



# Technologies for African Agricultural Transformation (TAAT)

## Monitoring and Evaluation System

Monitoring, Evaluation and Learning Report on  
TAAT Maize Compact's Activities in Western Kenya  
Corridor

TAAT MEL Working Document No. 002

**Monitoring, Evaluation and Learning Report on TAAT Maize  
Compact's Activities in Western Kenya Corridor**

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## Acronyms

AATF:	African Agriculture Technology Foundation
AEZ:	Agro-Ecological Zones
AfDB:	African Development Bank
CGIAR:	Consultative Group of International Agriculture Research
FARA:	Forum for African Agriculture Research in Africa
FSC:	Faida Seed Company
GAP:	Good Agricultural Practices
IFDC:	International Fertilized Development Centre
IITA:	International Institute of Tropical Agriculture
KALRO:	Kenya Agricultural and Livestock Research Organisation
KPHIS:	Kenya Plant Health Inspectorate Service
M&E:	Monitoring and Evaluation
MEL:	Monitoring, Evaluation and Learning
MLND:	Maize Lethal Necrosis Disease
NARS:	National Agricultural Research Systems
NARES:	National Agricultural Research and Extension Systems
NGO:	Non-Governmental Organization
PIA:	Priority Intervention Areas
PLD:	People Living with Disability
PPP:	Public-Private Partnership
RoP:	Rural Outreach Program
TAAT:	Technologies for African Agriculture Transformation
WEMA:	Water Efficient Maize for Africa

## Executive Summary

The term Groundtruthing is a term used in various fields to refer to information provided by direct observation (i.e. empirical evidence) as opposed to information provided by inference” (Wikipedia). This report provides results of a TAAT ground truthing monitoring field mission conducted from 9<sup>th</sup> to 12<sup>th</sup> December 2019 in Kenya to verify results reported by the Compact between August 2018 to December 2019.

The MEL mission’s aim was to corroborate and validate successes reported by the Maize Compact on the ground by reviewing documents from seed companies and hearing firsthand from beneficiaries, implementers and other stakeholder groups by highlighting key observations and lessons learnt that serve to provide guidance to compact activities moving forward by effecting timely take remedial actions.

The Maize Value Chain is a very complex one and takes long to reach the final consumers. There are many actors involved in the chain. Their contribution to the success of the value chain from one segment to the other is a key driver of the technology uptake.

Through its network of NARES, Public-Private Partnerships (PPP) and farmer groups, **1,003,640 direct beneficiaries** have learned about the value add of climate smart maize hybrids commercialized through accompanying field days, open days, hands-on training sessions and small seed packs distribution. In partnership with **28 seed companies** (Kenya -4, Uganda -4 , Tanzania -6, Zambia - 8 and Zimbabwe -6), the Maize Compact has so far facilitated the establishment of **4,256 field demonstration plots**, conducted **757 field days**, and has **distributed 84,321 free small pack** seeds to boost the scale up of over 17,340 tons of climate smart maize seeds produced in partnership with the seed companies. For Kenya alone, **548 field demos** established, **5 large field days** with **8,640 farmers** recorded to have participated in field days, **973 small field days** to create awareness on the performance of the climate smart varieties, **15 radio episodes** and **2 road shows** organized to promote the climate smart varieties, **4,500MT** of climate smart varieties sold, **160 Lead Farmers** technically supported to promote the climate smart varieties, and **25,000 small packs** of KH500-31A distributed to **10,000 farmers**.

The outreach disseminating investments result in learning and knowledge sharing among different actors from different backgrounds and have proven to show strong partnerships across the value chain all working towards positive results for the farmers. The mission recommends to the Compact to organize a forum that will bring together different partners and key stakeholders on the table to discuss the future of the Compact beyond program closure for sustainability purposes. The caliber of the private sector to move forward the value chain is commendable but does not guarantee the sustainability of the program achievements. There is still much expectation from partners on continued funding. The study also recommends the Compact to intensively engage Enablers namely, the Soil Fertility Enabler (SFE), the Capacity Development and Technology Outreach (CDTO) Enabler Compact and ENABLE-TAAT Compact to create a conducive environment for scaling in areas needed. The last-mile agro-dealer shop is another area that needs to be scrutinized by the implementing agency. AATF can facilitate this process in collaboration with Seed companies to avail agro-inputs in remote areas where farmers can be served better and reduce on transportation cost.

