

TAAT Maize Technologies for Enhanced Productivity and Food Security in Africa



Technologies for African
Agricultural Transformation



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TAAT Maize Compact Objectives

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Increased uptake and Use of high yielding climate-smart maize technologies

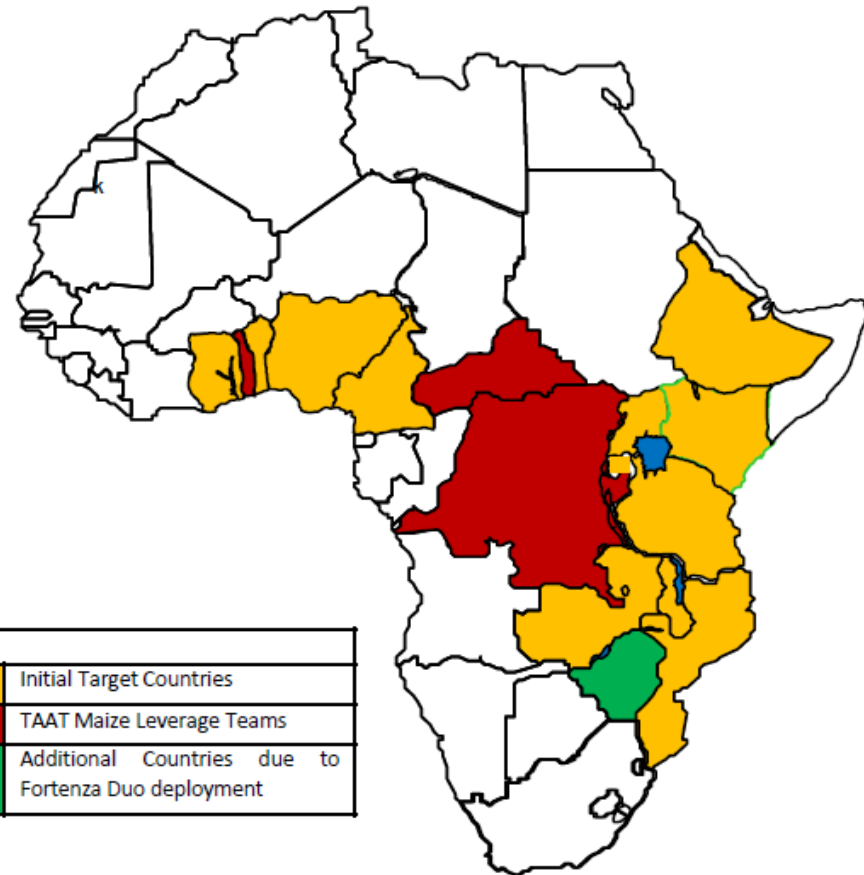
Complementary inputs + GAPs

Increased maize productivity in Africa

Increased number of women and youth entrepreneurs and employment in the maize value chain.

Increased profit margins along the maize value chain through improved market linkages and value addition

Countries Covered



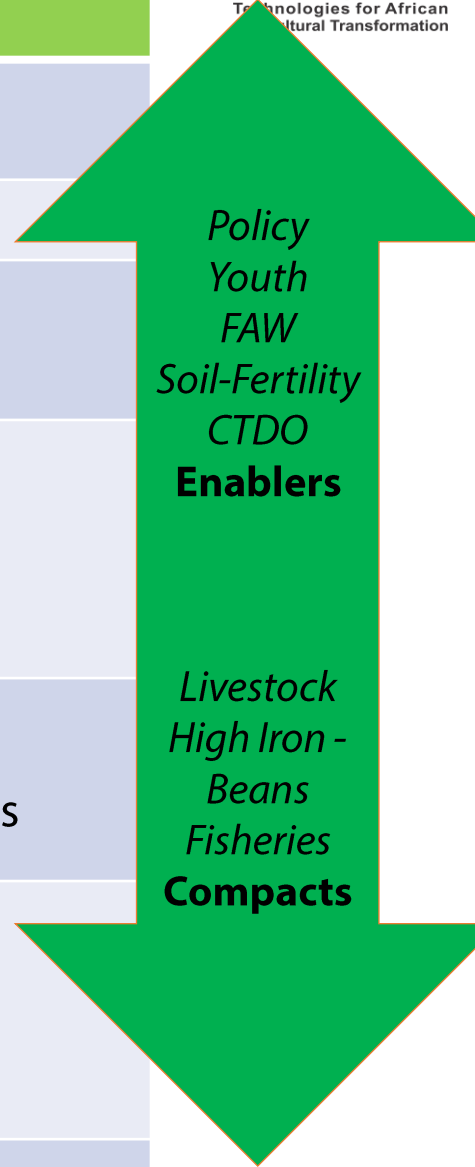
Code	
	Initial Target Countries
	TAAT Maize Leverage Teams
	Additional Countries due to Fortenza Duo deployment

