Alliance

Bioversity International

CIAT
International Center for Tropical Agriculture
Since 1967 Science to cultivate change

PABRA
Pan-Africa Bean Research Alliance
Better Beans for Africa

TAAT
Technologies for African Agricultural Transformation

Technologies for African Agricultural Transformation (TAAT)

High Iron Beans (HIB) Compact

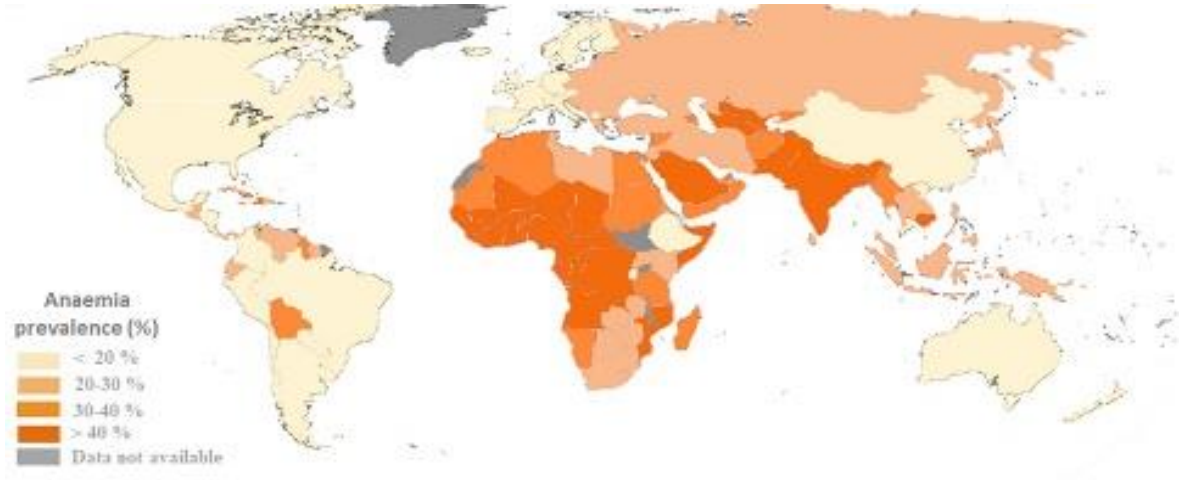
Josey Kamanda and Justin Mabeya

West Africa Agriculture Technology Fair: Mainstreaming Technology for Agricultural Development

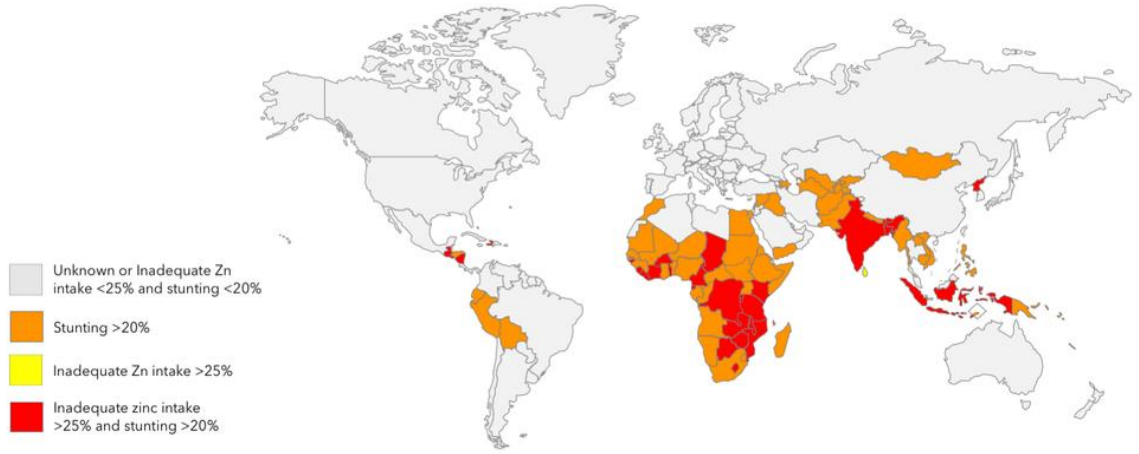
25-29 October 2021

Why High Iron Beans

- Beans are grown on more than four million hectares annually in Africa mainly by small holders
- Evolved from subsistence to market-oriented crop
  - One of the most actively traded commodities in E. Africa
- Beans are critical for food and nutrition security
  - Affordable source of protein, minerals, fiber and vitamins that offer several health benefits (over 30kg consumed on average per person each year in E. Africa).
- HIB Compact focuses on scaling biofortified beans, bred to address micronutrient deficiencies
  - Higher Iron and Zinc Content
  - Alleviates anaemia especially in women and children, improves children's cognitive and physical development; boosts immune function



