



The Role of Quality Seed in Promoting Integrated Soil Fertility Management (ISFM): The case of maize

By

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Outline of presentation

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2. **Centralized seed system**
3. Quality Seed - A component of Integrated Soil Fertility Management (ISFM)
4. **Improved Varieties Traits that enhance ISFM**
5. Channels in Promotion of improved Varieties, agronomic practices (ISFM)
6. **Possible solutions to solve challenges i.e promoting ISFM**
7. Conclusions



1. Introduction

- ❖ Tanzania is a huge country that covers 937,060 Km²
 - ❖ great potential for agricultural development
 - ❖ and seed production
- ❖ Two main sources of seeds: formal and informal production and supply systems
- ❖ AMINATA Quality Seed & Consultancy Ltd is one of over 60 registered private seed companies in the formal sector
- ❖ AMINATA Headquarters are at Tanga Municipality, offices and farms in Kwedizinga in Handeni, and in Kilosa district Morogoro - Eastern Zone - contracts farmers across other Zones.
- ❖ **The GOAL:** To improve farmers' agricultural productivity, production, profitability and sustainability through provision quality seed of improved crop varieties in all regions of Tanzania.



1. Introduction (Cont'd)



- Currently the company deals with:
 1. Multiplication, processing and distribution of quality seeds of maize, sunflower, sesame and legumes like pigeon peas
 2. Widespread commercialization of appropriate and well adapted improved crop varieties through district and village-level agro-dealers.
 3. Provision of technical agricultural advisory services to stakeholders in Agriculture
 4. Conducting adaptive agricultural research - to solve challenges faced by farmers - drought, diseases and low soil fertility
- **In Feb 2013 AMINATA released two maize hybrid varieties that are drought tolerant, Low N**



2. Centralized seed system

1

Pre-Basic Seed (NARS, seed companies)



2

Basic Seed (ASA, seed companies)



3

Certified Seed 1
(Public/Private seed Producers)



4

Certified seeds 2 (ASA, seed companies)



5




3. Quality Seed (improved germplasm)- A component of Integrated Soil Fertility Management (ISFM)

Facts:

- **Seed** is a basic input that sets the potential for crop yield, response to abiotic stresses, pests and diseases
- **Quality of seed** determines the crop's ability to respond to other inputs such as **fertilizers, pesticides, and crop management practices**

ISFM

- a set of practices that include:
 - the use of inorganic fertilizer,
 - organic inputs and
 - improved germplasm
 - knowledge on how to adapt to local conditions
- all in optimizing efficient use of the applied nutrients
- Results  in increased crop productivity



Improved maize germplasm

- ❖ Maize is the important food crop to the majority of Tanzanians.
- ❖ However, its production and productivity still low due to:
 - Limited use of improved seeds
 - Frequent droughts
 - Poor crop management practices
 - Low soil fertility and
 - Pests and diseases like the new Maize Lethal Necrotic Disease
- Low yields result in food insecurity and poverty
- ❖ Transforming subsistence agriculture into profitable agriculture:
 - the first prerequisite is advocate the use of improved quality seed varieties in the ISFM package
 - But domestic seed production and imports = 20-30% of the seed requirement - Produce quality seed in country.
 - Besides the farmers - 1. widely dispersed in remote areas,
 - 2. most farmers grow small acreages, hence Seed company must avail quality seed in small packages- 2kg, 5kg



4. Improved Varieties Traits that enhance adoption of ISFM practices

- Released varieties adapted to the agro-ecological zones- low, mid & high elevation areas
 - **stable in diverse conditions to mitigate climate changes,**
- maturity preferred by farmers to enhance their adoption
 - **Tolerant to drought,**
 - **Tolerant to poor soils** -OPVs and hybrids to increase yield through improved nitrogen use efficiency
 - Tolerant to major diseases and pests
 - **grain quality preferred by consumers** - increased marketability and consequent adoption





