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Transforming Africa's Agriculture through Enhancing Commercialization of Agricultural Research Products

The case of Maize Technology

By : *FARA TAAT Capacity Development and Technology Outreach and Maize Value Chain Compact*

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About FARA

The Forum for Agricultural Research in Africa (FARA) is the apex continental organisation responsible for coordinating and advocating for agricultural research-for-development. (AR4D). It serves as the entry point for agricultural research initiatives designed to have a continental reach or a sub-continental reach spanning more than one sub-region.
FARA serves as the technical arm of the African Union Commission (AUC) on matters concerning agricultural science, technology and innovation. FARA has provided a continental forum for stakeholders in AR4D to shape the vision and agenda for the sub-sector and to mobilise themselves to respond to key continent-wide development frameworks, notably the Comprehensive Africa Agriculture Development Programme (CAADP).
FARA's vision is to "Reduced poverty in Africa as a result of sustainable broad-based agricultural growth and improved livelihoods, particularly of smallholder and pastoral enterprises" its mission is the "Creation of broad-based improvements in agricultural productivity, competitiveness and markets by strengthening the capacity for agricultural innovation at the continental-level"; its Value Proposition is the "Strengthening Africa's capacity for innovation and transformation by visioning its strategic direction, integrating its capacities for change and creating an enabling policy environment for implementation". FARA's strategic direction is derived from and aligned to the Science Agenda for Agriculture in Africa (S3A), which is in turn designed to support the realization of the CAADP vision.

Disclaimer

Background

The Forum for Agricultural Research in Africa (FARA), the African Forum for Agricultural Advisory Services (AFAAS), IITA, and the African Agricultural Technology Foundation (AATF) had organized a technical webinar on September 2, 2020, as part of the Technologies for African Agricultural Transformation (TAAT) Program of the Feed Africa initiative funded by the African Development Bank (AfDB).

FARA is leading the enabler compact for Capacity Development and Technology Outreach (CDTO) complementing the commodity compacts, such as the Maize Value chain led by the African Agricultural Technology Foundation (AATF) by acting as a process facilitator in the delivery of the proven technologies at scale.

FARA has so far done so through training of trainers (TOT) for Innovation Platforms (IPs) facilitators to help establish Innovation Platform (IP) as the main model for implementing TAAT. In addition, the CDTO Enabler Compact is supporting the compacts develop modular outreach materials for scaling of technologies within these local innovation platforms. Instruments have also been developed to assist the IPs identify their capacity development needs.

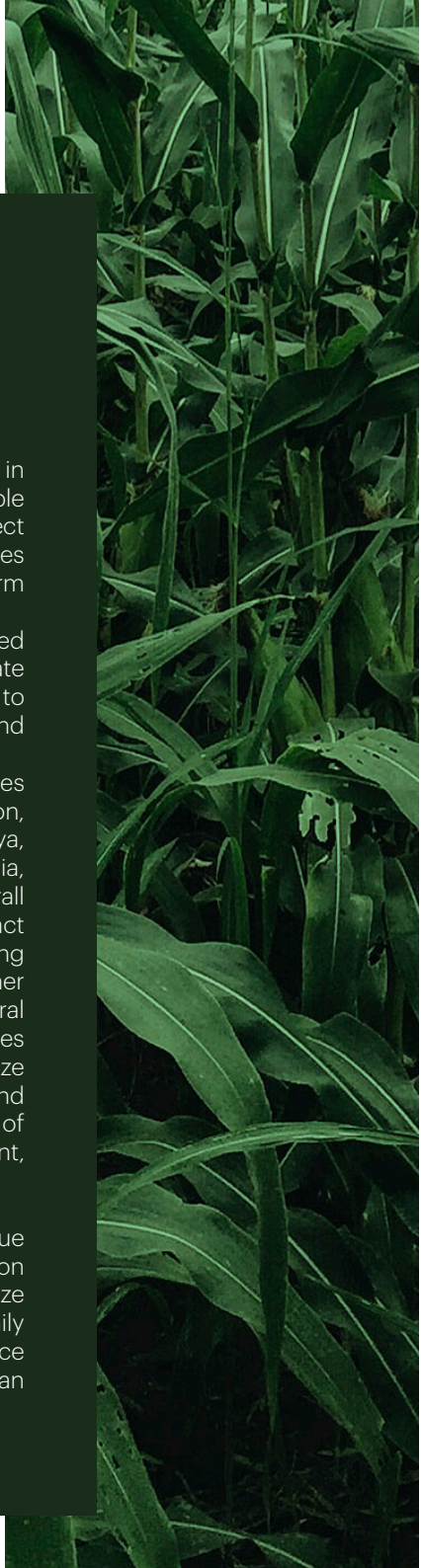
Overview of the Maize Value Chain under TAAT

Maize is one of the most important staple crops in Africa on which an estimated 300 million people depend on. However, a myriad of challenges affect maize production, including drought, diseases and pests such as the recent Fall Army Worm (FAW) menace.

