Mapping animal feed manufacturers and ingredient suppliers in Kenya

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Presentation Outline

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  4) Quality management
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Study objectives

The study sought to map animal feed manufacturers and suppliers of the feeds’ raw materials in Kenya and establish factors that affect feed in terms of cost, quality and what limits their effective use at farm level.
Study methodology

- Study carried out between **August and October 2016**.
- Data from feed manufacturers, ingredient suppliers, farmers, and several key informants.

- Nairobi city and its environs *(Industrial area, Ongata Rongai, Athi River)*,
- Central Kenya *(Kiambu, Thika, Muranga, Nyeri, Kirinyaga, Embu, Meru and Nyandarua)*
- Rift Valley and Nyanza *(Nakuru, Eldoret, Bungoma, Kitale, Kisumu, Kisii and Kericho)*
- Eastern and coastal *(Machakos, Taveta and Mombasa environs, Malindi and Kilifi)*
Findings: PRODUCTION

- Feed producers are concentrated in Nairobi and Central Kenya.

- No permanent address FOR MANY INGREDIENT SUPPLIERS. No exact statistics of feed producers.

- Ease of entry: Majority of manufacturers own or outsource equipment.
Findings: PRODUCTION

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Imported</th>
<th>Local_fabrication</th>
<th>Don’t have</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hammer mill</td>
<td>25.7</td>
<td>64.9</td>
<td>9.5</td>
</tr>
<tr>
<td>Mixer</td>
<td>31.1</td>
<td>68.9</td>
<td>5.4</td>
</tr>
<tr>
<td>Pellet press</td>
<td>14.9</td>
<td>79.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Extruder</td>
<td>12.2</td>
<td>86.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Liq Adh Facility</td>
<td>5.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other machinery</td>
<td>8.1</td>
<td>9.5</td>
<td>82.4</td>
</tr>
</tbody>
</table>

% of respondents
Findings: PRODUCTION

- **Total population encountered was 305:**
  - 115 who only manufactured feed
  - 96 who supplied raw materials (or ingredients)
  - 94 who did both.
  - **A total of about 210 feed millers in the country** *(2x number established by MoLD in 2008)*

- **Majority of animal feed manufacturers are small scale.**
  - Only a few produce higher volumes:
    - 7% producing 1000 – 5000 tonnes/month
    - 2 – 3% producing higher than that.
  - **Over 90% producing less than 1000 tonnes per month.**
Findings: PRODUCTION

- Kenyan feed manufacturers operate below optimum levels meaning the installed production capacity is adequate to meet the country’s demand.

- Potential annual production = 1,126,656 tonnes,

- Manufacturers are only able to produce 750,000 tonnes per year (two thirds of capacity).

Popular products

- Poultry feed the largest proportion of the products manufactured (41%) followed closely by dairy feeds (39%).
Findings: PRODUCTION

Product innovation:
- **Unga’s:**
  - *Maxi-Milk, Malisho Dairy Meal*,
  - ‘More Milk’ etc.
  - *Layers Special, and FastGro for layers and broilers.*

- **Sigma:**
  - *Kienyeji Mash for indigenous chicken*

- Feed formulation requests by individual farmers.
Findings: RAW MATERIALS

- Maize, wheat and their products are the most dominant.

- There is **substantive importation of raw materials**.
  - Vitamins and mineral premixes and amino acids are not available locally
  - mainly from South Africa and China
  - Inadequate of expertise and technology for production in East Africa
Finding 9: What drives supply, demand and trends?

Drivers of Supply and Demand

1. Changing farming practices increasing ingredient demand
   - More than 50% of sales (or demanded volumes) at the retail points was a combination of compounded feeds and raw materials
   - 16% of retailers either exclusively sold ingredients or more ingredients than compounded feeds, showing a gradual shift to on-farm formulation

2. Competition causing ingredient scarcity

3. Climatic conditions
   - Maize and wheat (and their bran and germ by-products) constitute a bulk of the ingredients used in livestock feeds but their availability varies during the year depending on the crop’s production (and harvest) cycles and productivity.

