

## Improving cassava production and supply systems

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**COUNTRY:** Democratic Republic of Congo

**SECTOR:** Agriculture

**FOOD SECURITY DIMENSION:** Accessibility and Availability

### CONTEXT

The persistence of hunger and food insecurity in the Democratic Republic of Congo (DRC) are due to a combination of factors, with devastating effects such as collapse of the purchasing power of the population, population growth, and a decline in agricultural production.

Nearly 70% of the Congolese population lives below the poverty line, on less than one dollar per person per day (GPRSP, 2007). DRC is facing challenges in all food security aspects. Not only does it have to cope with insufficient supply of food (which raises the issue of availability), it must also deal with the fact that when food is available, its access to the population remains a major obstacle. Hence the need for DRC to address this situation which is a systemic problem in the current unsustainable food system unable to meet the needs of the population in a post-conflict environment.

Indeed, cassava consumption in DRC is the highest in the world. Each Congolese consumes an average of 453 kg of fresh cassava per year, the equivalent of 145 kg of cassava flour. Cassava leaves are the leading leaf vegetables consumed in DRC, and Kinshasa in particular, where a household of 7 to 8 people consume about 4 kg of cassava per week.

In addition, cassava leaves are rich in protein (6-8 mg/g), iron (3 mg/100g), calcium (200 mg/100g), vitamin A (10.000 to 13.000 IU) and vitamin C (140 mg/100g). There is a wide variety of cassava byproducts for example unfermented flour (for baking, pastry, and biscuits), pulp, chips and cassava leaves, etc., as well as industrial byproducts (which are not only food products), such as starch, alcohol and ethanol (for biofuel).

The Association of Cassava Producers and Processors (APTM) is one of the major stakeholders in the cassava sector in DRC; however, the capacity of its processing by the appropriate structures remains low. Indeed, the Association had established only two cassava collection and processing centres on the *Plateau des Batékés*. These two centres were not enough to collect and transport fresh cassava for the processing of cassava flour.

The small-scale productivity of APTM members ranged from 4 to 6 tonnes of cassava per hectare, whereas it was possible to obtain 12 to 17 tonnes of cassava per hectare (which corresponds to the average of the global industry). Indeed, only 20% of the cassava currently produced by smallholders is available for processing.

The smallholders' associations were not well structured to enable them to promote production by cassava farms. This is because they did not have access to the appropriate information and knowledge. Indeed, they do not have access to transport (market and they use bicycles for transportation) for their products, which makes it difficult for them to take their products to the market. Furthermore, post-harvest losses are very high due to limited cassava processing skills.

### CHALLENGE

Consequently, in efforts to increase smallholder production and thereby enable people to live better on their harvest, SNV decided to intervene in the sector. The decision was also based on the scale of cassava consumption in DRC and the lack of coordination and organisation of rural producers working in isolation.

## **CLIENTS AND PARTNERS**

SNV, in collaboration with APTM (Association of Cassava Producers and Processors), has established six cassava producers' cooperatives: the MENKAO farmers' cooperative (CAM), the LISA-LIYA PONGWENE cooperative (COOPEL), the *lèves-toi et marche* cooperative "TSHURUTSUE" in the mother tongue (COOPET), the BOLINGO farmers' cooperative (COFEBO), the ELIKIA BUANTABA cooperative (COOPEB), and the KINGAWA MFUMU-NKETO cooperative (COOPKI).

All these cooperatives are mainly responsible for promoting sustainable cassava growing. Specifically, their objectives are to support and supervise smallholder farmers in cassava cultivation and processing, disseminate technologies and techniques so as to encourage processing of the product, and provide a market for cassava and its byproducts.

These cooperatives used to encounter serious problems due to difficult access to cassava processing units, transportation of products from production areas to consumption centres, as well as marketing. It should be noted that 60% of the producers are women. Furthermore, it is interesting to work with them because of their flexibility and their capacity to adapt to development innovations. In addition, they have easy access to usable land (availability of arable land).

In addition to SNV, other structures such as IITA, INERA, SENASEM, IPAPEL and USAID currently provide support to the cooperatives. For example, the International Institute for Tropical Agriculture (IITA) is a technical partner which assists the association to have access to cassava varieties resistant to mosaic virus and equipment for appropriate processing. USAID has provided funding to some producers to install processing facilities. The National Institute for Agronomic Studies and Research (INERA) has been involved in the dissemination of improved cassava varieties. The National Seed Service (SENASEM) is involved in the certification of cuttings. Lastly, the Provincial Inspectorate of Agriculture, Fisheries and Livestock (IPAPEL), a government department, provides technical guidance.

## **INTERVENTION RATIONALE AND METHODS**

SNV then decided to work with APTM in two provinces of Bas Congo (Kimpese and Songolo region) and Kinshasa (Plateau des Batékés). Some value chain development services (production, transportation, processing, and marketing) that can address constraints on cassava production and supply systems were rolled out. Furthermore, the services were tested in Equateur Province (Bolomba and Basankusu region) with local capacity builders BOSANGE (Bolomba and Basakusu region) and MONGI (Bikoro and Ingende region). The following package of value chain facilitation services underwent initial tests in 2011: improvement of productivity, facilitation of SME access to credit to increase the number of cassava processing units, and links to markets.