Iron deficiency Anaemia (above, Muthayya et al. 2013) and Zinc deficiency (below, Wessells & Brown, 2012)



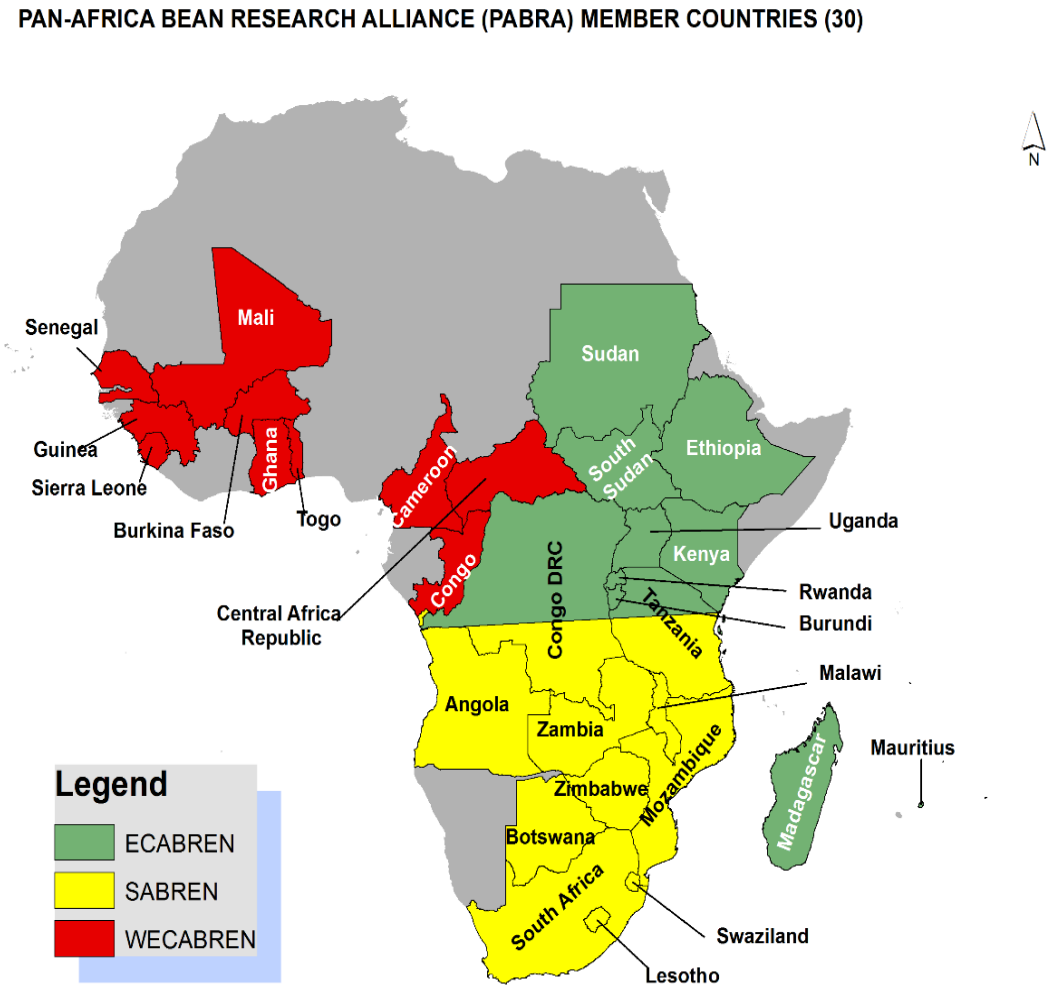
Operational Modality

PABRA Partnerships

Technologies for African Agricultural Transformation

