Rice Sector Development

Increasing Production and Building a Sustainable Seed System in Africa

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Presentation Outline

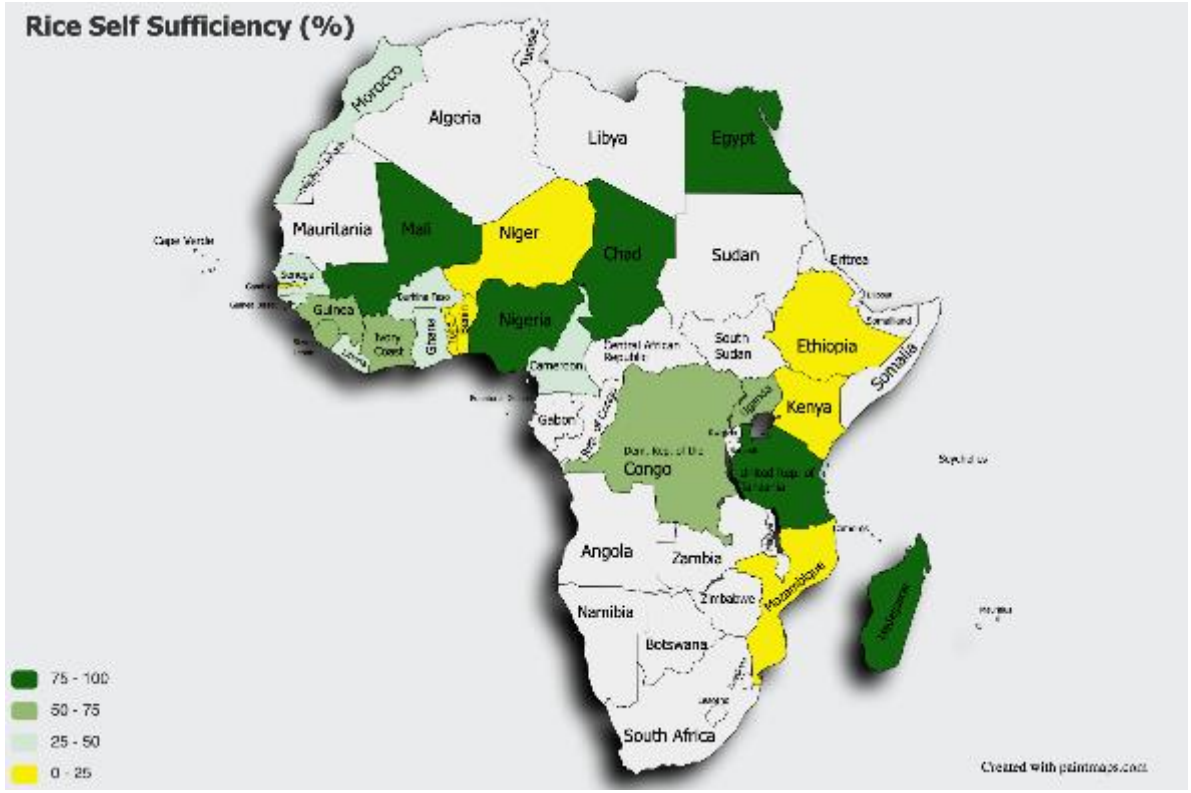
- ❑Development Objective
- ❑Rice Self Sufficiency
- ❑Rice Compact Technologies and Mechanism for Upascale
- ❑Climate Smart Rice Varieties
- ❑Building Sustainable Seed System and Return to Investment
- ❑Excellence in Agronomy (with the Rice Digital Tool)
- ❑Regional Initiatives in the Rice Sector

TAAT compact objectives

Development Objective

Rapidly expand access of smallholder farmers, majority women, to high yielding agricultural technologies to improve their food production, assure food security and raise rural incomes, and deliver regional public goods by scaling up agricultural technologies across similar agro-ecological zones".

