History of Kenyan Maize Production, Marketing and Policies

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TEGEMEO INSTITUTE OF AGRICULTURAL POLICY AND DEVELOPMENT

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Outline

- Introduction
- Evolution of maize production in Kenya
- Evolution of maize marketing
Introduction

- Maize is central to Kenya's agriculture & food security
- It is produced by 98% of the 3.5 million small-scale farmers
- It provides >1/3 of caloric intake
- It accounts for about 56% of cultivated land in Kenya
Introduction

- Small- and medium-scale sector produces about 75% of the nation’s maize crop
- Large-scale sector (farms over 25 acres) produces the other 25%
- Mainly produced under rain-fed conditions
Evolution of maize production in Kenya
Trends in maize production and area

- Steady increase in production (up to 1976)
- Decline in production (1976-1980)
  - Drought in 1980
- Greater variability in production (1980-2010)
  - More frequent and severe swings in production in the recent years
- Declines correspond to drought years
- Maize production is vulnerable to weather variability
Reasons for trends in production

- Period of growth in production (1961-1976)
- Due to policy interventions
  - Land reforms
    - Land distribution to small-scale farmers; 575,000 hectares to 49,000 families
    - Significant increase in agricultural production
  - Public investment in research & extension
    - 10 % of govt. annual budget to agricultural research & expansion of agricultural extension (quality & quantity)
    - High-yielding varieties of maize developed
    - Adoption of new maize varieties by farmers
Reasons for trends in production

- **Input & credit subsidy**
  - Promotion of use of purchased inputs through input price subsidization and credit subsidization to farmers
  - Greater use of purchased inputs hence increased production

- **Produce marketing and price controls**
  - Arrangement for commodity marketing through marketing boards
  - Pan-seasonal and pan-territorial pricing policy
  - Assured prices and market outlets, hence greater production
Reasons for trends in production

- Decline in production due to
  - Weather variability
  - Limited agricultural land expansion
  - Inefficiencies in marketing boards
  - Low producer prices
    - A disincentive to production
    - Shift away from maize to other enterprises
Current challenges in maize production

- Low and declining soil fertility
- Inadequate use of quality seeds
  - Fake/poor quality seeds
  - Delayed supply and inadequate amount of certified seeds
  - Slow pace of hybrid replacement: 80% of farmers use hybrid seeds but a hybrid released in 1986 (H614) still dominates on farms in Kenya
    - Average age of hybrid is 17 years
- Disease
- High fertilizer cost
  - Dramatic growth in fertilizer consumption in Kenya
  - Affordability is a key challenge to fertilizer use among smallholders
Current challenges in maize production

- Land fragmentation and decreasing land-size holdings
- Dependence on rain-fed production
- Substantial postharvest losses due to lack of proper postharvest management (about 10% for maize)
## Fertilizer usage by smallholders

### Percent of farming households not using inorganic fertilizer and reasons

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>2007</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Did not use fertilizer (% of hh)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reasons for not using (% of hh)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unaffordable</td>
<td>47.6</td>
<td>44.8</td>
<td>51.5</td>
</tr>
<tr>
<td>Unavailable</td>
<td>-</td>
<td>-</td>
<td>0.8</td>
</tr>
<tr>
<td>No need to use</td>
<td>10.6</td>
<td>21.0</td>
<td>32.8</td>
</tr>
<tr>
<td>Uses organic fertilizer</td>
<td>21.3</td>
<td>24.7</td>
<td>11.9</td>
</tr>
<tr>
<td>Others reasons</td>
<td>20.5</td>
<td>9.6</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Tegemeo Institute, Household Surveys (1997-2010)*
Land fragmentation and decreasing land-size holdings
Evolution of maize marketing in Kenya
Before liberalization

- State control of production and marketing through marketing boards

- Government set
  - Producer and into-mill prices for maize grain
  - Prices for maize meal sold by millers and retailers to consumers
  - Pan-territorial and pan-seasonal prices adjusted once per year at the beginning of the marketing season
Before liberalization

- Government marketing board, NCPB, had a longstanding monopoly on internal and external trade

- Informal private trade across district boundaries and cross-border trade were illegal

- Traders needed to apply for movement permits for transporting grain across district boundaries
Liberalization period (from 1987/88)

- Cereal Sector Reform Program began in 1987/88 as part of SAPs
  - First serious market reform
  - Legalization of inter-district maize trade, with the maximum volume of maize trade to be progressively raised over time
  - Reduction of NCPB’s market share
Liberalization period & after

