this reason, it is argued that they need to be recast as independent agencies or trusts, with a legal status that enables them to operate free of political interference…

Maize policy in Malawi is understandably highly political, and many decisions can only be understood in terms of electoral cycles, promises made by political parties and their leaders prior to gaining power, and the goal of securing political support from important sectors of the populace in the future.” (Manda, 2010)
Future directions

- With income growth:
  - share of household expenditure allocated to food declines (Engel’s Law)
  - Share of food spending allocated to staples declines (Bennett’s Law)
  - Diet shifts away from staple grains and toward meat, fish, dairy products, fruits & vegetables, and processed foods
- Implications for reserves: as importance of staples in diet declines, need for grain price stabilization declines
Future directions

- With structural transformation of the economy
  - Diversification in farm production into high-value commodities, so that income from staple grains becomes less important.
  - Reduction in incidence of poverty due to income growth
  - Gradual long-term shift of poverty from rural to urban
  - Growth in export value & foreign reserves relative to cost of imported food, making food imports less of an economic burden and macro-economic risk

- Implications for public grain reserves: Declining importance
Future directions

- With development of infrastructure and markets
  - Need to deliver food in kind declines
  - Cash assistance is less expensive to deliver and provides more flexibility for beneficiary
  - Cash creates demand, which will draw food supplies to region if roads are passable and markets functioning
  - WFP and several countries switching from in-kind assistance to cash assistance

- Implications for public grain reserves: Declining need to store grain for distribution
Lessons for Malawi

- Consider shifting from direct in-kind food assistance to cash-based assistance
  - Could be provided on pilot basis to test effects
  - Studies in other countries show cost savings and satisfaction among beneficiaries with similar benefits for food security
- Open borders provide no-cost “price band”
  - Impeding imports has exacerbated price spike in several cases
Lessons for Malawi

- **Price stabilization is expensive**
  - Large procurement costs (US$ 20-100 m per year)
  - Storage, handling, and overhead
  - State enterprises cannot cover costs with stabilization efforts

- **Aggregate benefits are small**
  - Most estimates 0 to 4% of farm income

- **Benefits of price stabilization not pro-poor**
  - Most of benefits to larger commercial farmers, also urban poor

- **Food price stabilization prone to “rent-seeking”**

- **Improve consistency and predictability in govt actions**
Lessons for Malawi

- Promote private grain storage & imports
  - Credit, non-intervention, & storage rental

- Promote consumption of secondary staple crops
  - Cassava can act as shock absorber for grain markets

- Rationale for 3 months grain reserve
  - To cover period until commercial imports can be arranged

- If price stabilization politically necessary
  - Adopt rule-based price band
  - Adopt wide & market based price band
  - Adjust center of band periodically
  - Provide transparency on stock levels and predictability in procurement/sales activities