PABRA Partnership for Impacts

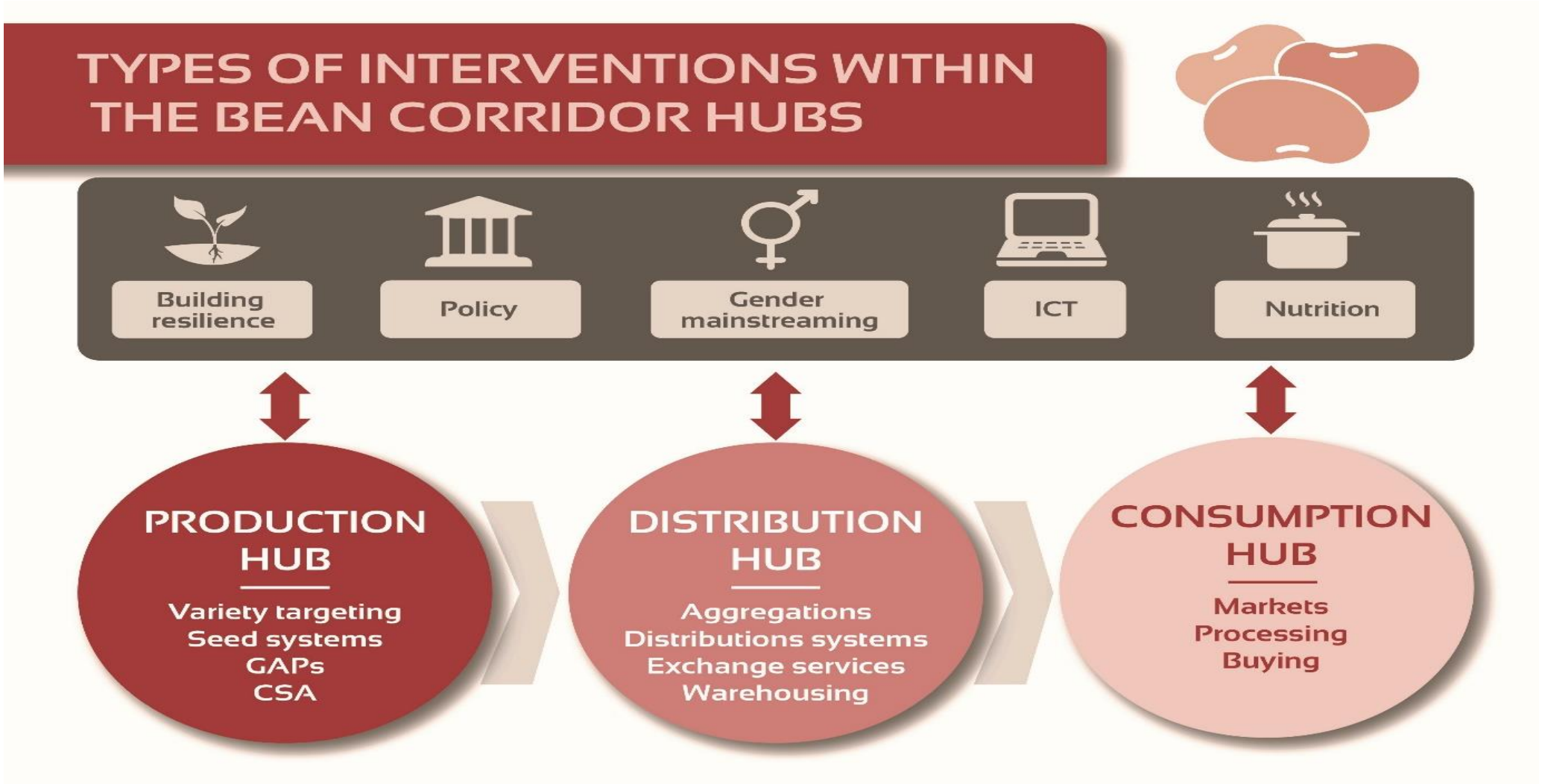
- 32 NARS (countries)
- 570 partners improving bean production
  - Private sector including seed companies
  - Public sector
  - Universities
  - NGOs
  - Processors
  - CBOs