Rice Self Sufficiency - 26 High Rice Proucing Countries



TAAT Technology

ORYLUX 6 AROMATIC

ORYLUX 1, ORYLUX 2, ORYLUX 3, ORYLUX 4, ORYLUX5, and ORYLUX 6

High yield, good grain quality, acceptable organoleptic properties, and consistent performance,

Derived from the cross WITA 1 × Pusa Basmati

- **Agronomic characteristics**
- **Days to heading (50%): 81**
- **Days to maturity:100**
- **Potential yield (kg ha^{-1}): 6500**
- **Weight of 1000 grains (g): 19.5**
- **Disease resistance: Medium**
- **Insect resistance: Medium**
- **Aroma: Aromatic**

Geographical Coverage

- **Lowland/irrigated ecology in all rice growing countries in Sub Sahara Africa**

Commodity

- Rice

Value Chain Position

- Seed; Paddy, Processing and Marketing

Problems Solved and Benefits

- Good grain quality
- High consumer preference
- Strong contributed to import substitution
- High yielding potential

What is it for:

- **Seed producers, farmers, millers, women processors, marketing enterprises**

Cost /ROI

- Sengal: USD 1,247 off-season irrigated; USD 921 for rainy season crop.
- Mail: USD 631 for off-season production under irrigation and USD 841 for rainy season production

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Rice Compact Technologies and Mechanism for Up-Scale

Development Objective: Rapidly expand access of smallholder farmers, majority women, to high yielding rice technologies to improve their food production – Assure food security and raise rural incomes

Technologies to Deploy

1 Yield Boosting 2

- Improved and climate-smart rice varieties and hybrids
- Good Agricultural Practices (GAP) and RiceAdvice

3 Post-Harvest & Market Acces 4

- Improved threshing methods
- Rice processing and market access

Technology Deployment & Adoption Approaches

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❑ Value Chain Partnership for Upscale through the IPs

- ❑ Policy Makers (MoA)
- ❑ Research and Extension
- ❑ Seed Enterprises
- ❑ Rice Mills and Women Processing Groups
- ❑ Equipment Fabricators
- ❑ Farmer Organizations
- ❑ Projects/NGOs
- ❑ Micro-finance
- ❑ Market Enterprises
- ❑ Media

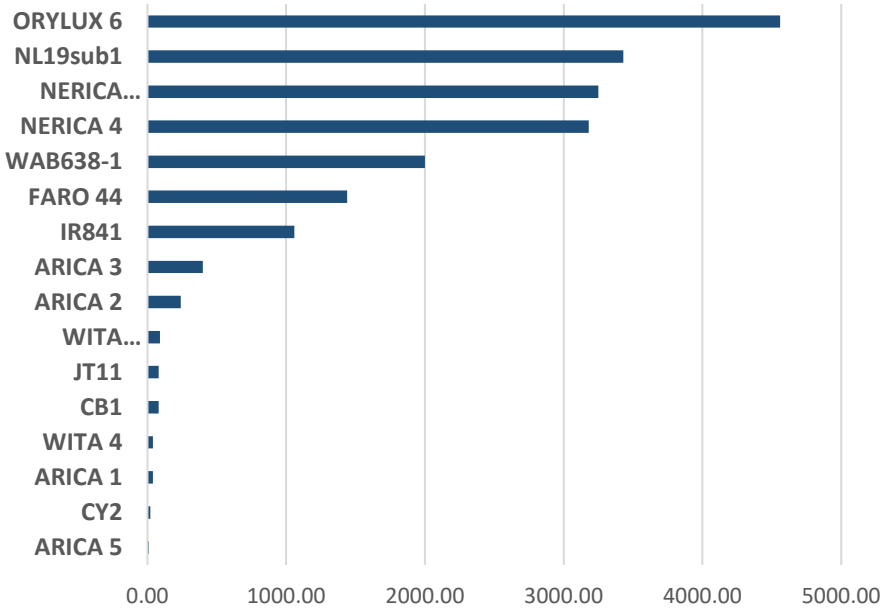
Variety performance compared to land races and associated technologies