4. Government regulations varying availability
   - The Government of Kenya (GoK) restricts the importation of some of raw materials, especially those that are linked to genetic modification.
Findings: QUALITY MANAGEMENT

Finding 10: Mechanisms manufacturers employ to assure feed quality

Technical capacity required for managing feed quality

- **Feed formulation specialist:**
  Directly in charge of final feed composition and constitution, ensuring that correct ingredient proportions are used in delivering the required nutritional composition.

- **Quality assurance staff:**
  In charge of the laboratory systems and the analysis that will be done as well. They are in charge of the laboratory systems and what kind of analysis will be done on all ingredients and feeds and interprets the results.

**Professional training in feed milling** is offered at a vocational level, with some organizations being able to send their staff to advanced courses overseas.

Quality is assured when manufacturers have easy access to **feed analysis labs or services** to check and confirm the nutrition content of ingredients before compounding the feed and of the final products after their constitution.
Findings: QUALITY MANAGEMENT

• Only 28% of manufactures had own feed analysis facilities (within their plants).
• The remaining outsourced the services from various providers: …
Findings: QUALITY MANAGEMENT

Kenya Bureau of Standards (KEBS) Labs:

- The 3% who take samples to KEBS for analysis are those who are close to the institution. KEBS lab is only in Nairobi.
  “It is expensive to analyze; one sample test on average costs KES 4000”.

The unreliability of results:

- Inconsistency in reports from service providers: “Samples from the same feed batches give different results

- Some providers reported to be using “Outdated machines ... which sometimes break down ... or can only do certain tests”.
Findings: POLICIES & REGULATIONS

Key legislations:
- Animal Food stuff Act Cap 345 (1967),
- The Standards Act Cap 496
- The Animal Disease Act Cap 364
- The Animal Feedstuff Bill, 2016 currently under review

The enforcing agents:
- The State Department of Livestock (and particularly the Directorates of Veterinary Services and Livestock Resources).
- The Kenya Bureau of Standards (KEBS)
  - Laboratory testing of feeds falls under KEBS
- The Kenya Plant Health Inspectorate Services (KEPHIS)
Issues that need attention:

KEBS legal framework for regulation is strong, **BUT ... a challenge with its enforcement capacity.** “KEBS (took) time to visit the premise for inspection – even after paying and reminding them”.

The cost of KEBS registration and membership is considered “extremely high” **PLUS** lack of apparent value from registration.

“**There is no strict control; there are ‘illegal’ dealers selling cheap products**”.

**The Finance Bill**

The VAT Act 2012 and the subsequent amendment in 2013 resulted in compounded feeds being VAT-exempted.
Findings: POLICIES & REGULATIONS

The Association of Kenya Feed Manufacturers (AKEFEMA):
- Industry trade association for all feed dealers.
- Voluntary (but paid) membership: (by the time of study) just over 100 (about 30% of operators).

Services:
- Self regulation and coordination
- Price regulation and bargains
- Lobbying and advocacy
- Knowledge platform
- Networking platform
- Access to finance
Findings: POLICIES & REGULATIONS

Not all operators are members:
- Lack of awareness
- Unclear or delayed benefits
  “There is nothing we are getting from AKEFEMA apart from contributing and waiting for the year to end so as we can contribute again”
- High registration and membership costs
- Unfair/unbalanced representation for the different scales of production
  - “Meetings favor big manufacturers in the industry”.
  - Some members feel they do not belong. “Kizungu mingi and complicated topics of discussions”
Findings: SUPPLY CHAIN MODELS

The range and frequency of supply chain models used

<table>
<thead>
<tr>
<th>Model</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source + Distributor + Wholesaler + Retailer + Consumer</td>
<td>37.1%</td>
</tr>
<tr>
<td>Source + Distributor + Retailer + Consumer</td>
<td>37.1%</td>
</tr>
<tr>
<td>Source + Distributor + Other + Wholesaler + Retailer + Consumer</td>
<td>11.4%</td>
</tr>
<tr>
<td>Source + Distributor + Consumer</td>
<td>8.6%</td>
</tr>
<tr>
<td>Source + Consumer</td>
<td>5.7%</td>
</tr>
</tbody>
</table>

Feedback and contact personnel used by feed manufacturers
1. Sales_representative 63%
2. Company_doctor 48%
3. Other 20%
4. Govt. Extension 15%
5. None 10%
### Findings: SUPPLY CHAIN MODELS

#### Transport and storage challenges

1. **Manufacturing and preparation practices**
   - Some respondents reported that feed operators (manufacturers and suppliers) were not using or supplying clean, high-quality feed that is free from contamination.