In view of this, the TAAT Maize Compact embarked on activities to facilitate access and use of climate smart maize varieties for facilitating farmers to increase maize yields and ensure more food and cash from sale of surplus maize products.

The Maize value chain technology delivery activities have been implemented in Benin, Cameroon, Central African Republic, , Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe. The overall objective of the maize value chain compact was to increase uptake and use of high yielding climate-smart maize technologies through other complementary inputs and Good Agricultural Practices (GAPs). Whereas, the specific objectives were to: i) increase profit margins along the maize value chain through improved market linkages and value adding activities, ii) increase the number of women and youth entrepreneurs employment, and iii) increase maize productivity in Africa.

The overall vision of success for the maize value chain compact were to: reach at least 2 million households to get access to climate smart maize technologies; benefit 12 million farm family members from the technologies and to enhance their incomes by at least 20% by producing an



extra 12 million tons of maize grain through increasing productivity of maize by at least 30%. Besides, the compact aims to create business opportunity for at least 30% women and youth by 2021.

Business Opportunities Identified in the Maize Value Chain

As part of its mandate in the programme, the TAAT Maize Compact embarked on activities to increase uptake and use of high-yielding climate-smart maize hybrids by smallholder farmers; increase profit margins in the maize value chain through improved market linkages and agribusiness training; increase number of women and youth entrepreneurs and employment in the maize value chain; and increase maize productivity in Africa.

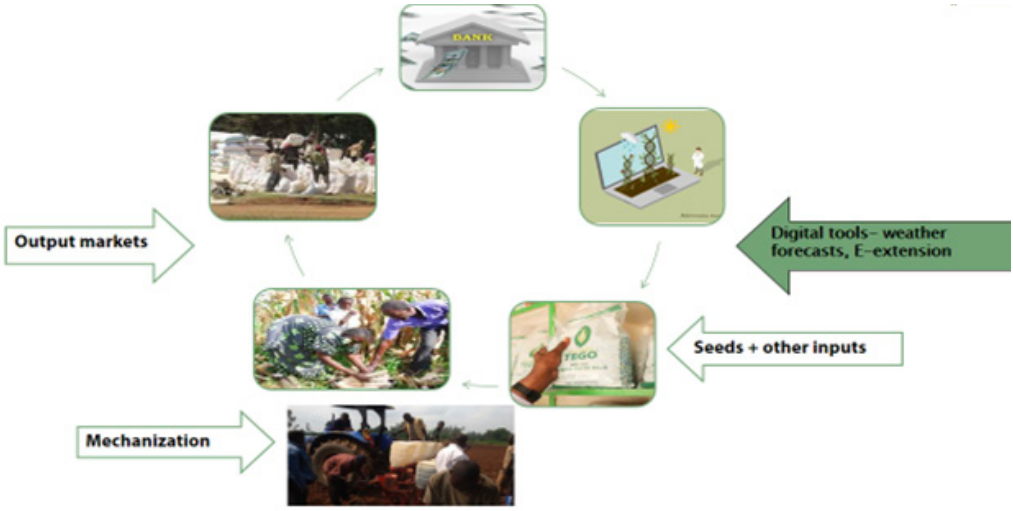


Figure 1: Business Opportunities along the Maize Value Chain

Figure 1 above shows that the critical stages along the maize value chain where the TAAT Maize Compact focuses on with the aim of enhancing business opportunities. In this regard, the finance institutions like banks offer credit opportunities to technology developers and farmers to facilitate them to access input-output markets, technology provision that can demonstrate capacity of proven technologies and service deliveries to optimize yield on-farm, seed companies to produce and supply quality seeds of desired maize varieties, commodity associations that facilitate input supply, aggregation of grains and output market linkages and also maize off-takers and processors who can buy off produced grains and add value hence offering business opportunities for youths and women along the maize value chain.

The Technology with a Potential towards Commercialization

Many proven maize technologies such as climate smart maize technologies, pest and disease tolerant varieties and varieties with enhanced nutritional value, among others, have been developed by researchers worldwide to address some of the challenges on production, productivity, pest and disease and quality. Of these, the Elite climate smart maize hybrid varieties which are drought tolerant, MLN disease tolerant, Striga weed resistant and Vitamin-A nutritionally enhanced are able to produce 30% better grain yields over the best commercial checks and can lead up to 20% increased profit margins.