Operational Modality

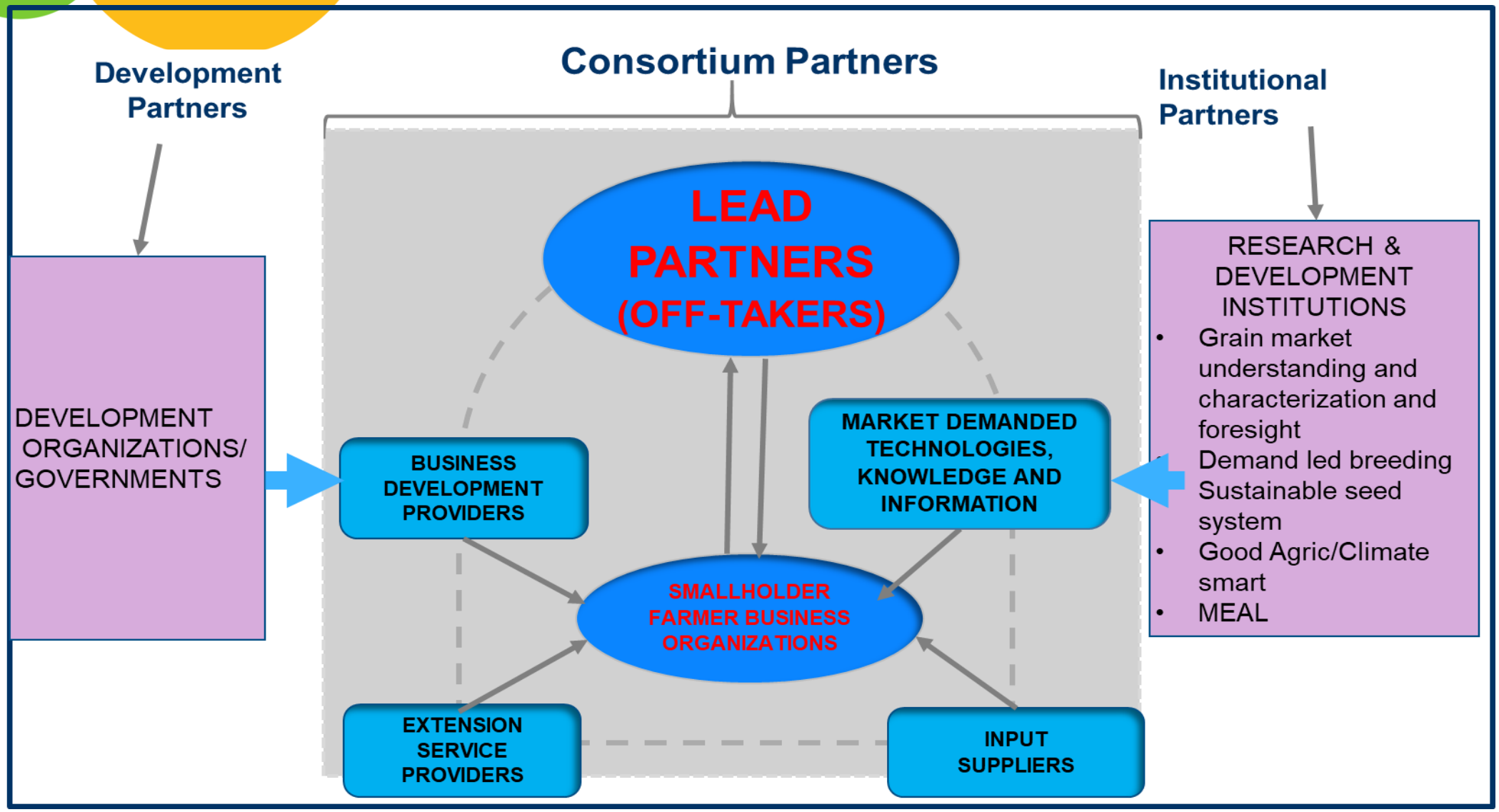
Commodity Corridor Approach

Technologies for African Agricultural Transformation



Technologies responding to client demands

Technologies for African Agricultural Transformation



Technologies - HIB varieties

Country	Number of Varieties Promoted	Names of Biofortified Varieties
Kenya	4	Angaza, Nyota, Faida, Metameta
Uganda	5	NAROBEAN 1, NAROBEAN 2, NAROBEAN 3, NAROBEAN 4C, NAROBEAN 5C
Tanzania	3	JESCA, Selian 14, Selian 15
Burundi	3	MAC 44, RWV 1129, MOORE88002
DR Congo	5	MAC 44, HM 21-7, RWR 2154, NAMULENGA, RWV 1129, MAC 44
Rwanda	5	RWV 2269, RWV 2887, RWV 2361, RWV 3316, MAC44
Zimbabwe	3	NUA45, NUA 764, Cherry, Sweet Violet
Malawi	3	NUA 35, NUA 45, NUA 59