2. **Storage and transportation facilities and practices**
   - Poorly designed vehicles were reported to affect feed quality.

3. **Stock management**
   - Poor stock management was a problem when supply chain actors over-stocked resulting in "expiry or overstay of feeds in the (supplying) store".

4. **Product interference along the supply chain**
   - Some retailers were reportedly mixing feeds on their own (with other concentrates) to increase profits.

#### Factors related to transport challenges

<table>
<thead>
<tr>
<th>Manufacturers</th>
<th>Manufacturers/Suppliers</th>
<th>Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads 95%</td>
<td>Roads 81%</td>
<td>Roads 50%</td>
</tr>
<tr>
<td>Weather 64%</td>
<td>Weather 58%</td>
<td>Weather 40%</td>
</tr>
<tr>
<td>Govt Regs 57%</td>
<td>Govt Regs 45%</td>
<td>Govt Regs 40%</td>
</tr>
<tr>
<td>Own transport 45%</td>
<td>Own transport 52%</td>
<td>Own transport 35%</td>
</tr>
<tr>
<td>Transport type 14%</td>
<td>Transport type 32%</td>
<td>Other 25%</td>
</tr>
<tr>
<td>Other 12%</td>
<td>Other 23%</td>
<td>Other 25%</td>
</tr>
<tr>
<td></td>
<td>Transport type 5%</td>
<td>Transport type 5%</td>
</tr>
</tbody>
</table>
On production and capacity:

- Review ways of obtaining information on feed operators either by national and compulsory census or derivation of such information during registration and renewal of licenses with KEBS and AKEFEMA.

- Establish an information system that easily and quickly reveals the location of all the feed operators to enhance access by all supply chain agents.
  - PLUS: Effective monitoring and regulation all dealers as they evolve from one form to the other.

- Investors should conduct feasibility studies to inform them of production capacity.
RECOMMENDATIONS

On quality management:

- Support establishment of accessible and affordable analysis services that can serve all users – suppliers, manufacturers and farmers.

- Make it mandatory for suppliers to analyse ingredients before sales. Make available to all actors, a database of all possible sources of skills and services.

- Regulation stakeholders (government through KEBS, industrial associations and their members) should track innovation in products and services to ensure they adhere to minimum standards and allowed and un-biased practices.
On quality management:

- There is need for intensive education and information sharing on how to produce and supply feed of acceptable quality.

- There is need for various labs to upgrade and constantly ensure their analytical facilities are up to date and providing reliable results.

- Registration of all feed operators with KEBS and standardization of all feed products brought into the market.

- KEBS should consider outsourcing services from accredited labs to meet the demand.
On quality management:

An education and awareness of the importance and value (benefits) of such registration with KEBS and AKEFEMA. AKEFEMA can establish and promote its own mark of quality, alongside the one of KEBS.

Completion and passing of the Animal Feedstuff Bill (2016) and the enforcement of standardization through the registration of all feed operators with KEBS and standardization of all feed products brought into the market.

Review registration requirements for KEBS and AKEFEMA to make it easier (in charges and competency) for easier enrolment, quality regulation and monitoring.
On supply chain management (to reduce prices, manage quality):

Strategic stocking: Intensive education and information sharing on proper storage, stock (warehouse) management, transportation and pest management.

Establish supply chain monitoring systems that check on actor functions and how they affect the quality of feed:

- (Ensure it is not affected) from production to consumption.
- Monitoring to prevent adulteration, reconstitution and re-packaging.