Figure 2: Elite Climate Smart Hybrid Maize Varieties

The seeds take between 125 – 135 days to mature and grow at an altitude of 1000-1600 metres above sea level. They have tight husks cover on the cob protects grain from bird/pest, damage as well as rot. The grains produced are majorly white, which is a property preferred by many milling companies. Also, the grains have sweet taste, a property loved by farmers for food, as well as the production of corn syrup, which is a major ingredient in several food processing companies.

A Business Pathway towards Commercialization

The TAAT Maize Compact, led by AATF and co-implemented by IITA, is disseminating climate smart maize technologies. The varieties championed by AATF including the WEMA varieties which go by the brand name DroughtTEGO® provide a marketing edge for the seed companies. National Agricultural Research Systems (NARS), IITA and CIMMYT are also partners facilitating the promotional and scale out of maize technologies. These technologies are disseminated through a strong Public-Private Partnership with significant participation and collaboration of commercial seed companies, and these

seed companies supply the climate smart maize seeds to farmer organization to increase production of quantities and at the same time the farmer groups also produce and supply the grains to the seed companies to use as a seed source. The Community Based Organizations (CBOs), NGOs, off takers, agro dealers and national extension service providers play great roles in creating demands and market linkage thus contributing towards transformation of farmers into business entities.

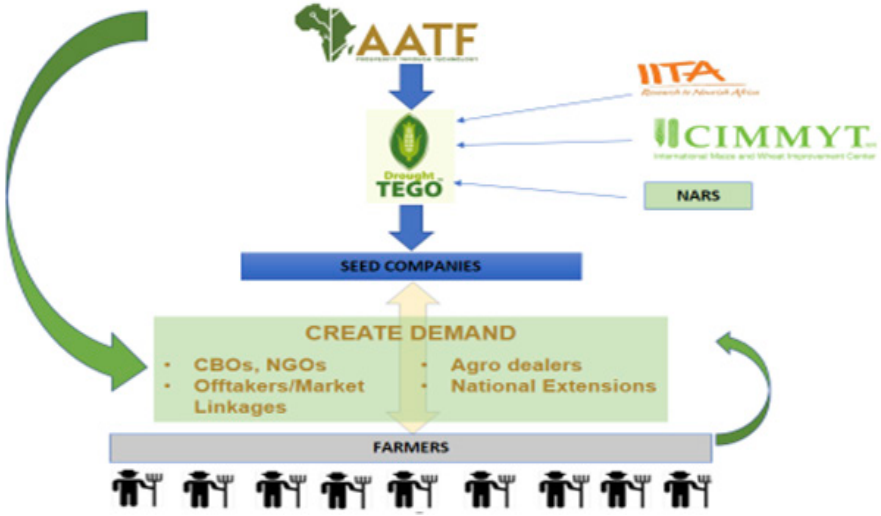


Figure 3: AATF's Deployment Pathway towards Commercialization

Success Stories from the Field/Beneficiaries

a) Women Led Enterprises

The Women Led Enterprises are women groups engaging on scale up of maize technologies through organizing demonstration field days, farmer field schools and fostering market linkages. Western Region Farmers Network (WEREFANET) is a women and youth affiliated farmer group (34 women and youth groups) found in Kenya involved in TAAT Maize activities to ensure rapid adoption of climate smart maize hybrids as well as empowering women and youths to venture into maize production for business.

Figure 4: Women group showcasing some of the demo plots established in collaboration with the TAAT Maize compact (left) and Maize seed processing plant (right)

Food Chain Millers in Kenya

Food Chain Millers is a member of Agro processors Association of Kenya (APAK) which is a consortium of over 62 small-scale maize millers which has been able to employ women and youths in the milling premises. These maize processing companies processed grains supplied by off-takers into finished products like grain flour and sold in Kenya.

Figure 5: Partnerships with seed companies (left) and processor linked to TAAT Maize farmers displays finished whole grain flour (right)

The companies also incentivised aggregator farmers to adopt high yielding varieties with suitable miller preferences through establishing demonstrations specifically designed to target the small-scale millers and linked to companies while producing the varieties. Consequently, the compact recorded rapid adoption of climate smart maize hybrid seeds by millers due to the customer preferences in taste, grain quality and flour texture.

Contact address:

If you are interested to start your business in Maize production through climate smart maize technologies, please contact the following institutions and people:

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If you want to learn more about Maize value chain, please visit the following sites:
https://www.aatf-africa.org/

Acknowledgment:

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