Technologies - Market classes of the varieties

Red mottled

Red kidney

Speckled sugar

Rosecoco

Green yellow

Yellow

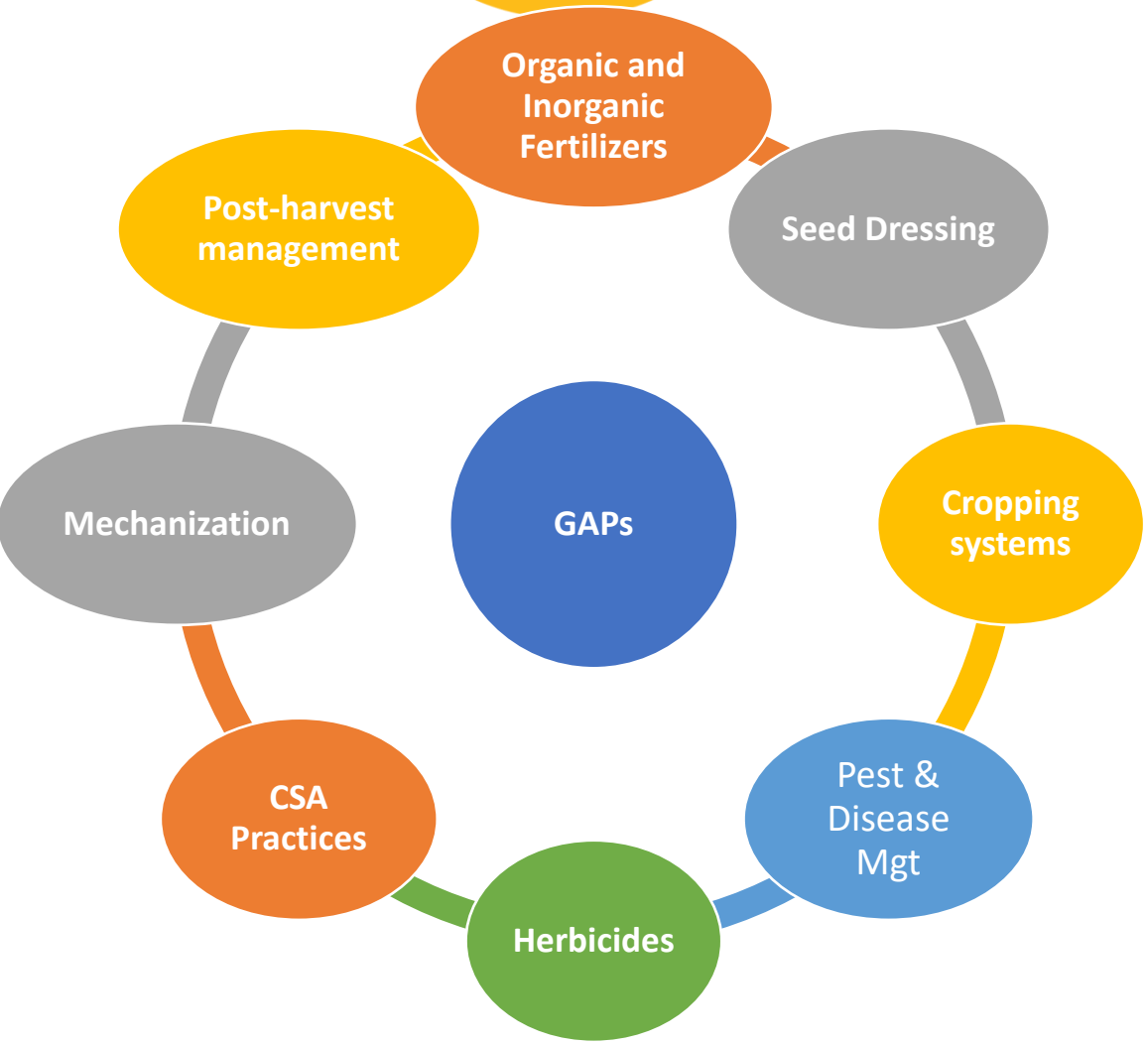
Navy (white)