Strong Partnerships for Delivery of Maize Technologies



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Partner	Role of the Partner
African Development Bank (AfDB)	✓ Investor
AATF/IITA	✓ Overall Coordination of the Maize Compact in Africa
NARS	<ul style="list-style-type: none"> ✓ In-country supervision of maize value chain activities ✓ Promotion and scale out of maize technologies
CGIAR/Technology Providers	<ul style="list-style-type: none"> ✓ Provision of new maize varieties and technologies ✓ Supply of agricultural inputs ✓ Farm machinery/service providers
Commodity associations/Farmers organizations/Youth groups	<ul style="list-style-type: none"> ✓ Implementation of activities in the field ✓ Fostering of linkages along the maize value chains in specific countries
Seed Companies/private sector	<ul style="list-style-type: none"> ✓ High quality seed production and supply ✓ Strong partnerships for seed system development ✓ Promotion and scale out of maize technologies
Finance/Credit Providers; Off-takers	✓ Finance, market linkages, storage, post-harvest and value addition



Partnerships for Scaling New Elite Climate Smart Varieties



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The Interim Executive Bureau of the Cameroon Maize Association. PHOTO/IRAD



Seed processing plant, Kenya

**DroughtTEGO (TSAVO WE3106)
distributed to farmers in Western
Kenya, August 2021**



**WE6103 (Champion F1) in the
market in Uganda**

Scaling New Elite Climate Smart Varieties



- ✓ **40 seed companies** engaged to produce and market **24,485 MT** high quality certified seed of **48** climate seed varieties
- ✓ **169 MT** of basic seed deployed (involving Foundation Seed Entities e.g., **QBS** – foundation seed company)
- ✓ **2.4 million farmers** benefited from the climate smart varieties
- ✓ **104,316 small seed packs** distributed to over **104,000** smallholder farmers for on-farm trials
- ✓ **5,045** demo plots established, and **866** field days conducted (attended by **39,436** farmers) – to create awareness and promote adoption of maize technologies.

- Principally **Private Sector led** - for sustainability
- Deployment of climate smart maize varieties from **WEMA (DroughtTEGO), DTMA, IITA** and **NARS** breeding programs.
- Other components integrated in the programme
 - ✓ Striga resistance, MLN disease tolerance
 - ✓ Enhanced nutrition – Orange maize
 - ✓ FAW treatment (Fortenza Duo)



KALRO deploying DroughtTEGO hybrids in Kenya, July 2020

Technical and Stewardship Support to Farmers on GAPs



- ✓ **866** field days conducted (attended by **39,436** farmers) – to create awareness and promote adoption of maize technologies, **train** farmers on GAPs including post-harvest management
- ✓ **979,406ha** cultivated using climate smart maize seed



Farmers received NPK 27:13:13 fertilizer (25 kg each) for FAW on-farm trials, Nigeria, 17/02/2021



Mechanized operations



On-farm assessment of FD performance against FAW in Zambia, January 2020



Training session on good agricultural practices (GAPs) during a field day in Uganda, 2020



