Updates on Impact Oriented Agricultural Research In Africa
CIAT’s Regional Programs

Since the 1960s, with a current focus on Central America, Colombia, and the Amazon.

Since the 1980s, with activities now in 29 African countries.

Since the 1990s, with activities now in China, Vietnam, Laos, Cambodia, and Thailand.
PABRA – A CONSORTIUM OF AFRICAN BEAN NETWORKS
CIAT/PABRA

Other partners: NGOs, Development Agencies, Seed Companies, Farmer groups/associations etc

PRODUCTS: Varieties, Seed System, ICM, Markets, Nutrition/utilization

CROSS CUTTING AREAS: Gender, Policy & M&E
PABRA’s Partnerships
Complementary and efficient use of resources

CIAT
Biophysical / Social Scientists

NARES:
Management Scientists

Development Partners and Policy makers

Users

Technology development + priority setting
Identify key research constraints /opportunities
• Catalyze teams for strategic and applied work
• Publish /share results to feed into future work

Technology adaptation and policy support
• Engage partners for adaptive research to refine technology across multiple countries
• Test approaches to upscale fast, widely + with equity.
• Publish and share results

Catalyze links and partnerships to reach users.
• Provide tools and methods for widespread ; skills and knowledge enhancement
• Raise awareness
• Test and use technologies
Increased access to cost effective and environmentally friendly integrated crop-stress management options (e.g. for soil fertility and water, pest and diseases)

Increased access to high value bean products targeted to niche markets

Increased capacity of men and women to participate in technology development, delivery and decision making bodies equitably

Increased access to new and existing markets and opportunities

Increased access to micronutrient rich bean based products in the diets of vulnerable communities

Increased capacity of men and women to participate in technology development, delivery and decision making bodies equitably

Increased trade in a gender equitable manner

Increased response to demands in the bean sector, and utilizing information and knowledge to influence bean policy in a gender equitable manner

Increased and in gender equitable manner utilization of improved and marketable bean varieties, new crop

Improved nutrition and health, gender equality, food security, incomes and natural resource base for sustainable livelihoods of resource poor women and men farmers

A “Common” Partnership Framework: PABRA Logic Model

Immediate Outcome

Ultimate Outcome

Intermediate Outcomes
Africa’s Development Agenda
Comprehensive Africa Agricultural Development Programme (CAADP)

Four Pillars

Pillar 1
Land and water management

Pillar 2
Rural infrastructure and trade-related capacities for market access

Pillar 3
Increasing food supply and reducing hunger

Pillar 4
Agricultural research, technology dissemination, and adoption
- Integrated natural resource management
- Adoptive management of appropriate germplasm
- Development of sustainable market chains
- Policies for sustainable agriculture

Framework for African Agricultural Productivity (FAAP)
Diversity of common bean market classes
Major Biotic & Abiotic Stresses in Africa

Insect Pests

Drought and soil fertility

Diseases

Ootheca
MARKET CLASS LED BREEDING STRATEGY

Countries with no breeding programs— but have released bean varieties. Some varieties are released in more than one country— “Nets that work for all”
Progression of Variety Development

- Nurseries of different market classes and attributes: eg. Calima, Sugar, BioFORT, BILFA, ALS and drought
- On-station bean trials
- Participatory variety selection
- Demo of potential or release bean varieties
- Seed increase initiatives
### Bean varieties released across PABRA member countries (2009 -2013)

<table>
<thead>
<tr>
<th>Country</th>
<th>Stress</th>
<th>Niche market</th>
<th>Micro nutrient dense</th>
<th>Total</th>
<th>% release by Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>5</td>
<td>0</td>
<td>4</td>
<td>9</td>
<td>4.8</td>
</tr>
<tr>
<td>DR C E&amp;W</td>
<td>11</td>
<td>7</td>
<td>11</td>
<td>29</td>
<td>15.5</td>
</tr>
<tr>
<td>Rwanda</td>
<td>14</td>
<td>5</td>
<td>10</td>
<td>29</td>
<td>15.5</td>
</tr>
<tr>
<td>Uganda</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>7.0</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>5.9</td>
</tr>
<tr>
<td>Madagascar</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>9</td>
<td>4.8</td>
</tr>
<tr>
<td>Kenya</td>
<td>9</td>
<td>0</td>
<td>3</td>
<td>12</td>
<td>6.4</td>
</tr>
<tr>
<td>Malawi</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>5.3</td>
</tr>
<tr>
<td>Lesotho</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Mozambique</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td>4.3</td>
</tr>
<tr>
<td>S. Tanzania</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>13</td>
<td>7.0</td>
</tr>
<tr>
<td>Zambia</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>3.2</td>
</tr>
<tr>
<td>Swaziland</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>10</td>
<td>5.3</td>
</tr>
<tr>
<td>S DRC</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>4.3</td>
</tr>
</tbody>
</table>
### SABRN Countries with released high Fe and Zn content bean varieties