## **1. Introduction**

The Technologies for African Agricultural Transformation (TAAT) is a program initiated by the African Development Bank (AfDB) as part of its Feed Africa Initiative. The main objective of the program is to improve the business of agriculture across Africa by raising agricultural productivity and improving farmer livelihoods by mitigating risks and promoting diversification and processing across nine agricultural commodity value chains within eight identified Priority Intervention Areas (PIA).

The program is executed by the International Institute of Tropical Agriculture (IITA) in close partnership with other CGIAR Centers, specialized technical centers (e.g. African Agricultural Technology Foundation (AATF), International Fertilizer Development Center (IFDC) etc), Forum for Agricultural Research in Africa (FARA), national agricultural research and extension systems (NARES) and private sector partners. TAAT is not a research program but is rather an initiative focused on scaling proven high-performance food production technologies to millions of farmers in a commercially sustainable way through a network of strategic partners. Technical coordination of the program is provided by the TAAT Clearinghouse, a semi-autonomous unit in the program's management structure serving as an honest broker in the identification and assessment of "proven" technologies and products that are ready for widespread dissemination, as well as linking these technical opportunities to wider national investment development agendas.

The TAAT program increases agricultural productivity through the deployment at scale of proven and high-performance agricultural technologies along selected value chains. TAAT operates as a network of interacting "Compacts" with nine devoted to specific commodity value chains, and six others serving as "Enablers" that provide needed specialist services. The nine (9) value chain Compacts are rice, maize, cassava, wheat, sorghum & millet, orange-flesh sweet potato, high-iron beans, small ruminants & poultry and aquaculture. The six (6) enabler Compacts are soil fertility management, water management, capacity building, seed policy, fall army worm control and youth in agribusiness Compacts each of which provide enabling services to the nine commodity value chains.

## **2. TAAT Maize Compact**

African Agricultural Technology Foundation (AATF) is the main implementing institution for the TAAT Maize Compact in collaboration with the International Institute of Tropical Agriculture (IITA). The TAAT Maize Compact aims to disseminate water efficient maize hybrids as a climate-smart option across the continent to improve productivity of maize farmers. Included in the technology package deployed by the Maize compact is licensing of hybrids to seed producers that provide an avenue for mass dissemination. Through outreach campaigns and knowledge sharing efforts, the Compact deploys across agro-ecological zones to reach the Compact's intended 2,000,000 million beneficiaries. Establishment of technology demonstrations in the fields stimulate interest by showing positive impact of the technologies to the farmers and then used to leverage resources from African Countries for long term implementation and sustainable national programs. Implementation through national agricultural investment programs is the only way to ensure sustainability of technology delivery. It shall be noted that the TAAT Maize Compact technologies are supported by a very strong ecosystem of Public Private Partnerships (PPP) seen through participation of commercial seed companies working in partnership with farmer groups, commodity associations and National Agricultural Research Systems (NARS).

Primary beneficiaries of the maize technology dissemination efforts are smallholder farmers. The maize compact endeavors to involve women and youths in the maize value chain by increasing their participation in maize farming and processing by 20% and 10%, respectively. Through TAAT, the Maize Compact has identified and deployed eight (8) maize technologies to increase maize productivity by 2t/ha across the

program's target countries. Through its network of NARES, Public-Private Partnerships (PPP) and farmer groups, **1,003,640 direct beneficiaries** have learned about the value add of climate smart maize hybrids commercialized through accompanying field days, open days, hands-on training sessions and small seed packs distribution. In partnership with 28 seed companies (Kenya -4, Uganda -4, Tanzania -6, Zambia - 8 and Zimbabwe -6), the Maize Compact has so far: facilitated the establishment of **4,256 field demonstration plots**, conducted **757 field days**, and has **distributed 84,321 free small pack** seeds to boost the scale up of over 17,340 tons of climate smart maize seeds produced in partnership with the seed companies.

