FDN

#43

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

The case of Cassava Weed Management Technology

By : *FARA, TAAT, CDTO and Cassava Value Chain Compact*

Citation: Abass A., Atser G., Eshetu S., Bheenick K., Munoko K., and Abugri B. (2020). Transforming Africa's Agriculture through Enhancing Commercialization of Cassava weed Research Products: The case of Cassava Weed Management Technology. FARA Dissemination Notes FDN 43. Pp 1-8

Forum for Agricultural Research in Africa (FARA)
12 Anmeda Street, Roman Ridge PMB CT 173, Accra, Ghana Tel: +233 302 772823 / 302 779421
Fax: +233 302 773676 Email: Website: www.faraafrica.org : www.faradatainforms.faraafrica.org
Join the network: https://faraafrica.community/taat_cdto/join

Design By: FARA Knowledge Management, Learning & Communications Unit (publications@faraafrica.org)

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) and IITA organized a technical webinar on October 26, 2020, as part of the Technologies for African Agricultural Transformation (TAAT) Program of the Feed Africa initiative funded by the African Development Bank (AfDB).

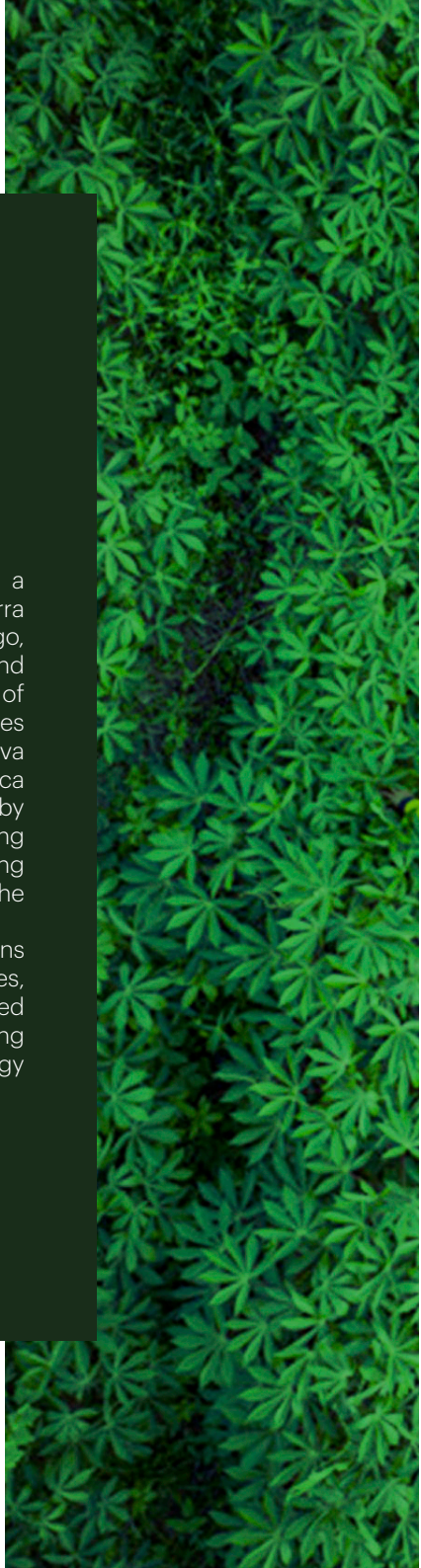
FARA is leading the enabler compact for Capacity Development and Technology Outreach (CDTO) complementing the commodity compacts, such as the Cassava Value chain led by the International Institute of Tropical Agriculture (IITA) by acting as a process facilitator in the delivery of the proven technologies 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 theCassava Value chain under TAAT

The Cassava Compact is led by IITA with a partnership in 12 countries (Benin, Togo, Sierra Leone, Nigeria, Tanzania, Uganda, DR Congo, Cameroon, Rwanda, South Sudan, Zambia and Burundi). As cassava is suited to a wide range of climatic conditions, its toolkit approach varies across agro-ecological zones. The Cassava value chain compact aims to shift Africa towards a sustainable cassava transformation by increasing production, productivity, promoting mechanization, value addition, strengthening market linkage and catalyzing investment in the sector.

Some of the technologies and innovations deployed by the compact are improved varieties, rapid cassava multiplication (SAH), mechanized production and processing, mobile processing system and good agricultural technology practices.



Business Opportunities Identified in the Cassava Value Chain

The objectives of the cassava compact include: raising farm-level productivity, improving the efficiency of processing, increasing market opportunities for smallholders, and catalyzing private-sector investments. In order to achieve the above objectives, various activities were undertaken by different actors in the cassava value chain, which includes, but not limited to, seed graowers producing stem cuttings and then selling to farmers, input provision like fertilizers and herbicides, cassava farming, applying pre- and post-emergency herbicides to control weeds, mechanized harvesting, processing that focus upon the production of high-quality flour and industrial-grade starches, and marketing.

This implies that the seed (cutting) and root production, fertilizer and herbicide provision, herbicide spray service provision, processing, root and stem sales, high-quallity cassava peel processing for animal feed were some of the business opportunities identified in the cassava value chain.

Herbicide Spray Service Provision

Young farmers selling stems

The technology with a potential towards commercialization

The Six Steps to Cassava Weed Management toolkit was developed by the Cassava Weed Management Project and scaled out by Cassava value chain Compact. The tookit has proven to help users to more than double the yield. The toolkit was a complete package that addresses all aspects of good agricultural practices in cassava production.

