Fertilizer Supply Chain in Kenya

Bernard Kiplimo, PhD

Department of Agricultural Economics and Res. Mgt.
Moi University, Kenya
kiplimoaraaplagat@mu.ac.ke

Research Workshop at IFPRI offices in Dakar, Senegal on Fertilizer Supply Chain in Kenya, Malawi, Nigeria and Uganda

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
IFPRI

August $8^{th} - 9^{th}$, 2016

MOI UNIVERSITY
FOUNDATION OF KNOWLEDGE

Content

Course Outline

1. Introduction
   - Fertilizer supply chain in Kenya
2. Data collection methods
   - Secondary data
   - Primary data
3. Final Report
4. Conclusions
5. References

Objective of the project

- **Main objective:** to provide a comprehensive and detailed overview of the fertilizer supply chain in Kenya.
- **Specific objective:** to provide an in depth description of the market structure, practices and outcomes along the supply and distribution channel in Kenya(e.g. at the production/import level, wholesale level, and retail level).

Scope

- Focus on **main fertilizer(s)** used (e.g., CAN, DAP, Urea,and NPK)
- Identify **main market centers** and **distribution channels** in Kenya;
- Estimate the **number** and **type** of **sellers** (e.g., public/private) at each point in the supply chain (producers/importers, wholesalers, retailers);
- **Prices** and **volume** of sales both across and within each point in the supply chain;
- **Dispersion** among sellers and **distance** to closer (upward) supplier, among others;
- Characteristics of business entities;
- Collection and analysis of **secondary data** and **primary data** from interviews and small surveys,

Fertilizer market in Kenya

- Post liberalization fertilizer policy regime in Kenya is considered a success story in SSA [Kibaara, 2009].
- During the SAPs in 1990s, fertilizer markets were liberalized, government price controls and import licensing quotas were eliminated, and fertilizer donations by external donor agencies were phased out [Ariga, 2008].
- Pre-reform period had been characterized by state-run agencies or private farmer organizations (with heavy state intervention in their management) in input and output markets for import and export, distribution, and retailing.

Kenya's fertilizer markets in Africa

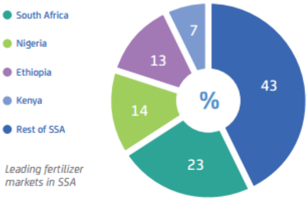

Figure 1: Source: Fertilizer Facts: www.fertilizer.org

Kenyan fertilizer consumption need to nearly double from 0.5 to 0.9 million MT to meet the agricultural growth targets set in the CAADP country investment plans [IFDC, 2012].

Sources of fertilizer in Kenya

- Imports $\cong$ 86%;
- Local production $\cong$ 10,000MT (2%) [Mathenge, 2009];
- Locally blended $\cong$ 60,000 MT annually (new blending plant by Toyota Tsusho due for commissioning this month);
- Private sector dominates imports market;
- Govt agencies KTDA and NCPB;
- Major sources Middle East, USA, Europe, Asia and South Africa;
- New sources China, India and Singapore;
- GoK policy -no duty or VAT on fertilizer.

Actors along fertilizer chain in Kenya

The structure of fertilizer market in Kenya [Mathenge, 2009]

- Importers: > 10, with 4 firms $=$85% market share.
- Wholesalers/distributors: > 500
- Retailers/agro-dealers: $> 8,000$

There are new entrants to manufacture-Toyota Tsusho

New entrants

Toyota Tsusho starts work on fertiliser plant in Kenya

Monday, 07 September 2015 04:56

The plant will manufacture NPK fertiliser in its first phase.
(Image source: Row17/Wikimedia Commons)

The first phase of the construction of a fertiliser plant at the cost of about US$980mn started in Eldoret, Kenya last week

Once operational, the plant is expected to bring down the cost of one of the key farm inputs. The factory, which has been funded through a public-private partnership between the government of Kenya and Toyota Tsusho East Africa, is meant to streamline manufacturing, supply and distribution of the vital farming ingredient.