This report validates these achievements and provides observations to assist in the way forward. TAAT's Monitoring, Evaluation and Learning (MEL) component is an integral part of the program implementation as it helps stakeholders understand how the program is progressing and facilitates learning and feedback mechanisms for all to benefit from. The TAAT MEL promotes accountability and transparency such that the results reporting through MEL benefit a range of stakeholders including the donor (AfDB), the Compact and most importantly, the beneficiaries. The MEL also provides a forum for discussion that helps Compacts adapt to unexpected factors in order to meet program objectives and promotes a sense of ownership by implementing institutions highlighting their contribution to the sustainability of TAAT's mission for sustainable and transformative agriculture for Africa.

To have a fair assessment of the implementation, obtain insight of stakeholders' participation and involvement in the compact's activities while considering the variability of different agro-ecological zone conditions within the country, this mission was undertaken in multiple locations along the Western Kenya corridor namely, Nairobi, Nakuru, Vihiga and Kakamega Counties. The focused on key value chain actors such seed companies, grain millers and farmer groups who were strategically selected by the Compact to rapidly fast-track scaling up of TAAT maize technologies through field demonstrations (farmer field schools and processing of maize grain to sifted flour ready for marketing and consumption (post-harvest). The ground-truthing mission focused on observing the following activities that were reported as having outstanding success:

- i. The role of seed companies in scaling out the maize technologies
- ii. An out-grower scheme linked to a grain off-taker in one of the implementation sites to showcase a model of value chain analysis likely to be promoted.
- iii. The role of women and youth empowerment within the maize value chain as promoted by farmer groups.

Expected outcomes of the mission included documenting in a clear and concise manner: key observations with regards to implementation processes of the Maize Compact in Western Kenya, key achievements with evidence of achievements, and guidance for enhancing delivery of the Compact's technology interventions.

### **3. Field Findings**

#### **3.1. Maize Compact Technologies**



The main objective of the Maize Compact is to deploy and promote high-yielding elite climate smart maize varieties and accompanying technologies to increase productivity and improve household income and create more demand for maize technologies promoted under TAAT. The technologies deployed and promoted include:

- Elite Water Efficient Maize for Africa varieties (WEMA)
- Appropriate fertilizer blends
- Optimal maize planting density
- Efficient pest and weed management
- Post-harvest management
- Supportive marketing
- Mechanization
- Promoting good agricultural practices on field

In Kenya, maize is the main staple food yet it continues to face several challenges undermining its production to meet full self-sufficiency including: drought, diseases and pests such as the Fall Armyworm (FAW), Striga parasitic weed and the Maize Lethal Necrosis Disease (MLND). In collaboration with its partners, the TAAT Maize Compact deployed several proven climate smart maize technologies, optimal planting density, weed management, fertilizer blends and pest and disease management technologies to facilitate the delivery mechanism of such technologies to farmers and scale them out across the country.

### **3.2. Partnership Strategy - Organization of Value Chain Actors and their Roles**

Prior to the field deployment of TAAT technologies, the Maize Compact initially focused on revitalizing partnerships with its traditional partners to move the technologies from seed companies through agro-dealers to farmers. The Compact also spent time interfacing with outreach organizations to ensure readiness of the value chain as the engine to fast-track the adoption of innovative maize technologies. This early focus on partnerships by the Compact has had a positive impact on technology delivery.

Building on existing partnership arrangements and engagement strategies to deliver proven technologies to farmers, through TAAT, the Maize Compact established a well-structured value chain in the areas visited displaying strong partnerships with private sector and NARES to ensure that every segment of the value chain has an important and sustainable role in moving the technologies forward. In close collaboration with the Kenya Plant Health Inspectorate Services (KPHIS) a government regulatory agency responsible for assurance on the quality of agriculture inputs, seed companies work to ensure deployment of quality seeds to farmers. It was observed that there are different channels used by the Compact to ensure that key value chain actors are strategically positioned in the delivery mechanism of its technologies. These include:

- (i) Channel 1: From seed companies, agro-dealers, outreach organizations such as ROP to farmer groups or individual farmers.
- (ii) Channel 2: From agro-dealers, seed growers, farmer groups or individual farmers, millers, supermarkets to final consumers. This channel is complex, and it involves a cocktail of diverse actors including the youth grain growers, traders, transporters, packaging suppliers, distributors, supermarkets and final consumers.