Rice - Climate-Smart Varieties and Hybrids

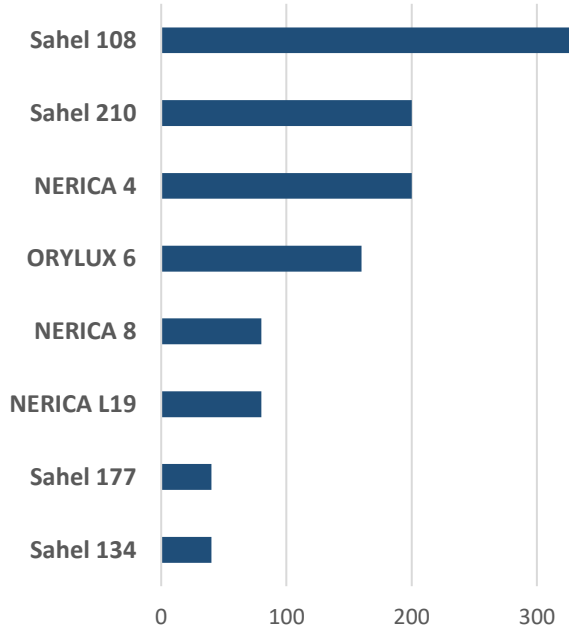
Variety	Yield (t/ha)	Ecology	Days to Maturity	Special Attributes
NERICA L19sub1	6.0-7.0	Lowland/ Irrigated	111	Iron toxicity tolerance ; Flood tolerance
NERICA 4	3.0-4.0	Upland	95-100	Drought and Striga tolerant.
ORYLUX 6	6.0-7.0	Lowland/ Irrigated	100	Aromatic long grain and good grain quality
ISRIZ-07	8.0-12.0	Irrigated/ Lowland	110	Adapted to the Sahel conditions
Sahel 108	10.0	Irrigated/. Lowland	105-117	Adapted to the Sahel conditions
ARICA 3	7.9	Lowland	101	Yield higher than their NERICA analogues
Hybrids	10.0-14.0	Irrigated/. Lowland	105-110	High yields

Highly Demanded Seeds of Climate Smart Varieties

Humid & Savannah Regions: C d'Ivoire Centre



Sahel Region: Senegal Centre



Hybrid	Country	Yield Range (T/Ha)	Yield Advantage over Inbred Varieties
AR032H, AR051H, AR606H, AR708H	C. d'Ivoire	4.0 - 9.40	65-135%
AR051H, AR606H, AR647H, AR708H	Mauritania	9.0 – 14.40	50-121%
AR051H, AR606H, AR708H	Nigeria*	8.5 – 11.00	40-100%
AR051H (CASL), AR606 H	Senegal*	5.8- 7.30	40-60%

Hybrid Demonstrations

Excellence in Agronomy with RiceAdvice Digital Tool

Smart-Valleys Technology

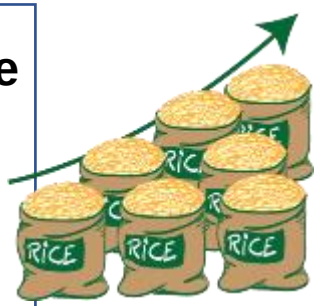
- **Q**uality Seeds,
- Nursery management
- Smart-valley soil & water management;
- Plant spacing; weed and insect control,
- Soil fertility management
- Harvesting and post-harvest management)
- Rice-Fisheries integration

GAP led to yield of 1.5-2t/ha 3.3 t/ha in upland and from 3.5 to 7.5 t/ha in lowland by farmers in Madagascar

Benefits of using RiceAdvice

Farmers using RiceAdvice report

- Yield gains of 0.6 up to 1.8 t/ha



- Income gains of US$100 up to $200 per ha

It also improves farmers' knowledge of good agricultural practices (GAPs)

Joshua Jonathan – IP Nasarawa State, Nigeria

By adopting GAP, RiceAdvice and improved seed, I increased my rice yield from 4.3 t/ha to 6.7 t/ha (56% increase) on the same farm.