High productivity

Farmer Engagement and Market Feedback



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H12 (WE2112) demo in Mbeya, Tanzania, 2020
Good attributes: Drought tolerance, drooping ear & tight husk cover



Post-harvest management training session in Kenya



Rating of cobs during a field day in Ethiopia



Farmer Mr. Joseph Okumu (Left) and Dismas Ochoche (Middle) the farmer group leader in Siaya, Kenya, showcase huge cobs obtained from DroughtTEGO® maize hybrid



Farmers displaying other products produced in the community during TAAT Maize field day in Western Kenya, Aug 2021

Effective P-P-P Helped to Control FAW Using Fortenza Duo Seed Treatment

- ✓ **Fortenza Duo (FD)** chemical for seed treatment against Fall armyworm (FAW) deployed
- ✓ **38,270L** of FD deployed to treat **6,598mt** of climate smart seeds in Zambia & Zimbabwe
 - 2018/19: Zambia – **2,435mt**; Zimbabwe – **572mt**
 - 2019/20: Zambia – **2,508mt**; Zimbabwe – **1,083mt**
- ✓ Over **659,000 farmers** benefited from FD treated seed distributed through government inputs programs in Zambia and Zimbabwe

1.6t/ha yield advantage realized with FD



Happy farmers showcasing cobs from FD treated seeds during harvest, Zambia, 2019



AfDB monitoring visits to Fortenza Duo treated maize fields Zimbabwe – March 2020

Partnership

- ✓ Govt
- ✓ TAAT Maize Compact
- ✓ TAAT FAW Enabler
- ✓ Private sector – Syngenta
- ✓ Seed Companies

Focus on Women Entrepreneurs



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- ✓ Dr Mary Mgonja, Owner of Namburi Seeds contributed **502.7mt** (12.8%) to the production and marketing of **3,920 tons** of climate smart maize hybrids in Tanzania
- ✓ **Engaged** women and youth groups affiliated to Western Region Farmers Network (WEREFANET) who established and conduct field days in Kenya.



WEREFANET women group showcasing some of the demo plots established in collaboration with the TAAT Maize compact, Kenya, August 2019



Dr. Mary Mgonja (Director) at the processing site at Namburi seed company, Tanzania, 2019

Market Systems and Value Addition

Market linkages

- ✓ Facilitated functional market linkages for inputs/outputs to reach farmer groups, e.g. Achor Borrower Scheme (**ABC**), Nigeria
- ✓ **154,070** farmers linked to grain off-takers in Kenya and Nigeria



Maize grain market

Value addition through processing

- ✓ Increase proportions of processed maize products (flour) relative to maize grains in the market.



Processor in Kenya linked to TAAT Maize farmers displays finished whole grain flour from climate smart maize hybrids, 2019

Maize Seed Systems Achievements

Seed Class	Qty (mt)	Hectares cultivated	Grain produced (mt)	Countries	Partners
Breeder's seed	9.18			Nigeria, Benin, Cameroon, Kenya, Uganda	CGIARs, NARS
Basic seed	169.68	6,787		Ghana, Nigeria, Cameroon, Ethiopia, Kenya, Tanzania, Uganda	NARS, Fdn Seed Entities (QBS)
Certified seed	24,485	979,406	2,203,664	Ghana, Nigeria, Kenya, Tanzania, Uganda, Zambia, Zimbabwe	Seed companies
Total	24,664		2,203,664		



Hybrid maize seed fields

- **40 seed companies engaged through performance-based contracts:**

- ✓ Produce seed of climate smart maize varieties
- ✓ Demonstration plots and field days
- ✓ Distribute small free seed packs for promotional purposes
- ✓ Train farmers on GAPS



Partnerships with seed companies resulted in effective hybrid seed scale out in TAAT countries, Kenya



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TAAT Maize Technologies Available