### 3.3. Outstanding partnership arrangements to scale out maize value chain technologies

*3.3.1 The role of Seed Companies in scaling up maize technologies* demonstrates how well the Maize Compact is working with private seed companies to disseminate seed to farmers for impact as observed through a partnership with Seed Co Ltd (Large-scale) in Nairobi and Faida Seed Company Ltd (Medium-scale) in Nakuru to deploy seeds to farmers in Kenya. The role of these seed companies is paramount to successful technology deployment that was observed. The collaboration and trust built with the seed companies, agro-dealers and farmers ensures a sustainable process for farmers to access high quality seed for farming. The Maize Compact continues to proactively engage with private partners directly linked to smallholder farmers and supported by the vision of the TAAT program. As has been highlighted by the African Development Bank, *“To Feed Africa all TAAT commodity Compacts must work towards improving access to locally adapted, affordable and readily available quality certified seeds of high yielding varieties by smallholder farmers”*. Observations made during the ground truthing mission highlighted such examples of strategic and enabling Public-Private Partnerships provide evidence-based impact experienced by farmers in Kenya.

The Maize Compact has consolidated its partnership with Seed Co. Ltd. to upscale drought tolerant maize varieties in Kenya. It is also in Seed Co. Ltd. documents reviewed during the mission show key deliverables achieved through a TAAT Performance Contract effective 1<sup>st</sup> October 2018 include:

- **439** field demos established for **3** varieties (Sc Duma 43, Sungura 302 and Punda Milia 529).
- **3** Large field days organised in collaboration with other partners to reach more farmers. So far **554** farmers participated of which **254** men and **300** women.
- **973** small field days to create awareness on the performance of the climate smart varieties.
- **15** radio episodes and **2** road shows organised to promote the climate smart varieties.
- Distribution of climate smart varieties small seed packs through **3** avenues including the local development organisations, CGIAR centres and direct giveaways to reach many farmers.
- **4,500MT** seed of climate smart varieties sold
- **160** Lead Farmers technically supported to promote the climate smart varieties.

The partnership of the Maize Compact and Seed Co. Ltd. has proven to be sustainable through intense outreach and knowledge sharing efforts led by Seed Co. Ltd through field day activities frequently announced via social media platforms and radios to stimulate farmer interest in the uptake of climate smart technologies. The Compact was able to reach hundreds of farmers in the Counties visited. Outreach by the private sector has shown to provide a much-needed avenue by bridging value chain stakeholders such as: research institutions (national and international), financial institutions, fertilizer & crop chemical companies, NGOs, Government representatives, and farmer group representatives. During discussions, Seed Co Ltd Managing Director, Mr. Wellington Wasike was optimistic when he says, *“Field days give more visibility to promising technologies. We at Seed Co Ltd, we provide technical advice to farmers from planting to post-harvest handling to increase yields and reduce losses. Farmers also learn crop management techniques. The respect of the cropping calendar is very instrumental to pass each stage of cropping system with no risks of pest evasion”* (Picture 1).



Picture 1: Visit at SeedCo Company's warehouse

Similar to the SeedCo partnership, Faida Seed Company (FSC) Ltd partnered with the Maize Compact to promote drought tolerant hybrid KH500-31A. The company has the capacity to process 40MT of seeds and provides employment to 40 casual-seasonal workers of which 80% are women for post-harvest activities including: sorting, grading and packaging with the remaining 20% being men used for heavy lifting and treating the seeds. Due to the weather variability, the cropping season was not successful during the time frame of implementation and thus caused shortages in seed availability. To overcome this challenge, FSC Ltd has been linked through the interface of AATF to other seed company networks such as Ultravetis and Drylands Seed Companies to produce more seeds of KH500-31A and WE1101 (DroughtTEGO®) to meet the demand and scale them out. Deliverables achieved to date through the Performance Contract effective 1<sup>st</sup> October 2018 with FSC include:

- **30** field demo plots established in the long rain seasons (March-May 2019)