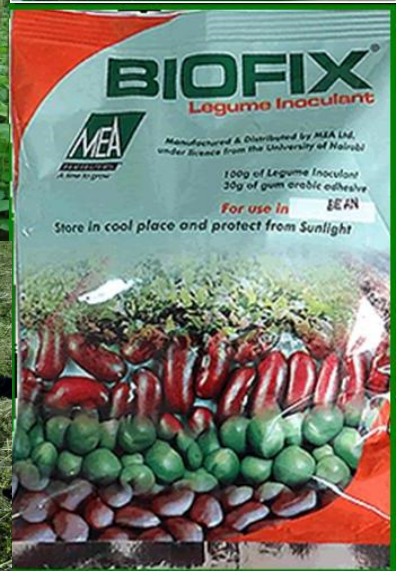
Small Red

Pinto

Technologies - Good Agricultural Practices

Technologies for African Agricultural Transformation

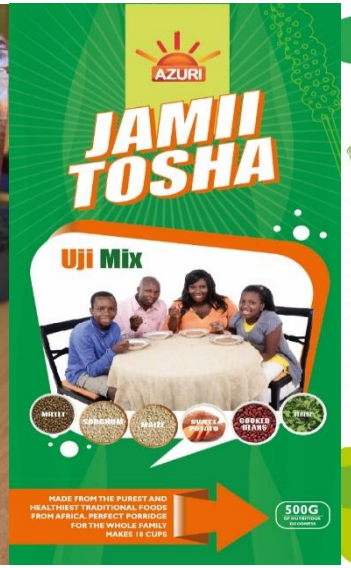


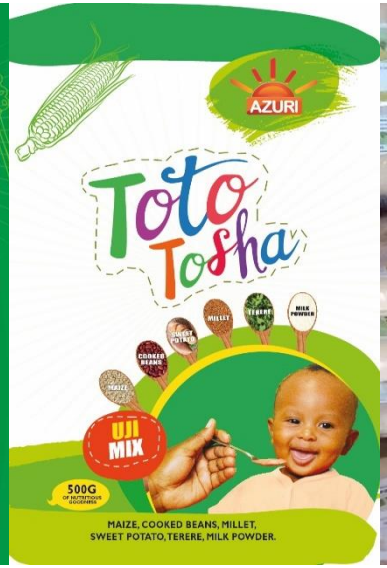


Technologies - Value-added products
Pre-Cooked Beans and Bean-based Flours

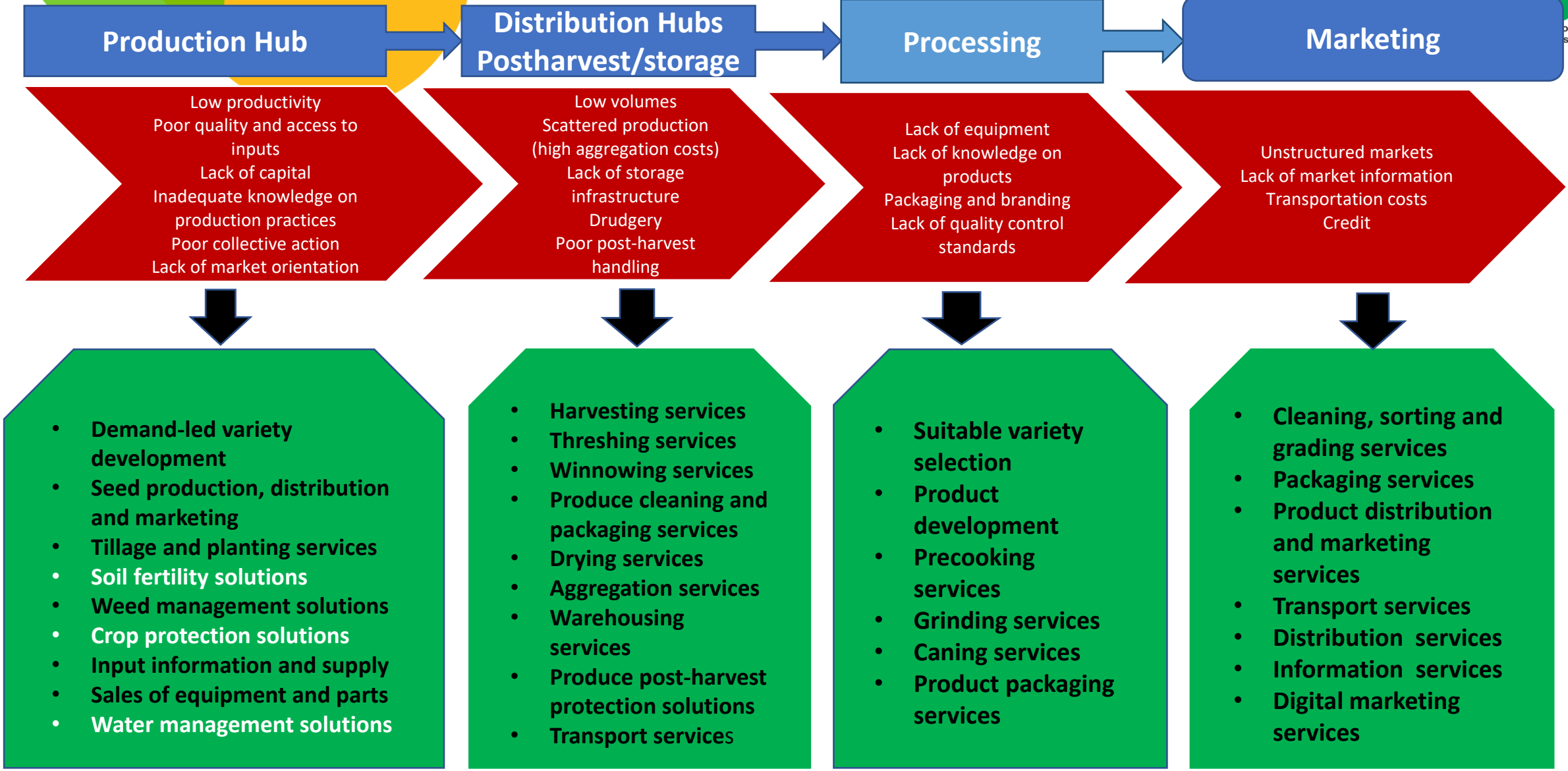
Technologies for African Agricultural Transformation