Release improved Variety : Key Step in the Research Process

- Before a variety can be recommended for release:
 - **It must be evaluated in farmers' fields** for productivity, stability, quality as well as farmers' preferences
 - **Using recommended agronomic practices** in comparison with farmer practice
 - Hence start point for farmers to **know and understand the importance & use of ISFM packages**



5. Channels used in Promotion of improved technologies

- ✓ On-farm variety evaluation - Participatory Variety Selection
- ✓ Demonstrations - Farmer field schools, Mother/Baby trials
- ✓ Field days, radio and TV programs,
- ✓ Seed Sales - small packages of quality seed variety
- ✓ **leaflets, posters** - that include relevant ISFM practices
- ✓ Readily available high quality products for sale - varieties, fertilizers,
- ✓ **All Stakeholders MUST FIGHT FAKE seed, fertilizers, chemicals**



Challenges -seed production and dissemination

Dissemination:

- Poor infrastructure for smooth marketing of seed
eg **bad storage facilities** and roads
- Inadequate **promotional activities** due to high costs involved, public materials marketed by all
- Need credible **agro dealers & stockists**
- Most agro dealers lack **adequate working capital**, so companies deliver the seed on loan - may sometimes not paid timely.



Challenges limiting varietal adoption

- Most agrodealers, stockists **lack adequate knowledge** on the varieties traits they retail to **enable educate farmers** on proper variety/**ISFM** to purchase for his/her agro-ecology.
- ❖ Knowledge on how to obtain and grow improved varieties is critical in adopting improved varieties.
- ✓ Lack of **farmers' awareness on economic value of ISFM** as important inputs in increasing productivity
- High relative price of seed vis-a - vis price of grain
- ✓ **Uncompetitive grain prices** to entice youths in farming
- ✓ Some farmers' **reluctance to change**
- ✓ **Poor extension coverage** due to few staffs, lack of funds



6. Possible solutions to challenges

- ❖ Local Seed companies must **avail a range of crops** that farmers grow - maize, legumes like beans, cowpeas, pigeon peas, soya bean, oil crops etc at affordable prices and **in small packages**.
- ❖ Establish and **strengthen stockists** in all districts in the regions.
- ❖ Public and Private Seed companies must have
 - (i) **experienced personnel** in research, seed industry and public-private partnerships
 - (ii) vast knowledge on the **needs of farmers** in rural areas
 - (iii) focus on the **food crops that can be cash crops** like maize, beans, soybeans
 - (iv) **Collaboration with TASHCO** for soil analyses of contract farmers fields,



Possible solutions to challenges (Cont'd)

Improve farmers adoption rates by:-

- Farmers need more awareness creation on importance of using fertilizers and improved seed for increased productivity
- Enhance extension services, messages throughout villages
- Improve access to credit - agricultural bank
- **Improve grain price to be competitive**
 - Experience from neighbouring countries shows that vibrant grain markets accelerates the use of improved seeds.

Improve seed policies & regulations:-

- To fight fake seed :



Conclusions:

- Fertilizers are indispensable - our soils are depleted of nutrients year after year
- Organic resources are limited but necessary --crop residues, leaves, manure available with farmers
- Quality seed of Improved maize varieties **enhance adoption of other ISFM components**, for increased production, incomes
- Maize varieties and most soils do respond well to inorganic and organic fertilizers leading to increased maize productivity.



Conclusions:

SOO!!!!

- **ISFM Technologies** documented, stakeholders trained
- **THE MANDATE** for all stakeholders is thus to educate and create awareness that additional nutrients to the soil are a **MUST** for increased production that will sustain the ever increasing population
- **MUST COLLABORATE** to Eradicate **the myth** of majority of farmers that **fertilizers destroy soils**
- Encourage and train farmers **to use FYM, compost piled up** around homesteads in their farms for crop production
- **CONTINUE TO DEVELOP IMPROVED MAIZE GERMPLASM ADAPTED TO THE LOCAL CONDITIONS AND NEW CHALLENGES FACED BY FAMERS.**

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THANK YOU



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