- 2 large field days organised in Njoro and Nyahururu
- 19 field demo plots established in the short rain seasons (Oct- Dec 2019 ongoing)
- 25,000 small packs of KH500-31A distributed to 10,000 farmers

The partnership of FSC Ltd is another successful example of a private-public partnership between an established private company and a leading public institution in this case Kenya Plant Health Inspectorate Service (KEPHIS). To meet the regulatory seed certification requirement and to facilitate the mapping of all drought tolerant, disease resistant and high yielding varieties. FSC also partnered with KALRO to license the most promising varieties and accompanying technologies to be deployed under TAAT. It is important to note in Kenya, all seed companies mandatorily work with KEPHIS for seed regulation and certification matters. Mr. George Njihia, FSC Ltd Operations Manager glowingly highlighted that *“Farmers are willing to pay for good quality seeds if they are guaranteed to have a marginal return on harvest. Farmers do not consider much the cost of acquisition of seeds; they are rather concerned by the performance of the seeds. At the FSC, one lesson we learned is that field demo plots are the engine for technology adoption by farmers. Publicity on- farm is the best impactful avenue for technology uptake and adoption.”* (Picture 2)



Picture 2: Faida Seed Company warehouse in Nakuru Left (untreated KH500-31A),

3.3.2 A Food Chain Miller linked to farmer groups in Nakuru County showcased a model of value chain expected to be further promoted and funded by the Compact for scaling. The Food Chain Miller is a sole proprietor company registered in 2011 operating in Nakuru county. On the 20<sup>th</sup> of April 2019, the TAAT Maize Compact partnered with the food Chain Miller Company through a partnership agreement to provide a mechanism for farmers to supply their produce to the readily available market. The miller received two tons of WE1101 (DroughtTEGO®) seed through the Maize Compact which was distributed to selected 15 farmers for demonstration. The results showed that WE1101 (DroughtTEGO®) was more productive giving a yield of 9bags of 90kg each of grain from ½ acre land compared to 5 bags of 90kg each from other varieties especially in mid-altitude areas. The higher yield from DroughtTEGO®` incentivized farmers for further engagement with the grain off-taker. In addition, the miller is providing a transport

subsidy to farmers producing bigger volumes of DroughtTEGO® in order to get their produce to the miller milling factory without any resource constraints thereby removing a significant financial burden often hindering farmers. Picture 3 highlights the various support provided to farmers for post harvesting. With a capacity of processing 30 bags of 90 kg of maize per hour with a hammer milling machine (Picture 3), the TAAT Maize Compact's efforts to engage farmers in post-harvest production is a promising pathway to scaling for impact, demonstrating a clear tangible link between increase in productivity and increased family income.