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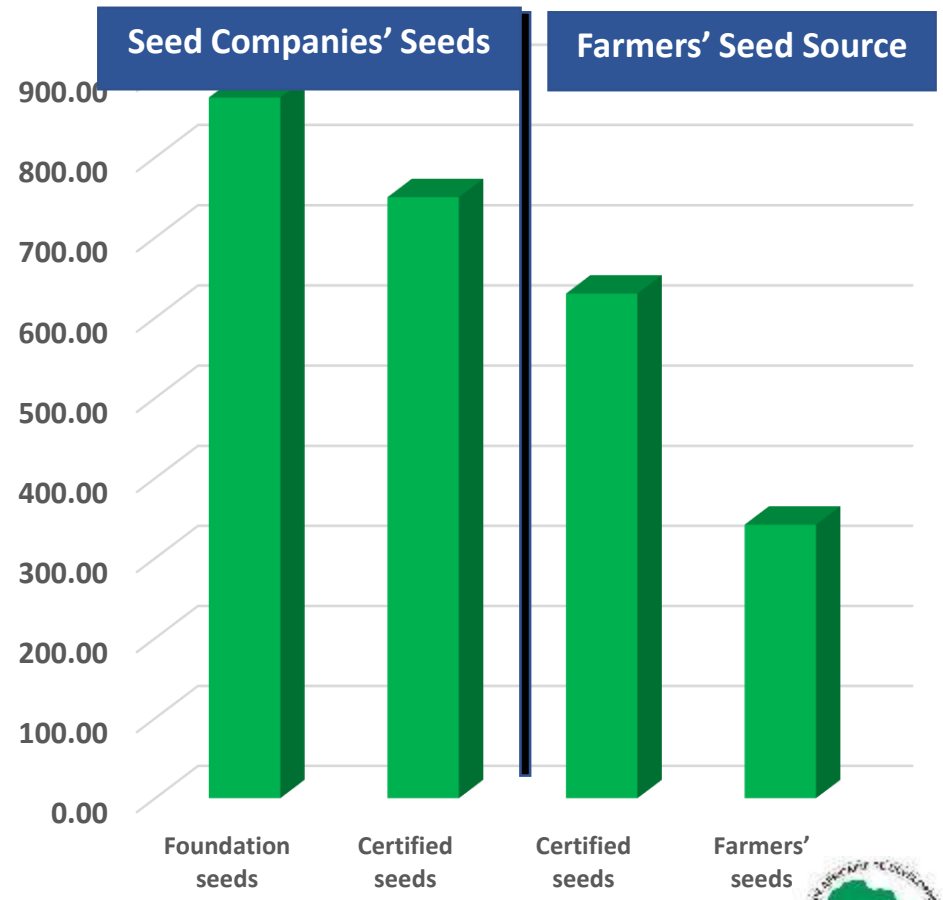
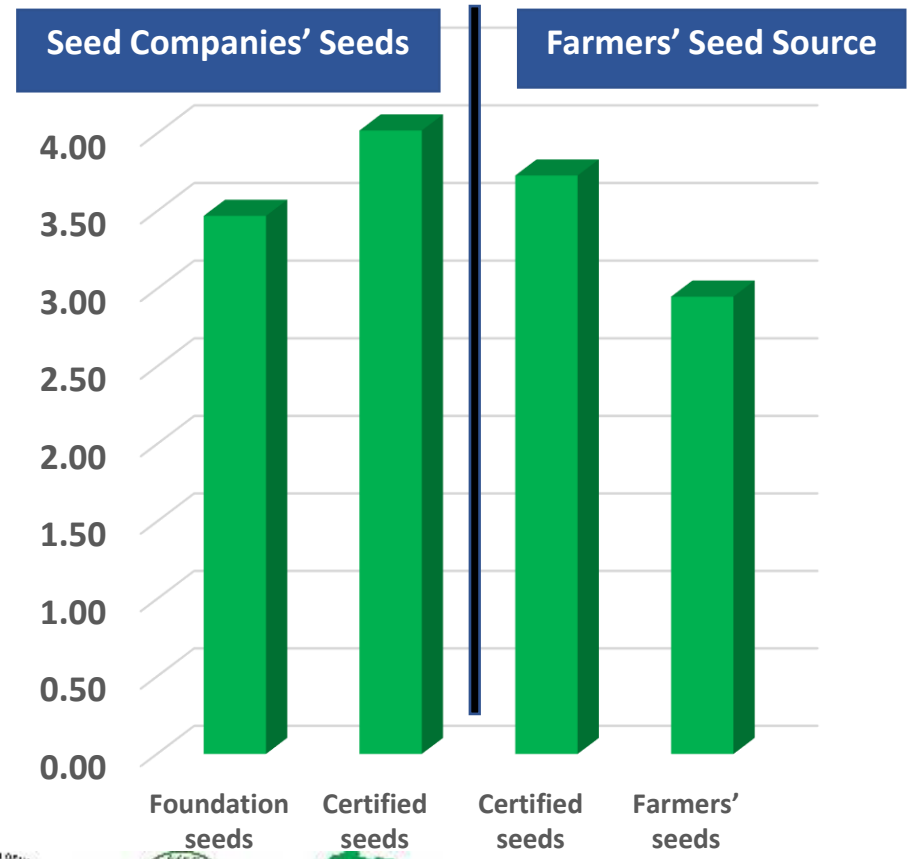
Return on investment

