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

The case of Sorghum and Millet Technology

By : FARA, TAAT, CDTO and Sorghum and Millet Compact

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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.

## **Disclaimer**

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## Background

The Forum for Agricultural Research in Africa (FARA), the African Forum for Agricultural Advisory Services (AFAAS), IITA and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) organized a technical webinar on September 30, 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 Sorghum and Millet Value chain led by the ICRISAT 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 millet and sorghum Value chain under TAAT**

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Sorghum and Pearl Millet are the main staple food crops especially in Sub Saharan African countries with 80% of cultivated area and more than 49% of food consumption needs. The Sorghum and Millet compact is one of the 15 compacts of the TAAT and works through Innovation Platforms in 7 countries (Burkina Faso, Chad, Mali, Niger, Nigeria, Senegal and Sudan) with the aim of enhancing seed sector through best genotypes and “best-bet” nutrients and water management with Good Agronomic Practices (GAPs) and Integrated Pest Management (IPM) options, building capacities with proven technologies and overcoming the challenge of low production and productivity.

Some of the achievements of the compact include: boosting seed sector in the target countries through production of greater than 4.1 tons of sorghum and 0.83 ton of millet breeder seeds, 153.8 tons of sorghum and 79 tons of millet foundation seeds; greater than 850 tons of sorghum and 540 tons of millet certified seeds and distribution of 7,454 of sorghum and 5,263 of millet small seed packs.

The other achievements of the compact were: boosting crop production in the target countries via provision of training for 4679 actors (including 1,233 women) on GAPs and seed production; cultivation of 1,423,586 ha of sorghum seeds & 284,524 ha of improved millet seeds; provision of training for 3,059 farmers (including 778 women) on improved post-harvest technologies and reaching so far 83,629 direct beneficiaries (including 35,842 women and 129 youth).

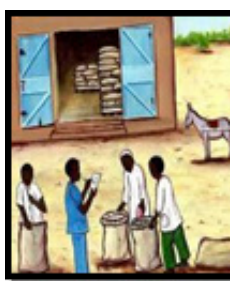






## Business Opportunities Identified in millet and sorghum Value Chain

The dual-purpose sorghum varieties are high yielding (both grain and Stover), and well adapted to farmers conditions and local food processing. Increasing interest of Agro-industries using Stover choppers/grinders to fabricate composite sorghum Stover and cotton grain residues or groundnut/cowpea haulms for animal feed are the business opportunities in the Sorghum and Millet value chain.



Grain production, Stover Processing and Utilization, Storage and conservation of Grains and Stover and marketing are some of the operation in Sorghum & Millet value chain. Hence, Sorghum and millet farming, financial institutions, blending, Agro-input dealing (Seed, Fertilizer, Pesticide, etc.), Agro- processing and trading are business areas identified for farmers including women and youth.

## The technology with a potential for commercialization

The Dual-purpose sorghum varieties are RA-S-622B (Darou), ISRA-S-622A (NGANDA), ISRA-S-621A (NGUINTE), Soubatimi and Tiandougou coura. Those varieties have good quality flour, they produce high biomass and are high grain yielding (2.5-4.0 t/ha). They are varieties with high micronutrient content or

excellent grain quality for brewing, as well as early or medium maturing. The dual-purpose sorghum varieties provide grains for human consumption, high quality stem for livestock feed and stem with juicy sucrose for direct human consumption and industrial use. They have good drought tolerance and stay

green (50% to 61% of progenies) characters as confirmed under Guinean and Sudan-savanna ecologies. The Dual-purpose millet improved cultivars (MISARI 1, NAFAGNON and CHAKTI) are either hybrid or improved populations, bio fortified with Fe and Zn, early maturing, nutritious, white grain, big grain, high yielding

(2.5-4.0 t/ha), and they are good for milling. Additionally, the millet improved cultivars are tolerant to smut, to head miners, tolerant to borers and head miners or resistant to downy mildew, tolerant to striga, and pests.



## **A business path-way towards commercialization**

The Sorghum & Millet Compact is being implemented in seven countries by a consortium of actors including private sector partners like farmers, farmers groups, financial institutions, blenders, Agro-input dealers (Seed, Fertilizer, Pesticide, etc.), Companies, Agro- processors and public-sector such as Policy makers, NARS, Extensionists, seed regulatory and Certification bodies. In collaboration with the extension services the compact delivers technologies, training, and access to services to stakeholders along the Sorghum and Millet value chain, from production to processing and marketing. The Agro-input dealers supply

seeds, fertilizer, pesticide etc, to farmers and farmer groups who produce sorghum and millet for human consumption and high-quality stem for livestock feed. The extension service builds capacities with proven technologies, training, and advisory services to overcome the challenge of low production and productivity. Farmers sell the primary products to processors or assembly traders and processors; assembly traders and farmers group supply their products to retailers and wholesalers. Finally, consumers acquire sorghum and millet grain or processed products from retailers, wholesalers or from processors.

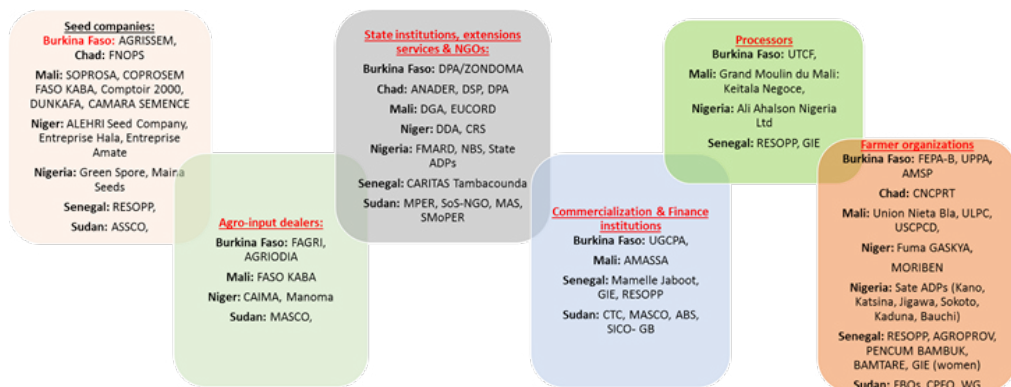


Figure: A business pathway in the Sorghum and Millet value chain through partnership

## Experience from the field and Beneficiaries

### Al-Amel Agricultural Women group Society

Al-Amel Agricultural Women group Society is found in South Darfur State in Sudan. The women's group acquired critical skills in seed production, at the TAAT field school training. They have been able to produce certified seeds at community level under the technical supervision of Nyala ARC research station.



*Fathia Mohamed Ahmed, the society chair lady shared her witness by saying that "Our group produced about 7 tons of quality declared seeds. It is an important breakthrough for the group to start our business. Now our goal is to promote our quality declared seed to NGOs in the state to sell it at premium price. Focus is to grow and to increase agricultural business activities in a near future".*

**Contact address:**

If you are interested to start your business in poultry farming through Sorghum and Millet, please contact the following institutions and people

Fatondji, Dougbedji (ICRISAT-NE) [D.Fatondji@cgiar.org](mailto:D.Fatondji@cgiar.org)

If you want to learn more about Soil Fertility please visit the following sites:

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

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