*Picture 3: Food Chain Millers medium-scale processing unit in Nakuru*

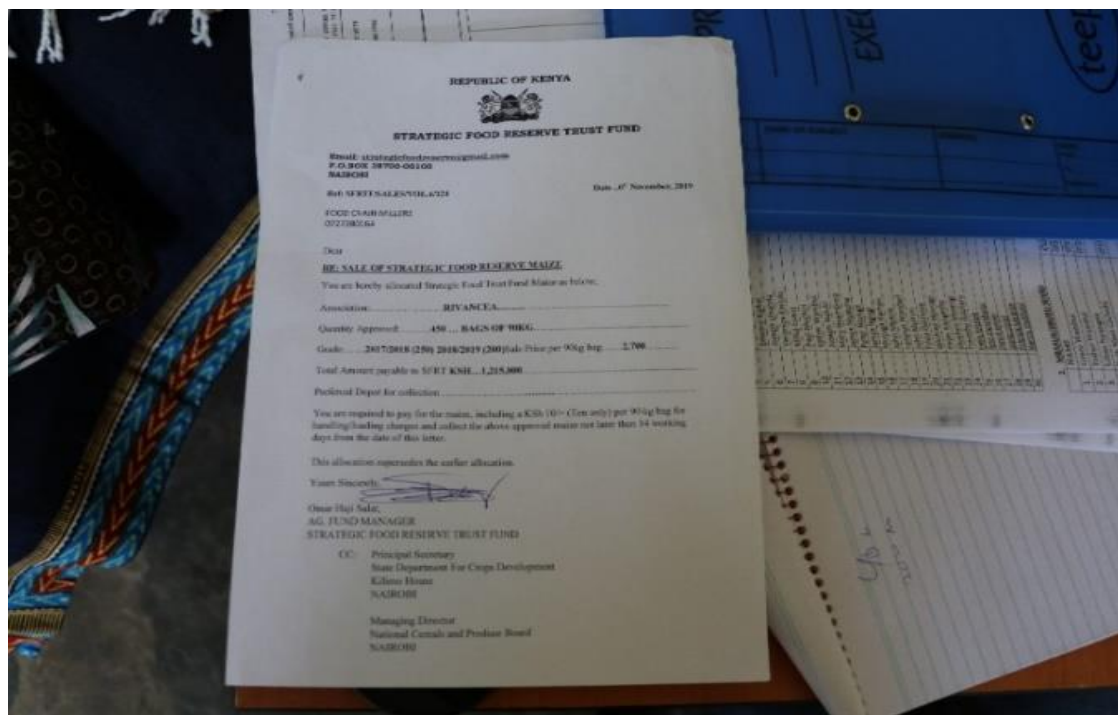
Through the partnership, the miller further incentivized farmers through a robust capacity building support to farming communities regarding post-harvest handling techniques in order to be able to meet the milling requirements. This knowledge sharing between private company and the farmer community has proven to reduce post-harvest losses previously encountered by farmers and has shown to stimulate interest for better farming. The TAAT Maize Compact intends to move swiftly with scaling up of the partnership with the miller and replicating the same model in other target countries. Through this initiative, the Food Chain Millers have maintained a pool of over 2,400 smallholder farmers who supply them maize grain annually. With formal contractual agreements with the farmers, Food Chain Millers was able to purchase about 4,320 tons of maize grain in 2019, and in turn processed 3,600 tons and 720 tons of maize flour and animal feed, respectively.

Capitalizing on its success in Nakuru, Food Chain Millers has subsequently gained access to the larger Nairobi market through a purchase order (Picture 4) dated 10 December 2019 from Unga Limited to supply 15,000 bags of 90 kg maize grain worth KES 45Millions (USD 450,000<sup>1</sup>) of DroughtTEGO® and other climate smart maize grade 1 sifted flour with 13% moisture. Unga Limited is a milling company located in

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<sup>1</sup> 1KES = 0.01 USD by 16<sup>th</sup> December, 2019

Nairobi whose maize flour is sold all over Kenya so thus validating how the success of the Maize technology has been levered for additional strategic partners for scaling. The Food Chain Miller has also been contracted by the Strategic Food Reserve Fund to supply 5,000 bags of 90kg and 450 bags of 90kg in October 2019 and November 2019, respectively as part of food reserve in Kenya.



Picture 4: Food Miller purchase orders by the Strategic Food Reserve Fund

The finished products (grade 2 sifted flour) are then marketed to low income beneficiaries at reasonable price points as well as butcheries, hotels and restaurants. The miller promotes payments through an e-payment system i.e. Mpesa after supply to ensure that farmers are paid within 24 hours of delivery of their grains and thus have cash in hand to meet other basic needs. A pack of 2kg of sifted flour is sold at 100KES and 1kg at 50KES which is deemed highly affordable to all (Picture 5). The by-product is sold as animal feed whereby a bag of 90kg is sold at 300KES. In general, these products are sold to free markets, hence generating income to both the farmers, seed producers and the grain processors. For the upcoming season, the miller expects to scale out WE1101 (DroughtTEGO®) variety to other Counties in Kenya. Farmers expected to receive the technology have been identified and registered in Gilgil Ward - 30 farmers, in Mbaruk/Eburu Ward -22 farmers and Malewa West Ward -22 farmers among others.