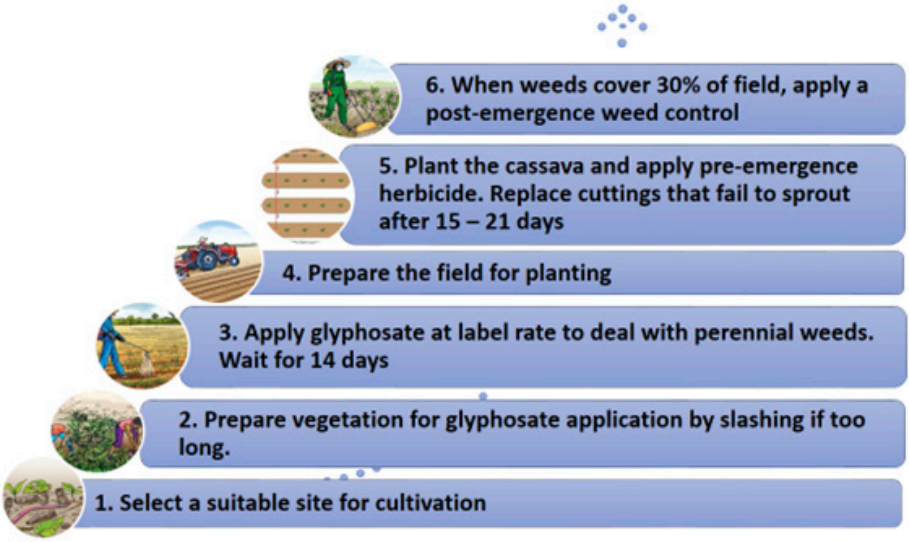
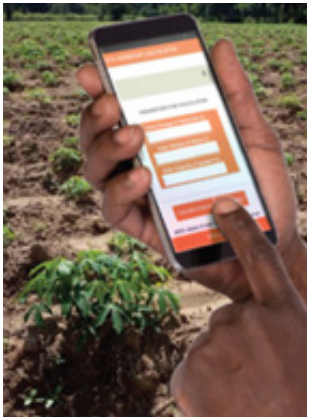


Figure XX: The six steps cassava weed management

After selecting an appropriate field that is not stony or very shallow, does not get water-logged and is not on a slope, we need to clear or slashing the selected field. Then apply a glyphosate-containing herbicide at label rate to deal with perennial weeds and after 14 days plough and make a ridge. After proper land preparation, plant the cassava cuttings and spray a pre-emergence herbicide within 24 hours after planting on wet soil. Finally, apply a post-emergence weed control when weeds cover 30% of the field.



IITA Herbicide Calculator

Farming on Radio

Viamo 3-2-1 IVR

The IITA Herbicide Calculator was also introduced to teach farmers proper calibration and application of herbicides. Radio and video were used as a media to disseminate and scale out the Six steps to cassava weed management toolkit with a listenership of over 2 million. In addition, manuals in local dialects were developed to teach farmers on the safe use of herbicides. The 3-2-1 mobile service allows farmers to have access the Six steps to cassava weed management toolkit developed by the Cassava Weed Management project through an Interactive Voice Response (IVR) system for as much as 10 times in a month free of charge. The aim was to reach thousands of farmers, especially women, with information that would transform their cassava productivity.

The results from the comparative analysis of yield from herbicides versus best practice weeding and farmer practice indicated that, with Six Steps to Weed Management technology, production increased by 27% compared to best hand-weeding techniques and 102% increase compared to typical farmer weeding practice. Hence the benefits of the technology for farmer and youths include improved food security, reduce drudgery for farming families, increased income, more available time and money for other activities, and increased root availability to the processing industry.

Figure: Comparative analysis of yield from herbicides vs best practice weeding vs farmer practice

A Business pathway towards Commercialization

The compact builds strategic alliances with private and public institutions like technology companies, technology delivery institutions, NGOs, NARES, other government agencies and private sector to drive the transformation successfully. All these partners meet as a stakeholder to design/prioritize technologies, select specific agro-ecologies, train national experts to reach millions of beneficiaries, deploy the technologies, participate in the outreach, and finally, monitoring and evaluation. The Compact also facilitate relevant chemical companies to register identified herbicides through the provision of data and linkage to relevant regulatory agencies. It also provides intensive training of spray service providers on safe-use and handling of herbicides.

Success story from the field and Beneficiaries

Weed management by youth: Tope Olabokunde-Nigeria

Tope is a youth from Nigeria who is one of the beneficiaries under the TAAT Cassva vale chain compact. He has been engaging in production of cassava processing using the six-step cassava weeding management. He is owning the Cassava agro processing factory where he supply inputs for his factory. He produces 10,000 kari/gari per day to be supplied for consumers in the country. In order to produce these products, the factory needs 40 tons of cassava supply every day. For this, he cultivated 20 ha of land in three day using mechanical farming. Weed was a serious challenge for Tope before he applied the six-step cassava weeding management. Practical demonstration and training was provided by TAAT staff on the six-step cassava management. Initially, Tope used to produce 10 tons per ha to 20 tons per ha after the application of six-steps cassava management. Since the factory is demanding more inputs, they were engaging out grower farmers to meet the demand of the factor. They are now providing extension services and cassava stems for farmers.

Contact address:

If you are interested to start your business in Cassava production through a six step cassava weed management, please contact the following institutions and people:

Adebayo Abass (IITA), A.ABASS@cgiar.org

Godwin Atser (IITA), G.Atser@cgiar.org

If you want to learn more about poultry farming please visit the following sites:
https://www.iita.org/

Acknowledgment:

This outreach promotional material is developed by Dr. Adebayo Abass (IITA), Dr. Godwin Atser (IITA), 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).