



FDN
#51

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

The case of Wheat Technology

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



FARA
Dissemination
Notes

www.faraafrica.org | ISSN 2550-9657 | FARA Dissemination | Note 12 : 2020

Citation: Bishaw Z., Debele T., Izzat Tahir I., Diawara B., Eshetu S., Bheenick K., Munoko K., and Abugri B. (2020). Transforming Africa's Agriculture through Enhancing Commercialization of Wheat Research Products: The case of Wheat Technology. FARA Dissemination Notes FDN 51. Pp 1-8

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Forum for Agricultural Research in Africa (FARA)

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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.

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Background

The Forum for Agricultural Research in Africa (FARA), the African Forum for Agricultural Advisory Services (AFAAS), IITA, and International Center for Agricultural Research in the Dry Areas (ICADRA) had organized a technical webinar on September 16, 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 Wheat Value chain led by the International Center for Agricultural Research in the Dry Areas (ICARDA) by acting as a process facilitator in the delivery of the proven technologies at scale.

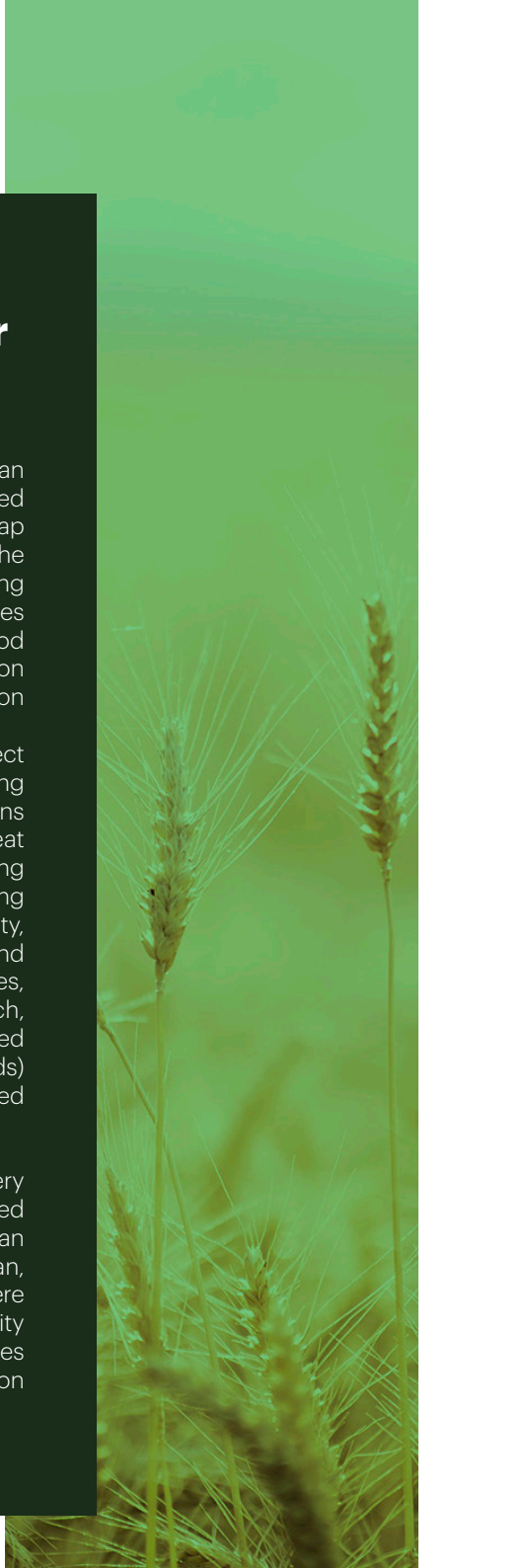
FARA has so far done so through training of trainers (TOT) for Innovation Platforms (IPs) facilitators to help establish Innovation Platform (IP) as the main model for implementing TAAT. In addition, the CDTO Enabler Compact is supporting the compacts develop modular outreach materials for scaling of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

Brief overview of the Wheat Value chain under TAAT

Wheat is a major staple crop for many African countries and 60% of the consumption is imported leading to significant demand and supply gap although there is a great potential to produce the crop locally. Wheat Compact aims at achieving transformational impact and sustainable increases in productivity and production for enhanced food security, economic growth, and poverty alleviation and reduce unsustainable overdependence on imports in target countries.

ICARDA is implementing the TAAT Wheat Project with the aim of scaling up and enhancing adoption of proven technologies and innovations across Africa, expanding domestic wheat production and commercialization for achieving wheat self-sufficiency and also spearheading transformational impact-raising productivity, production, farmers' income, value addition and job creation. In order to achieve its objectives, ICARDA has deployed two-pronged approach, which are bridging yield gap in traditional rainfed wheat production systems (tropical highlands) and taking wheat to new frontiers in irrigated environments (Sahel agro-ecology).