Net Profit
Cote, d'Ivore, Benin and Mali



Benefit - Cost
Cote, d'Ivore, Benin and Mali



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Building Sustainable Seed System

Build capacity and governance in the seed sub-sector	Stakeholders
1. Frameworks for the establishment of the national governance system (National Seed Committee)	Seed sector stakeholders
2. Provision of training on:	
❑ *2.1. Harmonization of regional seed policy and regulations*	Research & Quality Control and Certification Agency
❑ *2.2. Seed production practices to achieve required standards for regional seed trade*	Research & Private Sector Quality Control and Certification Agency
❑ *2.3. Seed quality control and certification procedures*	Quality Control and Certification Agency \
3. Development of country seed roadmaps	
4. Support to Identification, procurement and installation of appropriate equipment	Quality Control and Certification Agency
5. Deployment of genetic materials	INERA/SNV

Support to Women Processors to Enhance Market Access

ASI Thresher being Demonstrated at the IP in Nasarawa State, Nigeria

ASI Thresher is smaller size, pre-cleans paddy, affordable small-scale farmers; easy to move from field to field; gender friendly

- ❑ Mechanically separates rice grains from panicle without damaging the grains.
- ❑ Adapted to the conditions of manual harvesting.
- ❑ Reduces post-harvest losses (estimated at 35% when manual)
- ❑ High threshing capacity (2.5 ton/h), Low operating costs, reduces drudgery

- ➢ Women using the GEM parboiling technology do not suffer from heat burns and smoke related sicknesses exposure
- ➢ Provides hygienic conditions, reduces drudgery and eliminates the use of firewood (environmental-friendly)
- ➢ Parboiled milled rice has high contents of B-Vitamins, minerals, slower digestive and lower glycemic properties and has a premium price, compared to white milled rice.
- ➢ In the IP in Nigeria, over 65 million Naira (US$181,800) was generated in 2019 by women group, from quality parboiled rice.

Parboiling Rice by RINA SARL Enterprise in Cote d'Ivoire – conditioning paddy for milling

Rice processed by Women Group on the Glazoue IP in Benin ready for market

Key Achievements – TAAT I

- **79.1 MT of breeder seeds** produced; 37 t deployed and multiplied into **1,902.45** MT of foundation seed for producing Certified seeds in 15 countries
- **17 Technologies** deployed in targeted specific agro-ecological zones - improved varieties and post-harvest technologies
- **2 968 345 beneficiaries** accessed and effectively used technology products and services
- **2 748 I**nformation and visibility materials disseminated

- 32% increased income household (USD)
- 54% increased agricultural productivity in zones of intervention (2.2 to 3.4 T/Ha)
- 0.94 Million MT Increased volume of food produced (additional)
- 622 Million USD - Value of additional production (US$)

Outcome rating

Contributing to the SDGs

1. No Poverty
2. Zero Hunger
5. Gender Equality
8. Decent Work & Economic Growth

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Regional Initiatives in the Rice Sector, Mostly New

Initiative	TAAT 1 (2018 – 2021/22)	TAAT II (2023 – 2025)	AEFPF (2023 – 2025)	SEAF (2021-2022)	REWARD (Yet to Start)	Country Compacts-Dakar2 (Yet to start)
Technologies of Focus	*Climate Smart varieties; Seeds, GAP, Digital solutions, Post-Harvest, Training*	*Climate Smart varieties; Seeds, GAP, Digital solutions, training*	*Agri-Inputs*	*Seeds*	*ECOWAS Regional trade (seed and processed rice)*	*Improving produtivity and epanding production*
Beneficiary Countries	Benin Burkina Faso Cameroon Cote d'Ivoire DRC Gambia Ghana Guinea Bissau Madagascar Mauritania Mali Nigeria Senegal Uganda	Benin, Cameroon Cote d'Ivoire Ghana Madagascar Senegal Uganda Burkina Faso Gambia Guinea Guinea Bissau Liberia	Burundi Cameroon CAR Cote d'Ivoire DRC Gambia Guinea Bissau Kenya Liberia Madagascar Niger Senegal Sierra Leone South Sudan Togo	Burkina Faso CAR DRC Liberia Nigeria Sierra Leone	Benin Burkina Faso Cape Verde Cote d'Ivoire Ghana Guinea Guinea-Bissau Liberia Mali Niger Senegal; Sierra Leone; The Gambia Togo.	Burundi Cameroon CAR Chad Cote d'Ivoire DRC Ghana Liberia Gambia Malawi Niger Nigeria Sierra Leone South Sudan
	15	12	15	6	15	14

