Typical Green Revolution vs. Sub-Saharan Africa’s Immense Diversity

- 49 Countries
- Major Agro-Ecologies from Sea Level to >2,500 MASL
- > 1,000 Languages
- 17 Major Food Crops (maize, sorghum, rice, millet, beans, cowpea, banana, cassava, sweet potato, Irish potato, tef, wheat, groundnut, fonio, faba bean, yams, taro)
CROPPING SEASONS IN SELECTED COUNTRIES

January February April May July September October December

Uganda
Tanzania
Tanzania(No)
Rwanda
Nigeria
Ghana
Ethiopia
Mozambique
Mali
Malawi
Kenya
Burkina Faso

First Season
Second Season
Program for Africa’s Seed Systems (PASS) Value Chain

R&D (Public Sector)  Production and Marketing (Private Sector)

Education
- Identify strongest univs.
- Establish grant support
- Recruit top-level fellows
- Curriculum oversight
- Thesis research oversight
- Re-integrate students

Breeding
- Identify breeding teams
- Develop breeding strategy
- Establish grant support
- Breeding oversight
- Link breeders to SC’s
- Assist commercialization

Production
- Identify seed enterprises
- Est. prod., market strategy
- Establish grant support
- Coordinate BDS training
- Monitor prod’n, marketing
- Link to investment funds

Delivery
- Identify service providers
- Establish grant support
- Oversee training
- Oversee credit guarantee
- Link AD’s to seed co’s
- Create AD links to farmers

2017
141,000
MTS

Other Results:
- 670 new crop varieties developed and released; 431 commercialized;
- 501 MSc/PhD’s graduated;
- 114 private, African seed companies established;
- 19,174 agro-dealers trained, in operation.

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Benefits of Improved, Adapted Groundnut Varieties in Uganda

On the left, improved variety bred by Dr. David Okello, NARO

On the right, Farmer’s Variety
Benefits of Improved, Adapted Sorghum Varieties in West Africa

Left, local land race.

Right, hybrid sorghum variety developed by Dr. Aboubacar Toure, l’Institut de l’Economie Rurale.
Benefits of Improved, Adapted Bean Varieties in Rwanda

In the foreground, improved bush bean variety developed by Augustine Musoni, Rwanda Agricultural Board.

Musoni with improved climbing bean variety.
670 New Crop Varieties Bred and Released

- Maize: 177
- Cassava: 86
- Sweet potato: 65
- Sorghum: 36
- Rice: 90
- Beans: 82
- Cowpea: 46
- Groundnut: 26
- Soybean: 14
- Pigeon pea: 10
- Faba bean: 8
- Wheat: 6
- Zeff: 4
- Banana: 6
Scaling Up Improved Seed Supply via Private, Independent, African Seed Companies

Maslaha Seed Company, Nigeria

Producing certified seed of: maize, rice, pearl millet, sorghum, and cowpea.
Equator Seeds, Uganda

Producing certified seed of: maize, beans, rice, soybean, sorghum, sesame, cowpea and finger millet.
Peacock Seeds, Malawi

Producing certified seed of: maize, beans, cowpea, and groundnut.
African Seed Companies, Cont.

Faso Kaba Seed Co, Mali

Producing certified seed of: maize, cowpea, sorghum, millet, rice, and groundnut.
114 Seed Companies Operating Across 18 Countries

**Nigeria**
- Maina Seeds Limited
- Value Seeds Limited
- Madala Seeds Limited
- Seed Project Company Limited
- Da-Ali Green Seeds Limited
- Monoma Seeds Limited
- JERHUR

**Senegal**
- Senegalese Network of Farmers and Livestock Breeders’ Organizations (RESSOP)
- Coumba Nor Thiam (SCNT)

**Burkina Faso**
- EPC-SAC
- FAO Agriculture et Intarrits
- Societe Agro-Productions
- Neema Agricole Da Faso
- Entreprise et Promoteur de produits

**Liberia**
- Arjay Farms
- Greenstar
- BRAC

**Sierra Leone**
- Yeava Enterprises
- BRAC

**Ghana**
- Heritage Seed Company Ltd
- Jomaa Agro-Industry Ltd
- Meridian Seeds Limited
- Agri Commercial Services Limited
- Mabert Company Limited
- Lesokol Investments
- Isokuf Enterprise
- Areka Enterprises
- M&G Seeds Limited
- Savanna Seeds Services Company Limited
- Alpha Seed Enterprise

**Niger**
- FESA
- Huax
- La Sahelienne de Semences
- Gamorozon Ranch Sarl
- ASHERI

**Zambia**
- Risco
- Sabbath Year Economic and Win Win Agribiz Ltd

**Tanzania**
- Jambe Agro Company (JACL)
- Nambari Agricultural Company Limited
- Nkhata Seed Company
- Tropical Seed (EA) Limited
- Suba Agro-Tradeing
- Kipato Seed Limited
- IPDF Seed Company
- Northern Seed Company Limited
- Aminata Quality Seeds
- Agriseed Technologies Ltd
- Meri Agro-Tours and Consultants Co. Ltd
- Jumbe Company Limited
- Zanobia Seeds Limited
- Krishna Seed Company Limited
- Tanseed International Ltd
- Africa Seed Company Ltd