The wheat value chain technology delivery activities have been implemented in the selected and focuses in seven countries of sub-Saharan Africa i.e. Ethiopia, Kenya, Mali, Nigeria, Sudan, Tanzania, and Zimbabwe. The countries were selected based on the agro-ecological suitability and potential of the crop, alignment with countries strategy and government commitment, tradition



of wheat production and presence of value chain actors, opportunities for bridging yield gap and potential for expansion to a new area and domestic production vs import to meet annual demand.

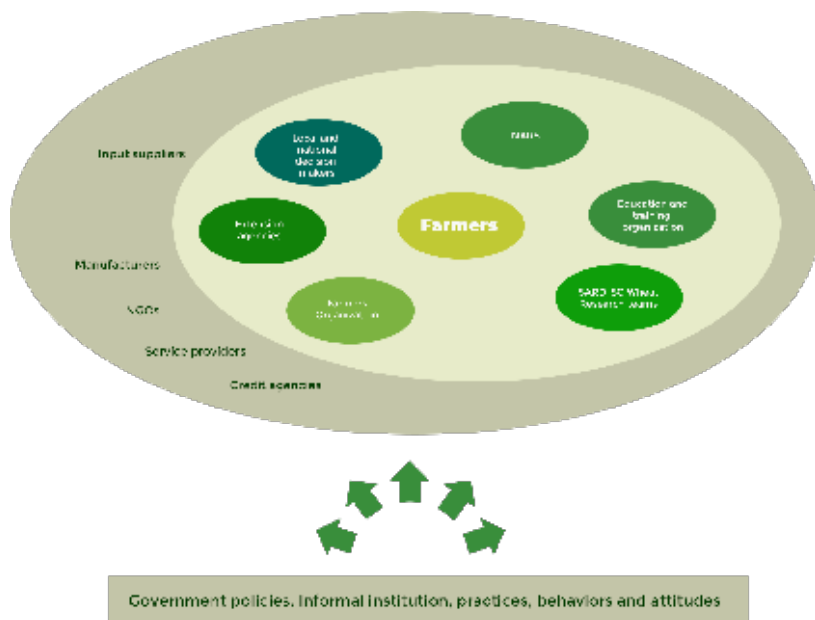
Some of the key achievements gained from the project include: wheat self-sufficiency; area expansion; significant increase in average productivity at IP sites (4.2 tons per ha) and national level (3 tons per ha) across countries; enhanced seed system

innovations; project beneficiaries access to quality seed enhanced; additional job creation for farmers, youth and women in wheat grain production, seed production, value addition and allied services (machine rentals, services); capacity development of farmers, youth, seed experts, development agents through FFS; and use of ICT innovations for advisory services and market information linking farmers to markets.

Business Opportunities Identified in the wheat Value Chain

The Wheat Compact adopted Innovation Platform (IP) approach as a guiding principle in its improved wheat technology validation, popularization and dissemination. The IP framework at strategic (policy) and operational (ground) level provides an excellent forum to bring all wheat value chain actors together and define their roles and responsibilities. Hence multi-stakeholders like farmers, seed producers, inputs providers, extension, research, NGOs, traders, financial institutions,

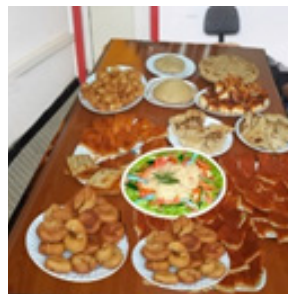
agro-processors, and policy makers are engaged along the wheat value chain. The Innovation Platform facilitates rural entrepreneurship, job creation, empowering women and youth, market linkages and transformation. So, input provision, wheat production, seed production, value addition and service provision are some of the business opportunities areas in wheat value chain where youth and women could benefit.



Wheat Technologies with Potential for Commercialization

The heat tolerant improved wheat varieties which include 45 varieties released across 7 countries (Kenya, Mali, Zimbabwe, Tanzania, Ethiopia, Nigeria and Sudan) are the technologies with a potential towards commercialization. The benefits of these varieties are higher yield of 4-7 tons per ha with a high quality of 13-16% protein