<table>
<thead>
<tr>
<th>Country</th>
<th>Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td>D R Congo - South</td>
<td>NUA 35, HM21-7, CODMLB001, ZKA93-10M, VCB81013, CODMLV059</td>
</tr>
<tr>
<td>Lesotho</td>
<td>NUA45</td>
</tr>
<tr>
<td>Malawi</td>
<td>NUA45, NUA59</td>
</tr>
<tr>
<td>Mauritius</td>
<td>NUA45</td>
</tr>
<tr>
<td>Mozambique</td>
<td>NUA45</td>
</tr>
<tr>
<td>Swaziland</td>
<td>NUA45, Zebra, Maasai red</td>
</tr>
<tr>
<td>Tanzania- S/Highlands</td>
<td>Loba-1, Uyole-04</td>
</tr>
<tr>
<td>Zambia</td>
<td>NUA45</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>NUA45, Cherry (100ppm Fe &amp; 54ppm Zn)</td>
</tr>
</tbody>
</table>
Integrated Seed System for wider impact using Improved Bean Varieties

1. Breeder seeds (NARS)
2. Basic seeds 1 (Partners)
3. Certified seeds (Private seed producers)
4. Non-certified seed
5. Farmers (large and small packs) using market and nonmarket channels

Traders
Engaging large scale seed private suppliers

- e.g. Demeter seed company in Malawi sales over 300 tones of bean seed through the subsidy program
Influencing Policy: Small Packs

Some seed companies in Zimbabwe are using small seed packs.
Research on Markets: domestic and international
Bean-based products for diverse utilization to improve nutrition

Creating business opportunities at community level
Monitoring & Evaluation

- Document evidence on impact
- Generate lessons for improved delivery
- Getting messages out to inform forward and end users
## Achievement in 2009 to 2014 phase

<table>
<thead>
<tr>
<th>OUTCOMES</th>
<th>Achievement</th>
<th>Target</th>
<th>% over target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple resistant varieties</td>
<td>15,517,785</td>
<td>12,000,000</td>
<td>29.3%</td>
</tr>
<tr>
<td>Integrated crop management options</td>
<td>7,379,905</td>
<td>5,000,000</td>
<td>47.6%</td>
</tr>
<tr>
<td>Micronutrient varieties and products</td>
<td>1,518,263</td>
<td>1,500,000</td>
<td>1.2%</td>
</tr>
<tr>
<td>Niche market varieties and value added products</td>
<td>2,111,869</td>
<td>1,500,000</td>
<td>40.8%</td>
</tr>
<tr>
<td>Women involvement &amp; participation</td>
<td>52%</td>
<td>36%</td>
<td>44.4%</td>
</tr>
<tr>
<td>Access to skills and knowledge to partners and farmers</td>
<td>97,903</td>
<td>86,880</td>
<td>12.7%</td>
</tr>
</tbody>
</table>
# Gender proportions in access to technologies, products and services

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to multiple stress varieties</td>
<td>59%</td>
<td>41%</td>
</tr>
<tr>
<td>Access to ICM technologies</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Access to micronutrient dense varieties and products</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>Access to niche market varieties and products</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Men and women beneficiaries accessing market services</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Knowledge</td>
<td>56%</td>
<td>44%</td>
</tr>
</tbody>
</table>

At 5 people per household (hh); phase a = 37.5 m and phase b = 95.5 m, making a total 133 m beneficiaries over 11 years (2003-2014).
Partnership is the basis for PABRA
A total of 418 partners between 2009-2014
Future perspectives

• Bean for improved nutrition security – more utilization of biofortified bean and bean-based products
• More emphasis on climbing bean for warmer environments – increased productivity
• Engage more and diverse partners in bean seed production
• Promote bean trade at local, regional and international levels – for better income
• Promote processed bean products – value addition (pre-cooked, canned and others) for the emerging middle class population & rising urban population
Thank you