AIP-maize innovations and interventions in Pakistan

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Maize breeding programs management and statistical data analysis training
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Unlike wheat, large scale maize interventions in Pakistan is very recent.
Why maize?
Need for Feed!
I am more or less a value added maize!
## Asia maize indicators (2013-14)

<table>
<thead>
<tr>
<th></th>
<th>Area (M ha)</th>
<th>Yield (t/ha)</th>
<th>Production (M t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>35</td>
<td>5.9</td>
<td>205.6</td>
</tr>
<tr>
<td>India</td>
<td>9.1</td>
<td>2.5</td>
<td>22.7</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.1</td>
<td>2.9</td>
<td>8.8</td>
</tr>
<tr>
<td>Nepal</td>
<td>0.9</td>
<td>2.4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Pakistan</strong></td>
<td>1.1</td>
<td><strong>4.3</strong></td>
<td>4.8</td>
</tr>
<tr>
<td>Philippines</td>
<td>2.6</td>
<td>2.8</td>
<td>7.3</td>
</tr>
<tr>
<td>Thailand</td>
<td>1.1</td>
<td>4.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Vietnam</td>
<td>1.1</td>
<td>4.3</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>South Asia</strong></td>
<td>11</td>
<td>2.7</td>
<td><strong>30</strong></td>
</tr>
<tr>
<td><strong>South East Asia</strong></td>
<td>9</td>
<td>3.4</td>
<td>29</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td>176.5</td>
<td>5.2</td>
<td>915.5</td>
</tr>
</tbody>
</table>

**Source:** USDA PSD 2014
80-90% of hybrid maize seed is from import

- Import value of seeds cereals + Veg: 140 million $
- Import value of maize seeds: 65 million $
- Of the imported cereal seeds is accounted for maize: 53%

Source: drawn from FSCRD unpublished reports (2013-14) and UNdata.org
Value of imported maize seed in Pakistan (in USD) (2003-14) (Source: UNdata.org)
Import bill of maize seeds

≈

Export value of mango!
Comparison of hybrid maize seed price (USD/Kg)
More challenges....

• Germplasm/product development
  • Low variety turnover
  • Limited diversity (SC, biotic & abiotic stress tolerant maize)
  • Less nutritional quality (QPM, ProA, Kernel Zn)

• Absence or limited improved varieties/hybrids (GB, Sindh, Balochistan, AJK)

• Absence of vibrant maize seed system

• Climate change (floods, thermal heat, change in planting and harvesting dates...)

• Lack of maize mechanization (dryer, post harvest tech.)

• Lack of harmonized seed law and enforcement
Zero visibility and low dry down
AIP maize commissioned projects

- Climate resilient maize
- Biofortified maize
- Maize tolerant to biotic stresses
- Enhancing the maize seed sector
Achievements in spotlight

**Product validation and allocation**

- Nationwide testing of diverse germplasm > 1200
- Stem borer tolerant, LN stress tolerant, QPM, ProA, Zn
- Selection of more than 80 maize varieties/hybrids by partners
- 49 maize products allocated for further testing and marketing in Pakistan
Maize products allocated to NARS and seed companies
Handover of inbred lines

- **100**: Set of inbreds to produce 36 hybrids
- **75**: Set of white kernel inbreds
- **25**: Set of yellow kernel inbreds
- **13**: Breeder seeds
Launch of the first biofortified maize

- Two yellow QPM hybrids from NARC
- Under official registration
- Demo seeds distributed across the country
QUALITY PROTEIN MAIZE

Hybrid Demo Seed

Your Seal of Quality from the Field to the Fork

Salient Features of Quality Protein Maize:

- More rich in quality protein than normal maize
- Offers 90% of the nutritional value of skim milk
- Proven to reduce malnutrition in infants and children
- Good source of protein for livestock, poultry, and the food industry
QPM hybrid seed production
(NARC, Oct., 2015)
AIP maize national field day Nov, 2015
Launch of biofortified maize and handover of parental lines Feb, 2016
Training on biotic stress tolerant maize Dec, 2015
Welcome to the Participants of
Advanced Training Course
Developing climate-resilient maize hybrids and seed production
At Maize & Millets Research Institute, Yusafwala, Sahiwal
Beneficiaries/out put indicators

>1100 People trained

2250 Farmers received new seeds

>15500 People benefited
Publicity of activities

>500k viewed AIP maize video in about 3-days
Acknowledgments to the donor and implementing partners

Agricultural Innovation Program (AIP) for Pakistan
Thank you for your interest!