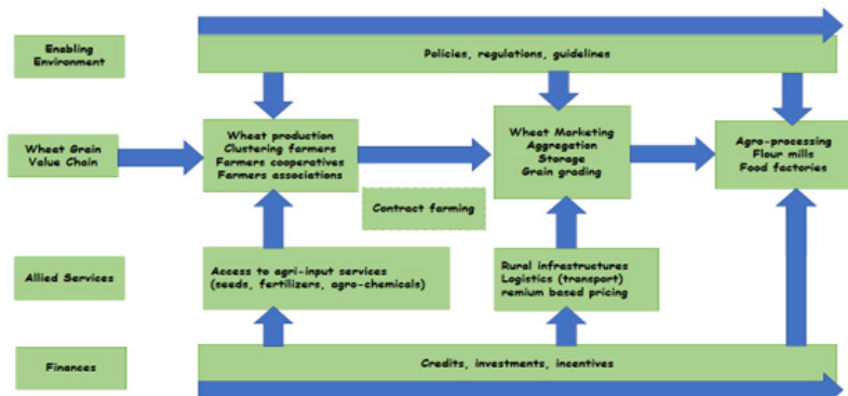
content. According to the pilot results, the mechanized irrigated wheat production based on local, low cost raised based technology resulted in saving applied water by 20%, reduces seed rate by 30%, reduced 20-30% fertilizers, decrease total farming cost by 25% and increase crops yields by 20%.



A business path-way towards commercialization

So far, a total of 37 functional IPs have been established across the target countries and 47 youth/women business groups have been formed having a total of 960 members (30% women). These members have been trained and engaged in establishing innovative wheat agribusinesses. The wheat production with

services and logistics is linking farmers with markets through sector associations (farmers, seed producers, flour millers, consumers). Hence, the business pathway transforming the wheat value chain towards commercialization is through establishing and strengthening the innovation platforms.



Experience from the field and Beneficiaries

a) Fento Youth Grain Producers Association-Ethiopia

Fento Youth Grain Producers Association found in Ethiopia has a membership of 38 farmers (12 women and 26 men). The association produced 166.4 tons of wheat from 32.4 ha of land with an average productivity of

4.8 t/ha. From the total production of heat tolerant improved wheat, the association fetched US\$ 38,674 (1.4 million ETB) and currently linked with Prima Food Processing PLC.



b) Galma Fadama Cooperative Union (GFCU)-Nigeria

Galma Fadama Cooperative Union (GFCU) which is part of the Galma IP in Nigeria was established with about 4,445 farmers and producing wheat as double cropping beside rice and vegetables. The association produced 278 tons of seed with productivity

of 3.5 t/ha. From the total sale of the product, the cooperative gained N 24,000,000 gross revenue and linked with Nigerian Flour Mills Association and diversified crops and agribusiness.



Figure: Rice and wheat cultivation through shallow tube wells technology

c) Large-scale bulking of wheat seed by SSTA-Sudan

Sudan Seed Trade Association (SSTA) was established in 2002 and formed the main pillar of the PPP within the TAAT Wheat Compact and participates strongly in the development and commercialization of the Sudan seed industry with the production of more than 50,000 tons of wheat seed

in Sudan in 2018/19. Today, the country produces enough seed for the entire area and even has excess for sharing with partner countries in Africa. Currently, 5000 tons of certified seed are being prepared by the members of SSTA to be sent to Nigeria as it intends to expand its area massively.



d) Babahu JIGi Community-based Seed Production-Mali

In Mali, the heat tolerant and high yielding wheat varieties introduced by TAAT Wheat Compact in 2 IP sites by selecting and providing training of volunteer seed producers through Farmers' Field School (FFS). Based on the agreement between seed producers and the IP, producers agree to donate 60% of their production in order to

cover costs of inputs and the IP agreed to buy the remaining 40% at the price of 400 FCFA/kg (0.75 \$/kg). Total benefits earned from the seed produced in the two years (2019) and (2020) was USD \$311,310 (FCFA 17255000) and USD \$311,310 (FCFA 172 550 000), respectively.



Hamidou Traore from N'Débougou, IP appreciated the opportunity which allow him to access seed of promising wheat varieties and training on improved cropping techniques and get extra money to afford his family expense.

Contact address:

If you are interested to start your business in wheat production through heat tolerant improved wheat varieties, please contact the following institutions and people:

Dr. Zewdie Bishaw (ICARDA) z.bishaw@cgiar.org Interim-Coordinator of TWC & Head, Seed Section and International Nurseries, ICARDA

If you want to learn more about poultry farming please visit the following sites:

<https://www.icarda.org/>

Acknowledgment:

This outreach promotional material is packaged and developed by Dr. Zewdie Bishaw (ICARDA), Dr Tolessa Debele (EIAR), Dr Izzat Tahir (ARC), Dr Bandiougou Diawara (IRE), Dr. Samson Eshetu (AFAAS), Krishan Bheenick (FARA). Karen Munoko (FARA) and Benjamin Abugri (FARA) through the Technologies for African Agricultural Transformation (TAAT) Programme of the Feed Africa initiative funded by the African Development Bank (AfDB).