Picture 5: Sifted flour packaged for delivery to customers

3.3.3 The role of women and youth within the maize value chain as promoted by Ms. Margaret Awinja, Lead Farmer in Kakamega county, Butere sub-county (a town in Kakamega county) is another example of how the TAAT Maize Compact is making headway on the ground through diversification. Approximately 200 farmers consisting of women and youth accessed and planted WE1101 (DroughtTEGO®) through interfacing with Ms. Margaret Awinja. These beneficiaries are mostly vulnerable People Living with Disabilities (PLD) and other excluded groups such as albinos and widows. They formed about 15 youth groups and 20 women groups with a membership of approximately 10 members per group. In the short rain seasons (October- December 2019) which were generally late and erratic with dry spells in most parts of the country, Ms. Awinja received 600kg of seeds from the Maize Compact which she equally distributed to 12 groups (50kg/group). Each farmer received 4 kg sown on 0.5 acres expected to harvest about 5bags of 90 kg each by the end of January 2020. Traditionally, these farmers were planting traditional varieties and OPVs which gave them a yield of 2-3bags for 5kgs sown on 0.5 acres. The OPVs did not generate enough income for farmers because it was not drought tolerant and was thus generally low yielding (Picture 6). The new varieties deployed by Ms. Awinja in Butere sub county have had a positive impact on the community by providing farmers with high yielding new drought tolerant varieties.



Picture 6: Mr. Romanos Mahokha showing his field. Left (4months) with no improved variety & no GAP and Right (2months) with WE1101 and GAP

**3.3.4 The role of outreach actors: Case of the Rural Outreach Program –** Rural Outreach Program (ROP) is a local Non-Governmental Organization (NGO) registered by the Government of Kenya and is established in Western Kenya since 1992. ROP is involved in agriculture and livestock activities aiming at community empowerment. Under TAAT, the Maize Compact and ROP collaborated to strengthen their existing partnership to scale out climate smart and water efficient varieties (DroughtTEGO®). ROP was linked to agro-dealer networks working with the FSC and SeedCo to access improved maize seed varieties. Through this collaboration ROP is currently working with 523 groups in Vihiga and 830 groups in Kakamega with a membership of approximately **20** members per group.

Key achievements of ROP in this partnership effective September 2018, include:

- In 2018 short rainy season (October-December cropping season),
  - **20** demo plots established of 8 varieties, namely: WE6108, KATEH16-02, WE7117, WE3106, WE6110, WH505, WE3205 and WE1101; but unfortunately, the rains fall in very late with a huge impact on production.
- In 2019 long rainy season (March -May cropping season):
  - **20** demo plots established
  - Massive field days organized with the participation of **7,117** farmers from different counties
- In 2019 short rainy season (October-December cropping season):
  - **20** demo plots established
  - **3** field days organized with 909 participants among which **585** women and **324** men

#### 4. Key observations and lessons learned

From discussions with all participants in this field mission, it was clearly proven that field demo plots, field days, on-farm training, open-days and promotional campaigns provide useful avenues for stimulating technology uptake and adoption by farmers and key value chain stakeholders. The outreach disseminating investments result in learning and knowledge sharing among different actors from different backgrounds and have proven to show strong partnerships across the value chain all working towards positive results for the farmers. It is clear that the efforts are reaching many farmers who after attending each event and receive small seed packs of improved varieties, adopt the technologies for their own use. The strength of this success is that partnerships are formed with farmer groups, seeds are scaled out and there is a knock-



on impact of new farmers eagerly waiting to learn and join the movement. Yet despite the tremendous successes observed, there are some areas that continue to need attention in moving the technology deployment forward faster:

- Despite the unpredictability of weather patterns and its hazards, the availability and timeliness of seeds and other inputs well before the onset of the season is so critical to ensuring farmers hit the ground running for successful crop production.
- Farmers are ready to invest in the uptake of drought tolerant varieties due to intermittent drought periods during the cropping season. Thus, the availability and timeliness of delivery of inputs onsite remains challenging. An example is the prevention of fertilizer leaching. Agro-dealers should be sensitized as key actors of the value chain to ensure that farmers get access to inputs at the right time and when needed.
- Seed companies and extension officers believe that the involvement of accredited agro-dealers working in partnership with Seed Companies and farmers throughout the production cycle of maize and their participation in field days is very instrumental to educating farmers on the most promising varieties and other agro-inputs needed to efficiently manage the crops and increase productivity.
- The last mile agro-dealer shops in communities could serve as a solution to this problem to move and distribute seeds and other inputs on a timely basis. Farmers expressed their need to be trained and exchange visits to share experience and get insight of what is being done outside their confined areas to improve on their traditional practices. The TAAT Maize Compact can facilitate this process in collaboration with Seed companies to avail agro-inputs in remote areas where farmers can be served directly and efficiently.
- The success model of public-private partnership for effective agricultural transformation is to expand these interventions to other countries for scaling through AfDB country investment programs. The Maize Compact continues its efforts to engage with over 50 public – private partners for scaling out proven climate smart varieties and other maize technologies for effective agricultural transformation in the maize sector.