- Reform process intensified in 1993
- Gradual process
  - Elimination of movement and price controls on maize trading
  - Deregulation of maize and maize meal prices
  - Elimination of direct subsidies on maize sold to registered millers
  - NCPB buyer and seller of last resort
  - Private sector participation increased
  - Government intervenes by imposing variable import tariff and financing NCPB operations
  - Maize price stabilization policy
    - NCPB purchasing domestically produced maize at support price
    - NCPB maintains grain strategic reserve
Liberalization period & after

- Liberalization has been a major policy thrust affecting the maize industry over the past 20 years

- Expected to raise competition by encouraging more private sector participation in the market and thereby reduce costs in the marketing system

- Sometimes, risks and costs of private sector investment have increased
  - Reforms have been marked by frequent and usually unanticipated changes in trade tariffs, quantity restrictions, and setting of producer prices
## Chronology of maize market reforms in Kenya

<table>
<thead>
<tr>
<th>Period</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979-1986</td>
<td>• Strict control of maize price, movement and storage under the NCPB</td>
</tr>
</tbody>
</table>
| 1986-1990    | • Limited relaxation of control of maize price, movement and storage under the NCPB Government  
              • First serious market reform under the Cereal Sector Reform Programme (CSRP) conditional to EEC/WB aid |
| 1990-1995    | • Gradual reduction of control of maize price, movement and storage under the NCPB Government  
              • Market reform under the CSRP/KMDP conditional to aid |
| 1995-1999    | • Full liberalization  
              • NCPB buyer and seller of last resort  
              • Private sector participation increased  
              • Government intervenes by imposing variable import tariff and financing NCPB operations |
| 1999-2012    | • Maize price stabilization policy; NCPB purchasing domestically produced maize at support price and maintains grain strategic reserve  
              • Variable import tariff on maize imports retained |
Two decades after liberalization
A very complex maize marketing system

- Appears to be very competitive at assembly, wholesaling, and retailing levels

- Large-scale milling sector may be somewhat concentrated in some regions
Informal imports from Tanzania/Uganda

Rural consumers

Brokers / Local assemblers

External itinerant traders

Wholesale traders

Informal imports from Tanzania/Uganda

Large-scale farmers

World market imports

WFP, NGOs

Maize surplus smallholder farmers

Posho millers

Processors, animal feeders

Medium- and large-scale millers

Kiosks/dukas/traditional retail markets

Supermarkets

Urban consumers

National Cereals and Produce Board

World market imports

Maize surplus smallholder farmers
Farmers in most villages have many sales options
Evidence of growing investment in private sector grain assembly

Number of traders operating in a village in 2008/09 season

Inaccessible villages

Accessible villages

percent of villages

0 10 20 30 40

0-15 16-30 31-45 46-60 75-90 91-105 >105

0-15 16-30 31-45 46-60 75-90 91-105 >105
Farm structure of maize sales very concentrated

<table>
<thead>
<tr>
<th>% of total sample</th>
<th>Farm size (acres)</th>
<th>Asset wealth ('000 ksh)</th>
<th>Maize sales ('000 ksh)</th>
<th>Gross value total crop sales ('000 ksh)</th>
<th>Total income (crop+animal+off-farm, '000 Ksh)</th>
<th>% female headed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 50% of maize sales</td>
<td>2.1</td>
<td>15.4</td>
<td>806</td>
<td>166</td>
<td>213</td>
<td>584</td>
</tr>
<tr>
<td>Rest of maize sellers</td>
<td>42.7</td>
<td>5.2</td>
<td>65</td>
<td>14</td>
<td>58</td>
<td>230</td>
</tr>
<tr>
<td>Farm hhs not selling maize</td>
<td>55.2</td>
<td>3.3</td>
<td>49</td>
<td>0</td>
<td>40</td>
<td>166</td>
</tr>
</tbody>
</table>

Source: Tegemeo Institute / Egerton University rural household survey, 2007
Maize price variation in same district/month of sale

Frequency of maize prices received by farmers in Trans Nzoia District in May 2009

Perhaps depends on ability to negotiate a good price & hold onto grain
Marketing system has improved over past 10 years
Unpredictable government intervention in maize markets

- Discretionary policy tools used by the government to influence market prices and supplies

- Uncertainty over government behavior with respect to
  - Decisions on import tariff rates
  - NCPB pricing and marketing operations
    - setting prices for maize purchase and sale
  - Fertilizer subsidy
  - Export bans
Unpredictable government intervention in maize markets

- Influences market prices and supplies
- Stifles private investment in maize markets
  - Raises market uncertainty for traders
- Simultaneous subsidization of fertilizers and purchase of maize from the same farmers at prices higher than the market price
  - Does not result in lower maize prices even when production is good
  - Leads to high consumer maize prices as farmers hold onto their maize
Thank you