**Rwanda**
- Milo
- AGRIPLUS SARL, Milo
- SCORIOZA Sarl
- Badar Agricole Sarl
- Societe Nakobi-SARL
- Composite 2000
- Faso Rulo
- Doni Ka Fa SARL

**Ethiopia**
- MATAO
- Nile Seed Company PLC
- Hadda Seeds
- Amafil International Research and Development
- Ameyatu Mekonnen Farm
- Gadaa Gobena Commercial Farm
- Ane Agro-Industry PLC
- Ambeti Seed Enterprises
- Somali Region Seed Enterprises
- Southern Seed Enterprises
- Omnia Seed Enterprises
- NORD Agricultural Development PLC
- Amrapur High Yield Varieties and Agricultural Products

**Kenya**
- Offen Seed Ltd
- Crip Africa Limited
- Drylands Seeds Limited
- Eldar Limited

**Malawi**
- Peacock Enterprises Limited
- Seed Tech Company
- Fermeu Farm Limited
- Premium Seed Company
- Global Seeds Malawi
- Migrant/Inva Seed Company

**South Sudan**
- AFFA Farm Holdings
- Maguel Seed Company Ltd
- South Farmers Company Limited
- Afriagro Seeds Limited
- Green Belt Seed Company Limited
- Century Seed Company Ltd
- Seed Grow Company Limited

**Uganda**
- OSi garden Seed Limited
- Ekuguru Seeds Limited
- Azonut Seeds (U) Ltd
- Perris Seeds Limited
- NASECO (1996) Ltd
- Farm Inputs Care Centre Limited
- Victoria Seeds

**Kenya**
- Stewards Globe Limited
- Kamano Seed Company Ltd

**Tanzania**
- AGRA

**Growing Africa**
- African Development Fund

**AGRA**
- Growing Africa
Varieties Released by Crop (670 Vars.)

- Maize, 177
- Cassava, 86
- Sweet potato, 65
- Sorghum, 36
- Beans, 82
- Groundnut, 26
- Soybean, 14
- Pigeon pea, 10
- Cowpea, 46
- Rice, 90
- Millet, 14
- Wheat, 8
- Faba bean, 4
- Chickpea, 2
- Banana, 6
5 Innovations That Helped to Scale:

1. Develop capacity at national level
5 Innovations That Helped to Scale:

2. Approach seed supply for smallholder farmers as a business
5 Innovations That Helped to Scale:

3. Train African seed companies to produce high-quality seed, at-scale, including hybrids.
Seed Companies That Have Purchased Seed Processing Equipment. Increase in or new capacity estimated at 8,000MT annual capacity per location. (33) Companies

Ghana

Mali

Niger

Nigeria

Ethiopia

Kenya

Tanzania

Uganda

Burkina Faso

Ghana

Mali

Niger

Nigeria

Ethiopia

Kenya

Tanzania

Uganda

Plant

Dryer

Value Seeds 10/13
Goldagric 10/13
Manoa Seed 8/13
PREMIER SEED (2) 1/12
DA-ALLGREEN 11/11
Pearl Seed 12/11
USAID-COOPS 1/14-(4)
Dryland Seeds(2) 8/11

Chris Kajiuka 5/13
Agri Seed 5/14
Western Seed 7/11

U of Nairobi 5/14
Africasia 6/14
Meru Agro 3/14

FASO KABA 7/11
M&B Seeds 10/11

Funwe 4/13
Peacock Enterprise Ltd 9/11

Seed Tech 8/11
Dengo Commercial 10/12

Sementes Nzara Yapera 10/12
Mozseed 6/14

NAFASO 6/11
Goldagric 6/11

Alheri 2/12
Boman Seed 3/13

USAID-COOPS 1/14-(4)

Dryland Seeds(2) 8/11

Fresco 2/13

Values Seeds 10/13

PREMIER SEED (2) 1/12

USAID-COOPS 1/14-(4)

Dryland Seeds(2) 8/11

Fresco 2/13
5 Innovations That Helped to Scale:

4. Increase farmer awareness of the value of higher-yielding seed and fertilizer.
5 Innovations That Helped to Scale:

5. Build marketing chains where farmers live
New Model for Scaling Technologies in Africa: Private Sector-led Extension

- Elements of a new approach include:
  - Trusted local advisory services;
  - Inclusive, “whole village” approach;
  - Small “sample” packs to reduce “adoption risk”
  - Practical technology demo’s under local conditions;
  - Partnerships between public and private actors, and farmers;
  - Farmer feedback via farmer field days.

Methodology: Advice on efficient use of inputs to improve soil/crop management
Funding Only the Most Direct Actions in Scaling Seeds Cuts out the Public Sector and Ignores the Need for New Technologies.
Lessons Learned on the Journey to Scaling Technologies

1. Public – private partnerships actually work, and take it further;
2. Political will is critical, and can be nurtured;
3. There is huge untapped potential for SME growth in African agri-business;
4. National agricultural research systems are a huge source of innovation;