## 5. Conclusion

The ground truthing mission team observed that the intervention of the TAAT Maize Compact has benefited from a strategic ecosystem of partnerships that have contributed to increased yields for farmers that has in turn resulted in strong linkages and trust with local millers. Millers offer to farmers ready markets to sell out their produce. When compared to maize landraces, farmers are also expecting to sell a bag of 90Kg of grains for 3,000KES giving them a marginal benefit (profit) of 1,000KES. This expected high price is due to the current maize shortages. To back up testimonials and information given by farmers during the TAAT Maize MEL mission in Western Kenya, the team opted to review journals from previous studies on the farmer adoption and on-farm performance of DroughtTEGO™ (WE1101).

- From two journals; (i) '*Adoption of Climate-Smart DroughtTEGO™ Varieties in Kenya*' by Muinga, G. et al., 2019 and (ii) '*Duration analysis of DroughtTEGO™ hybrid maize adoption in Kenya*' by Marechera, G. et al., 2019, it was emphasized that to accelerate farmer adoption of new varieties,

promotion of expansive on-farm demonstrations and associated field days need to be accelerated and specifically target women and youths. This is a strategy that TAAT Maize team is implementing as mentioned above.

- Another study by Marechera, G. et al., 2019 titled, '*Impact of DroughtTEGO® hybrid maize variety on agricultural productivity and poverty alleviation in Kenya*' concludes that due to its high productivity, *DroughtTEGO™* varieties might have a major role in improving rural household wellbeing through the increase of agricultural income and consequently ability to escape poverty. Information on yield achievement obtained during the MEL mission from the farmer groups that worked with Ms. Margaret Awinja in Kakamega support this.
- Obunyali, C., et al., 2019, further reviewed the on-farm performance of *DroughtTEGO™* maize varieties in a publication titled, '*On-farm Performance and Farmers' Perceptions of DroughtTEGO-Climate-Smart Maize Hybrids in Kenya*'. In the publication, it was concluded that significant yield advantage of *DroughtTEGO™* hybrids was observed over commercial checks in Kenya. It was affirmed that farmers particularly women preferred the *DroughtTEGO™* hybrids because of the stay-green character, whiteness of flour (milling quality), root lodging resistance, drought-tolerance and high shelling percentage. This observation was also seen during the TAAT Maize MEL visit in Western Kenya.

## 6. Recommendations

The Maize Value Chain is a very complex one and takes long to reach the final consumers. There are many actors involved in the chain whose contribution to the success of the value chain from one segment to the other remains a key driver of the technology uptake. The following are thus recommendations for consideration:

- 1) A holistic and comprehensive study should be carried out to understand the functionality of this value chain, quantify the marginal benefits derived from each segment by respective actors and determine the socio-economic factors of success at each segment along the value chain.
- 2) The Compact should continue to work closely with Enablers to create a conducive environment for scaling in areas needed. For instance: working more closely with the Soil Fertility Enabler (SFE) Compact to support farmers in soil fertility management issues, working more closely with Capacity Development and Technology Outreach (CDTO) Enabler Compact to build capacity of the farmer groups, and working with ENABLE-TAAT to address youth entrepreneurship issues building on their current expertise to engage youth in agribusiness, etc.
- 3) It was observed that there is a need for the TAAT Compact implementing agency to organize a forum that will bring together different partners and key stakeholders on the table to discuss the future of the Compact beyond program closure to ensure sustainability of the partnerships. The caliber of the private sector to move forward the value chain is commendable but does not guarantee the sustainability of the program achievements given the reliance on TAAT funding. The expectations from partners is that TAAT funding is indefinite.

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