- Consumers increasingly seeking affordable, healthy but easy to cook foods especially in urban areas
- Supporting private sector in development and promotion of value-added HIB products
- Recipe assembling, fine tuning, sensory evaluations
- Capacity building on standards in collaboration with standards bureaus
- Youth job opportunities in aggregation of raw materials and marketing of products





Business Pathways for Commercialization

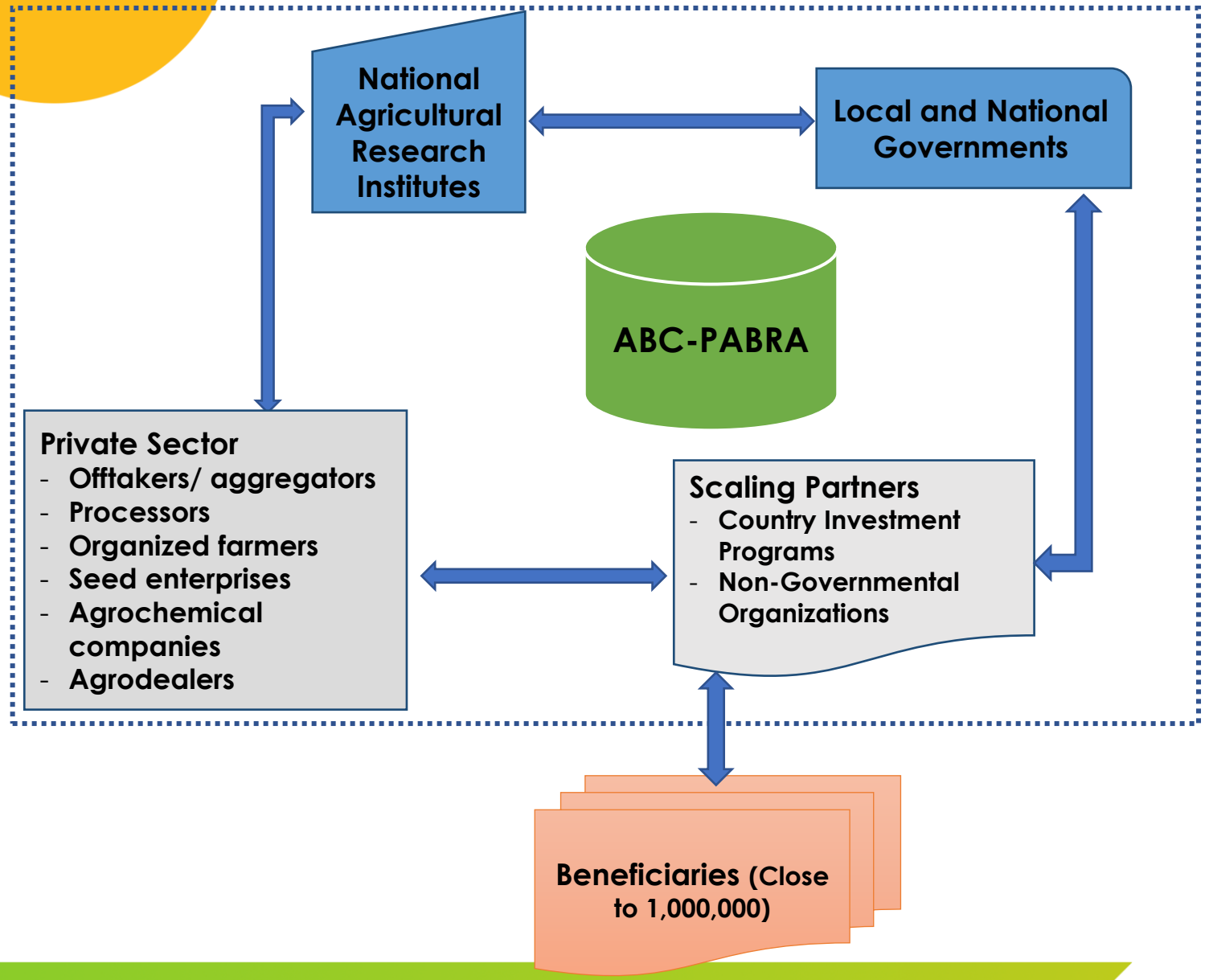


RTDI - Catalyzing Partnerships for Scaling HIBs

Technologies for African Agricultural Transformation

- Varieties
- Breeder seed
- Foundation seed
- ICM Practises (input use)

- Input market
  - Certified seed
  - Fertilizer
  - Herbicides
  - Mechanization services
- Output market
  - Grain sales
  - Value-added products
- Awareness raising/ demand creation



- Stakeholder mobilization
  - Business platforms
  - Policy dialogues
- Awareness raising/ extension
  - Demonstrations
  - Field days
  - Trade fairs
  - Local GAP charts, brochures, flyers
  - Audio and video messaging
- Schools feeding programs
  - Nutrition: Physical & cognitive development, reduced anaemia
  - Outreach to communities

Creating an Enabling Environment
Engaging Governments as Primary Scaling Partners

Some Key Achievements

Technologies deployed

- 31 market-preferred, high yielding, climate-smart and nutritious HIB varieties:
- Integrated Crop Management Practices (GAPs)
- Value-added Bean Products
- Over 10,000 campaigns or promotional activities

Seed production

- **3,547 MT** of Early Generation Seed (Breeder and Basic)
- **10,923 MT** of Certified Seed

94,500 people trained

94 new entrepreneurs engaged into (ASMEs)

967,000 beneficiaries across eight countries (**47% women**)

