Fertilizer Subsidy Programs: Constraints, Opportunities and Lessons

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Importance of inorganic fertilizer in improving productivity

Example: Maize Farmers

Tegemeo Institute household surveys

Yields still low even for farmers using fertilizer
Reasons for not using inorganic fertilizer

Tegemeo Institute household surveys
Fertilizer subsidy programs in Kenya

Two subsidy programs

NAAIAP (National Accelerated Agricultural Inputs Access Program)

National/general subsidy
NAAIAP (from 2007)

Kilimo Plus

Input grant (seed + fertilizer) → ↑ Productivity → ↑ Production → Household food security

Kilimo Biashara

Insurance → Cereal banks → Market linkages → ↑ Productivity and income → Household food security

Re-investment in agriculture
Target beneficiaries

- Farmers unable to afford farm inputs at commercial prices
- Farmers growing maize/rice and had at least 2.5 acres of land
- Farmers who had not received similar support in the past
- Implemented through vouchers redeemable at private agro-dealers
- Reached 537,218 farmers
NAAIAP program effects

• Significantly raised maize production among beneficiary households (13-30%)
  – Primarily by increasing maize yields

• Reduced poverty severity
  – poverty gap (about 10 percentage points)
  – severity of poverty (11 percentage points)

• Hence program succeeded in raising average incomes of the poor

Source: Mason et al, 2017
National/general subsidy program

• Government procures and distributes fertilizer at subsidized prices to farmers across the country through NCPB

Source: MOAI, 2018
In North Rift, national fertilizer subsidy reduces farmers’ probability to participate in commercial fertilizer market by 30%.

On average one ton of subsidized fertilizer displaces 0.2 tons of commercial fertilizer.

- Distortionary effects in the private fertilizer markets

Source: Makau et al., 2016
Constraints facing fertilizer subsidy programs

- Distance to NCPB depots: farmers incur costs in *time and transport* where the depots are situated far from their farms
- High transaction/non-monetary costs——cumbersome acquisition process
- Diversion of the subsidised fertilizer – Repackaging & resale
  – Adulteration
- Late delivery of fertilizer
- Dependency syndrome
Average distance to NCPB depot by county (Km)

Tegemeo Household Survey, 2014
Constraints facing fertilizer subsidy programs

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Constraints facing fertilizer subsidy programs

- **Sustainability** --- high fiscal cost
- **No clear exit strategy** hence difficult to control the cost of the program
- Market distortions in key distribution areas--crowding out of private sector
- Rent-seeking, political interference and elite capture
Trends in DAP prices

Source: World Bank, USDA
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Opportunities through ISP

• Blending----Tier 2 of fertilizer cost reduction program
  – Partnership with private sector to develop custom blends

• Enhanced fertilizer response rate
  – [Localized fertilizer blends](#) informed by soil testing to respond to heterogeneity in soil fertility
  – Local institutions/capacity for soil testing e.g. KALRO stations
  – Stimulate demand for soil testing among farmers
    • Financed from fertilizer subsidy kitty

• **Bundling of inputs**

• Increased use of fertilizer (% households using and intensity of use)
Soil are heterogeneous even at village level

Source: Tjernström et al., 2016
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Bundling of inputs enhances productivity

Source: Njagi et al, 2016
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Lessons

• Design and implementation
  – Strategic objectives integrated with learning
  – **SMART subsidies**
  – **Joint government & private sector participation**
  – Clear exit strategies--control endless fiscal burden

• A holistic package of support interventions
  – Bundling (seed + fertilizer + insurance + extension)

• Soil health management
  – ISFM practices
  – Periodic soil testing
Subsidy program in Africa

Smart Subsidy Programs

Fertilizer Subsidy

Fertilizer Dealer
Civil Servant
Politician

Universal Fertilizer Subsidies
Source: Nigeria Agriculture Digest
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## Classification of ISP in SSA

<table>
<thead>
<tr>
<th>Non-targeted subsidy</th>
<th>Government distribution</th>
<th>Private sector distribution</th>
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<tbody>
<tr>
<td>Govt importation &amp; distribution (Burkina-Faso, Kenya)</td>
<td></td>
<td>Private sector importation &amp; distribution (Senegal)</td>
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</tbody>
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| Targeted subsidy | Private sector importation, Govt distribution (Malawi, Zambia) | Private sector importation & distribution (Ghana, Kenya, Tanzania, Rwanda) |


- Nigeria’s E-wallet subsidy program closely mirrors NAAIAP
- Kenya piloted the E-Voucher in 2016, what happened after the pilot??
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Thank you