New Elite Climate-smart Maize Varieties

1. Drought tolerant and high yielding – **DroughtTEGO** and **DTMA** hybrids

- ✓ 3 – 5t/ha under moderate drought
- ✓ 7 – 12t/ha under optimum conditions

Single-
cross
&
3-way
hybrids
available

Rieta Agro in Tanzania achieved:

- 10.15t/ha with WE2109
- 9.49t/ha with WE4114



Left – WE2109
Right – WE4114



WE6103 DroughtTEGO in
Uganda: 7.5 – 8.0t/ha

New Elite Climate-smart Maize Varieties

2. **Maize Lethal Necrosis (MLN)** disease tolerant hybrids:

- ✓ MLN tolerance put in drought tolerant germplasm

DroughtTEGO Performance in Nigeria

- SAMMAZ 62 (WE5229) – 8.35t/ha
- SAMMAZ 63 (WE5202) – 8.13t/ha

Fortenza Duo
chemical available
for seed treatment to
protect the maize
crop against FAW

Access to New Elite Varieties

- ✓ Seed companies apply for a license to commercialize the varieties from AATF, IITA, CIMMYT, NARS
- ✓ If the hybrid is on ECOWAS/COMESA/SADC catalogue – no need for further testing through NPT/VCU/DUS

3. Imazapyr Resistant (IR) Maize Varieties for Striga Management

- ✓ Seed of improved maize varieties that are resistant to the effects of Imazapyr herbicide is coated with the herbicide at the processing plant to protect the crop against the parasitic Striga weed.
- ✓ The Imazapyr herbicide should be registered in the country like other herbicides
- ✓ High level **stewardship** required to make sure Imazapyr herbicide is not used on non-resistant varieties & improve **seed quality**
- ✓ Farmer **awareness** and technical **backstopping** to improved adoption and demand creation

IR maize varieties are sold at US\$1.5 to US\$2.5/kg



Maize field with high level of Striga infestation in Ikolomani, Western Kenya _ Feb 2021

Access to IR Varieties

- ✓ **Seed companies apply for a license to commercialize the varieties from CGIAR and NARS**
- ✓ **ECOWAS/COMESA/SADC catalogue – no need for further testing through NPT/VCU/DUS**

4. Biofortified Pro-Vitamin A Orange Maize

- ✓ Biofortified maize varieties rich in Vitamin A are available
- ✓ Pro-Vitamin A content: **7 – 15 ppm**
- ✓ Contribute to food and nutrition security
- ✓ Preferred livestock feed
- ✓ Orange maize varieties being commercialized in:
 - **Ghana, Nigeria, Mali, Cameroon, DRC, Rwanda, Tanzania, Malawi, Zambia & Zimbabwe**
- ✓ Farmer **awareness** and demand creation required especially to those used to white maize
- ✓ Value of biofortified maize is **10% to 20%** higher than that of non-biofortified maize



Pro-Vitamin A Orange Maize

Access to Pro-Vitamin A Varieties

- ✓ **Seed companies apply for a license to commercialize the varieties from CGIAR, HarvestPlus and NARS**
- ✓ **ECOWAS/COMESA/SADC catalogue – no need for further testing through NPT/VCU/DUS**

5. Mechanized farm operations

- ✓ Contract mechanization services to reduce drudgery, improve efficiencies, commercialize agriculture, attract women and youth
- ✓ Aggregation of smallholder farmers to form clusters with sizable fields to utilize tractors and implements efficiently
- ✓ Digital Apps used for hiring and tracking farm machinery
- ✓ Agridrive and Hello Tractor offering mechanized services in Nigeria

Using tractor drawn planter to achieve optimum plant population

6. Weed management using pre-emergence and post-emergence herbicides

- ✓ Use registered herbicides in the country – supplied by private sector
- ✓ Use recommended application rates and calibrate the equipment used for spraying
- ✓ Use of knapsack and tractor mounted boom sprayers – efficient and effective weed control





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Strong Partnerships Helped To Form Resilient Maize Food System and Business Through TAAT



It starts with the right seed



THANK YOU

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