Success, Challenges and Opportunities of the Maize Seed Sector in Ethiopia

Dagne Wegary & Adefris Teklewold
CIMMYT-Ethiopia

04 November 2016
Introduction

- Maize is one of the most widely cultivated crops in Ethiopia (lowland to highland, dryland to high rainfall, sandy to vertisols)
- Maize is mainly grown in **high rainfall mid-altitude areas** (small proportion comes from dry and highland areas)
Maize production and productivity trends

Current Status

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household (M)</td>
<td>9.55</td>
</tr>
<tr>
<td>Area (M ha)</td>
<td>2.11</td>
</tr>
<tr>
<td>Prodn (M ton)</td>
<td>7.15</td>
</tr>
<tr>
<td>Yield (t/ha)</td>
<td>3.39</td>
</tr>
</tbody>
</table>

Source: CSA (2016)
Process linkage in seed value chain

- Germplasm Development
- Testing and Demonstration
- Dissemination and Marketing
- FARMER
- Breeder
- Product Development and Advancement
- Marketing and Agronomic Services
What We do?

• Facilitate release and registration of more preferred variety (organize multi-location data)
• Technology promotion – enhance adoption
• Support EGS and certified seed production
• Capacity building (infrastructure, physical and technical)
• Marketing information and linkage (eg. Emergency seed = 11,365 Qts purchased and distributed)
QPM maize variety Promotion - NuME

QPM promotion 2012 – 2015:
- 36 woredas in 4 regions
- 1500 demos
- 300 field days
- 235,000 field days attendants
Drought Tolerant maize varieties were promoted by:

- DTMASS (2015 – to date)
- STMA (2016 – to date)

In 2015 & 2016:

- 490 demos established
- 130 FDs organized
- 43,550 FD participant
Promotion: 36 QPM and 61 DTM Woredas

QPM target woredas

DTM target woredas
Over the last Five years (2012 – 2015), NuME supported the production of:

- 12 tons breeder/pre-basic
- 52 tons of basic
- 1000 tons of certified seeds of QPM
EGS Production - DTM

Capacity building

- Cold room (Ambo, Bako, Melkassa RC)
- Seed store (MBU, EVF, ARARI-Adet, BARC)
- Lab equipment (ARARI, ASE, ESE, OSE, SSE, MBU)
- Other equipment (Seed dresser – EVF)
- Irrigation (Bako NM, ESE,)
- Training & manuals (Seed production, quality, agronomy, business mngt)
- Other trainings through partners (Stockiest, field technicians, outgrowers, farmers)
- Visits and hands-on training
Budgeting

• Direct support provided to most partners through various CIMMYT-led projects:
  – DTMA
  – DTMASS
  – NuME
  – STMA
  – SIMLESA

• In 2015 & 2016 alone, about USD 433,300 and 426,900 was made available for sector
Partners and stakeholders

- We established strong and smooth relationship; and great trust with diverse partners:
  - Public seed enterprises (ASE, ESE, OSE, SSE)
  - Private (Anno, Avallo, EVF, Ethio-agriceft, GGCF, Zi-Endeta)
  - NARES (ARARI, EIAR, OARI, TARI, SARI, M/BoANR, ATA)
  - CBO (Meki-Batu)
  - NGO (SG2000, WVE)
Certified seed production significantly increased in 2015/16.

- A total of 40,000 tons were produced.
- About 75% of the total was produced by the local seed companies whilst 25% was covered by Pioneer Hi-bred Seeds Ethiopia.

<table>
<thead>
<tr>
<th>Seed Class</th>
<th>2015/16 Production (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breeder/Pre-basic</td>
<td>28</td>
</tr>
<tr>
<td>Basic</td>
<td>1134</td>
</tr>
<tr>
<td>Certified</td>
<td>~ 40000</td>
</tr>
</tbody>
</table>
BH661 has overtaken the most popular hybrid, BH660

- Farmers prefer BH661 for:
  - Stress resilience
  - Earlier maturity
  - Higher grain yield
  - Wider adaptation
Challenges of maize seed system

• Low seed quality
  – Site selection, planting, rouging, detaselling, harvesting and processing

• Huge seed carryover (30 – 40%)
Challenges.....

• Slow rate of variety turn-over
  – No exclusive right
  – Lack of responsible institution for promotion
• Maize seed system is still highly dominated by the old varieties (~70%)
What do you do if the ‘CASH COW’ dies

- Variety B - an excellent “cash cow”
- Variety C - takes time to pick up sales, but catches on later to replace the “cash cow” variety B
- Variety D – took off fast to replace A & B
- Sales remain stable – in most cases there are 3 varieties
- Depending on “Cash Cow” alone could be a disastrous if it fails
Individual infection with mixture of viruses can also cause disease.
Typically, infection with one virus results in milder symptoms than MLN but reaction depends on germplasm and viral strain.
Challenges.....

Genetic gain

- Currently, there is a fierce competition in developing and releasing high yielding varieties
- Genetic gain over years need to be monitored very closely
- There should be a fair gain for the investments made
Opportunity

- Improved and diverse source maize germplasm is freely available from CIMMYT (including MLN resistant)
- Strong donor support
- Improved national capacity, NARS do have seed researchers in most centers
- CIMMYT’s MLN screening facility
- DH facility to fast-track the development of highly productive lines
- High rate of adaption & farmers’ willingness to pay
MLN Screening Facility at KALRO-Naivasha
Maize DH Facility for Africa at Kiboko, Kenya
Way forward

• Taking the advantage of available potentials and opportunities (gemplasm, infrastructure, skill and knowledge)
• Seed quality and EGS supply
• Strengthening capacity of stockiest and out-growers
• Policy briefs (PBR, exclusive right and others)
Thank you for your interest!