"We expect the cost of production to drastically reduce upon the completion of the local plant. It is estimated that 40 per cent of the cost of fertiliser is due to freight and port handling charges," said Gituro Wainaina, acting director of the Vision 2030 Delivery Secretariat.

Types of fertilizer consumed in Kenya

Type of fertilizer	Specific variety	% of national consumption (2002-2009)
Planting (basal)	DAP, MAP, TSP, SSP, NPK20:20:0, NKP23:23:0	48.56
Top-dressing	CAN, ASN, UREA, SA	25.36
Tea	NPK 25:5:5:5s, NPK 25:5:5:3.95s + 2.6MgO, NPK 22:21:17, NPK 22:6:12+5S	15.94
Coffee	NPK 18:4:12, NPK 20:10:10, NPK 17:17:17, NPK 16:16:16	4.90
Tobacco	NPK8:16:24+MgO+0.1%B	0.02
Specialized		6.48
Total		100.00

Figure 2: Source: [Mathenge, 2009]

Consumption intensities by region

Agro regional zone	1997	2000	2004	2007
Coastal Lowlands	2.7	6.8	8.0	12.3
Eastern Lowlands	35.2	48.3	56.6	56.6
Western Lowlands	5.9	11.8	15.0	30.5
Western Transitional	58.1	77.0	85.8	87.8
High Potential Maize Zone	86.1	90.5	90.5	93.6
Western Highlands	91.5	89.9	92.2	94.6
Central Highlands	99.2	99.6	97.1	97.9
Marginal Rain Shadow	27.0	35.1	32.4	54.1
Overall sample	63.9	69.9	71.9	76.3

Consumption Intensity

Medium

High

Low

Source: Tegemeo Panel Data

Content

Course Outline

1. Introduction
   - Fertilizer supply chain in Kenya
2. Data collection methods
   - Secondary data
   - Primary data
3. Final Report
4. Conclusions
5. References

Secondary data

Formal requests:

- KNBS-Obtained monthly import data (Jan 2014-Dec 2015)
- MoA-Input division (waiting response)
- AGMARK-involved in the starter packs, credit guarantees and training.
- IFDC-to visit
- FAO/AF
- Tegemeo panel data

Course Outline

Primary data

- Interview from importers/wholesalers/retailers;
- Personal interviews-using CAPIs from the main market centres;
- Algorithms developed and tested;
- Obtained a list of wholesalers and retailers from fertilizer sales-reps with contacts;
- Agro-dealer Map
- Pending work: validation (pre-testing) of the instrument, selection and training of the enumerators.

Content

Final report

- IFDC;
- MOA Annual reports;
- KNBS economic surveys;
- Tegemeo panel data;
- other sources.

Content

Conclusions

- After the report-what next?

Content

J. Ariga and T. Jayne (2008) Kenya Fertilizer Policy Success Story:1990 to 2008. http://fsg.afre.msu.edu/kenya/Jayne_Tech_Convening_Addis.pdf

Joshua Ariga and T. S. Jayne (2008) Fertilizer in Kenya: Factors Driving the Increase in Usage by Smallholder Farmers. http://siteresources.worldbank.org/AFRICAEXT/Resources/258643-1271798012256/YAC_chpt_16.pdf

Betty Kibara, (2009) Trends and Patterns in Fertilizer Use by Smallholder Farmers in Kenya, 1997-2007: A Success Story? Paper presented at the Future Agricultures Consortium Workshop Fertiliser Subsidies: Lessons from Malawi and Kenya Panafric Hotel, Nairobi 10 February 2009

IFDC, (2012) Kenya Fertilizer Assessment https://ifdcorg.files.wordpress.com/2016/05/kenya-fertilizer-assessment-ifdc-2012.pdf

Mary K. Mathenge, (2009) Fertilizer types, availability and consumption in Kenya. Paper presented at the 6th National Fertilizer Conference in Kenya, on Towards Increased Use of Fertilizer and Improved Seed for Food Security and Economic Growth, KARI headquarters, Nairobi, Kenya, August 20-21, 2009
http://fsg.afre.msu.edu/kenya/6th_Fertilizer_Conference-Tegemeo.pdf

Asante sana!