

Digital extension at IITA: The case of the Cassava Weed Management Project

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Background

The IITA managed Cassava Weed Management Project (CWMP) assessed alternative approaches to managing weeds in cassava fields in Nigeria and recommended steps farmers can take to reduce the drudgery of hand-weeding and improve their yields and profitability. The project was led by the International Institute of Tropical Agriculture (IITA) working in collaboration with Nigeria's National Agricultural Research and Extension Systems, and two Nigerian universities, each situated in a different agro-ecological zone. The project assessed: (1) agronomic measures to control weeds, such as spacing and land preparation; (2) chemical measures to control weeds, i.e. herbicides; (3) mechanical measures, primarily motorized weeders, and (4) combinations of these approaches. Research on each of these measures has generated useful results. Generally, the experiments have been exciting and promising. These experiments involved testing the performance and safety of a suite of new herbicide formulations shared by international agrochemical companies but not yet tested in cassava. Over a hundred field trials helped identify pre-emergent herbicides that can be applied at the time of planting to inhibit weed germination. Use of these products resulted in average yields that are 50% higher than those from hand weeding. Based on the findings of the research, the team embarked on dissemination in collaboration with partners. Dissemination efforts were premised on the fact that access to knowledge and information plays a central role in improving farmers' livelihoods and raising their agricultural productivity.

Approach

The extension team on the project developed a toolkit known as the Six Steps to Cassava Weed Management. The toolkit was basically a set of recommendations which when farmers follow should be able to realize cassava yield ranging from 20 tons and above as opposed to 10 tons per ha. Several approaches were tested including the traditional extension system ("training and visit") to disseminate the toolkit. However, the (T&V approach) was found to be expensive and constrained by a low extension agent-to-farmer ratio, poor mobility, and weak capacity.

Other alternative approaches used by the project to share information on best weed management practices included interactive voice response (IVR), short messaging service (SMS), and mobile phone applications (WhatsApp, smartphone applications), plus radio, Television programs, video screenings and social media platforms such as Facebook. The project collaborated with Viamo to set up the IVR system.

Generally, the use of digital extension tools was adopted to take advantage of the mobile subscriber-base in Nigeria. In Nigeria, mobile phone subscriptions are about 150 million and 97.2 million persons use the internet. Furthermore, the availability of cheaper smartphones in Nigeria has given access to these phones to about 15 million persons, making it possible for this population to access improved weed control practices on mobile phones and platforms such as WhatsApp, YouTube and Facebook messenger. Furthermore, in 2017, the CWMP obtained data from the *Media Planning Services* indicating a listenership of about 1.7 million persons on Radio Benue, a public radio station located in Benue State. Our dissemination approach capitalized on these data from mobile phones, internet and radio in Nigeria to disseminate research findings on a regular basis to farmers. This year, the project is pushing videos as an extension tool in collaboration with local facilitators and extension agents.

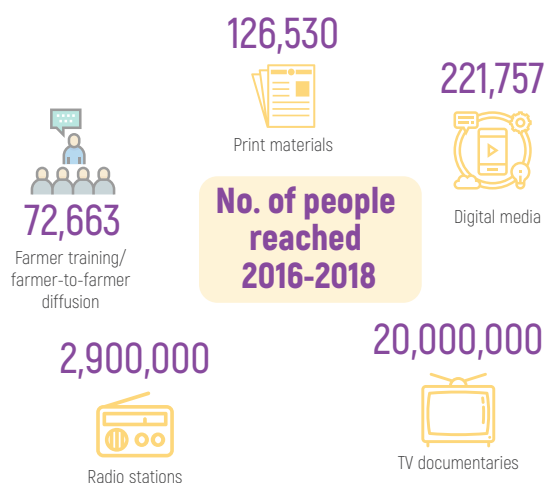


Digital Extension Plan of the Cassava Weed Management project (now African Cassava Agronomy Initiative)

Medium	Tactics
Radio and Interactive Voice Response (IVR) of Viamo	Radio is the most widely used channel of information in rural areas. We have weekly talks on weed management and other aspects of cassava production. Jingles have been developed and are being aired. The IVR complement the radio programs.
Linking with existing projects: Technologies for African Agriculture Transformation (TAAT), GIZ, and BASICS	We leveraged and built synergy with existing projects such as TAAT Cassava Compact and Cassava Seeds System Project (BASICS). Videos and extension materials are being shared with TAAT facilitators and Village Seeds Entrepreneurs (VSEs) of BASICS (another project known as Cassava Seeds System). Video viewing centers in local communities provide opportunity for dissemination of agricultural information.
Telephone apps: (WhatsApp, SMS)	Mobile phones are powerful tools that are transforming communities. We are sharing videos with a network of 210 extension agents who in turn share with farmers. Short messages on weed control tips are also being shared with farmers.
Agro-dealers, Chemical companies (Bayer, Syngenta, UPL and Saro AgroSciences), Spray Service Providers	Private sector role is key in the sustainability of our extension work. We are working with agrochemical companies to print 50,000 copies of the “Six Steps to Cassava Weed Management” toolkit this year. We are also training agro dealers and spray service providers on the Six Steps. In most communities, the agrodealers and spray service providers act as extension agents to farmers, providing advisory services.
Social media (LinkedIn, Facebook, Twitter, YouTube)	There is a growing attention to bring young people into agriculture to address unemployment and create wealth. Fortunately, young people have a strong attachment to social media. We have capitalized on these platforms to share extension messages to young farmers.
Demos	We have set up a couple demonstration plots across several communities in collaboration with local extension agents. Farmer field days are conducted on the demo plots to transfer knowledge to farmers. The demos also draw government officials, agrodealers etc during farmer field days.

Results

By the end of 2018, our digital plan (without IVR then) had reached 73,000 persons through training, visits to demo sites, and farmer-to-farmer diffusion. 124000 materials were printed and shared with farmers (directly and through the agrodealer network), and another 220,000 farmers were reached through other digital platforms such as facebook, twitter, whatsapp, etc. Our programs on radio reached a listenership of 2.9M and a viewership of 20M of television. See figure beside:



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