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Country Food and Agriculture Delivery Compacts: 14 Countries with rice value chain in their compacts

- **Outcomes from the BoardRooms:**

An overview of national and regional mechanisms and projects **currently driving progress**

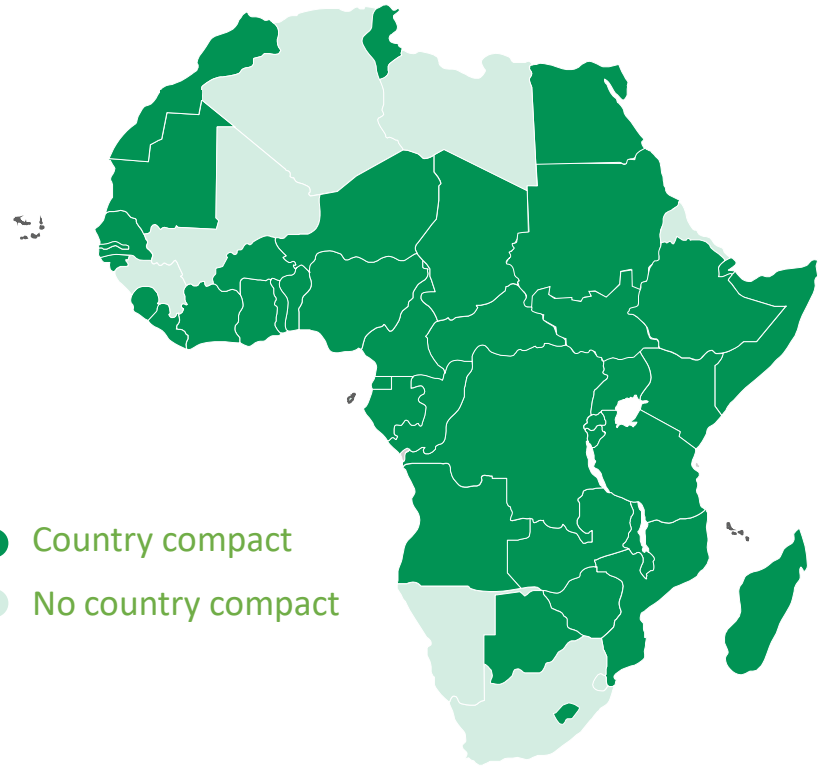
A clear narrative of the country's **objectives, production gaps, barriers, and opportunities** for development

An understanding of the **financing and technical assistance required** to achieve objectives, including the volume of public investment committed by RMCs

Commitment from Development Partners

Announcement of Presidential Delivery Councils to be chairs by Heads of State and include Ministers of Finance and Agriculture

41 Countries Compacts



Behind the Compacts is a Replicable Public Sector-Enabled and Private Sector-Led Model for Self-Sufficiency in Food Production

Achieving staple self-sufficiency and moving to the top of export-oriented value chains will require countries to :

1. Improve **productivity,** Case Studies of Ethiopia and Sudan on Wheat
2. Realize added **value** of production
3. Unleash **private sector-led** growth

We already have much of what it takes…

- The **technologies and practices** needed for Africa to feed itself already exist
- In recent years, actors have developed **replicable platforms** capable of taking innovations to scale, alleviating value chain bottlenecks, creating market infrastructure, and sustaining private sector investment

What is needed now is public sector-enabled, business-led, growth that can bring this package to scale. This will require governments to drive progress, coordinating the activities of diverse stakeholders around actioning the enablers.

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TAAT
Technologies for African
Agricultural Transformation

Thank You

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