Production increase

- In Zimbabwe, HIB varieties and (GAPs) increased productivity in the intervention sites to **1-1.4t/ha up from 0.6 t/ha.**
- **131,081 MT** of additional food across 8 countries

Catalyzing additional investments in scaling HIB technologies

- **USD 920,018** leveraged for Compacts to provide services to country programs
- **USD 2,904,016** leveraged from other independent initiatives (donors, public sector, private sector) in-kind and cash-based contributions

Key lessons in scaling HIBs and associated technologies

Technologies for African Agricultural Transformation

- **Awareness creation:** Nutritional benefits of HIBs, GAPs for enhanced productivity, opportunities in value addition – consumers, farmers, private sector, policy etc.
- **Structuring markets in the bean corridors**: grain demand (offtakers), linkages with producers, input and service providers
- **Facilitating organized supply chain of quality seed** of HIB varieties through public-private partnerships
- **Inculcating a commercialization mindset**; (i) Catalyze private sector interests and investments in product and service provision along the value chain; (ii) supporting NARS to broaden partnerships
- Enhanced **engagements with governments:** country programs, local governments to co-invest in scaling HIBs
- **Inclusion of women** (especially in value addition) and **youth** in (service provision)


Alliance
Bioversity International
CIAT
International Center for Tropical Agriculture
Since 1967 Science to cultivate change
AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT
TAAT
Technologies for African Agricultural Transformation
THANK YOU
PABRA
Pan - Africa Bean Research Alliance
Better Beans for Africa
IITA
Transforming African Agriculture
CORAF