To achieve the expected outcomes, a number of technical support activities were carried out, namely: selection and preparation of cassava farms, dissemination of improved cassava varieties, training of trainers, sensitization of producers on the benefits of cooperatives, training on aspects of leadership, governance and financial management of a cooperative, and coaching on the preparation of business plans with Small and Medium-sized Agricultural Enterprises.

The dissemination of new varieties and good cultivation techniques through the training of trainers has helped to create many farms managed by producer cooperatives (empowerment). Intense sensitization on women's economic contribution as primary stakeholders of the cassava sector (gender roles) in the community has helped about 60% of women to be involved in the cassava sector. In this regard, cassava cultivation, through its various links, has become a real income and employment generating activity that can have an impact on several social aspects.

## **OUTCOME**

SNV has supported APTM in developing 31 hectares of cassava farms. By December 2012, the average production of fresh cassava is expected to stand at about 310 tonnes following the use of four improved cassava varieties.

Appropriate farming techniques and improved cassava varieties for smallholder producers have helped to increase average yields from 5-7 tonnes/ha to 10-15 tonnes/ha. This increase has guaranteed food access and availability.

### **• Availability**

This intervention contributes directly to improving the food security situation in the selected areas. The four new early-maturity high-yield cassava varieties are now available locally.

### **• Accessibility**

It also contributes directly to improving access to food for consumers in large urban centres such as Kinshasa, Matadi and Mbandaka. Following the organisation of smallholder farmers into cooperatives, the latter have demonstrated their great capacity to market and sell large quantities of cassava on the market at lower prices.

Eleven (11) training sessions, with 60 permanent trainers in farming techniques, have provided farmers with the knowledge they need to increase their yields, while taking into account the environment. In all, 1695 producers have benefited directly from the training in profitable farming techniques.

The project helped farmer organisations to link up with institutions such as INERA, SENASEM and IPAPEL for technical support and guidance.

In order to strengthen and promote the cassava sector in *Plateau des Batéké*, six (6) legalized cooperatives with several cassava producers have been established to meet the numerous challenges of the producers.

Five (5) Small and Medium-sized Agricultural Enterprises (SMEs) have prepared their business plans to submit to Microfinance Institutions and Banks for loans. Through this mechanism, the SMEs will promote the purchase of products of producers grouped in cooperatives.

The selection of APTM as the main stakeholder and the identification of their real needs (analysis and diagnosis of the client's problems) allowed for effective contact with smallholder farmers and facilitated their structuring so as to have a global perspective on the promotion of the cassava sector. By building capacity in participatory diagnosis of the cassava sector (market, mode of transportation, processing, and production), the SNV approach and intervention model highlight the intervention method in each link of the sector. The involvement and participation of INERA, IPAPEL, and SENASEM, which are government services, make it possible to provide answers to farmers' technical questions (appropriate cost-effective farming techniques, seed farm standards, access to improved profitable varieties, etc.).

## **LESSONS LEARNED**

It should be noted that farmer field schools (FFS) have been established in all the selected sites of the project areas. This was largely due to interactions with community leaders, who were willing to provide land as their contribution to the project. The community members were willing to give their time to till, prepare cuttings and maintain their farms.

Women's participation in the project was much higher than originally expected (from 30% to more than 60%) because APTM is largely an association that promotes women's participation (1,695 farmers, comprising 1,195 women and 500 men).

The creation of cassava multiplication farms required further analysis to see if access to quality tuberous roots had been improved where they had also been successfully created. This usually depends on the establishment of networks of trained farmers to train other farmers.

The promotion and establishment of agricultural cooperatives proved to be more difficult to achieve. This is certainly because of a number of interrelated factors, such as low levels of education and literacy of the target participants, reluctance of the community to work together, and LCB limited experience and expertise in the creation of operational cooperatives.

Private sector participation in buying fresh cassava and the government's participation (INERA SENASEM, and IPAPEL) in ensuring replication and adoption of new technologies are certainly not negligible.

The community's contribution (land) is justification for their ownership of the project. Women's targeting and participation seem to be key factors of this project.

### **PICTURES AND QUOTES**

"I wish to thank SNV for the partnership with the Association of Cassava Producers and Processors and for enabling us to be more effective in reaching small farmers." **Marie Claire Yandju, Professor at the University of Kinshasa and APTM Coordinator.**

"SNV did an amazing job in establishing field farm schools; they really stand out as capacity builders for farmers." **LCB: Mulitina consulting firm, which conducted the evaluation of the agricultural programme, 2012**



**Field Farm School/DRC Timber Yard/DRC Practical Training in FFS/DRC**

### **SUSTAINABILITY**

Project ownership by APTM through encouraging producers to adhere massively to the introduction of a large platform of cassava producers is a sign of empowerment and effective project sustainability.

Relations (service and commercial) created through the participation of government institutions and the market's willingness to buy is also a sign of sustainability. However, the sustainable provision of services by government institutions is doubtful because they do not have the means to do so outside the project. The greatest aspect of sustainability is the supplier contract concluded in Bas Congo between KITONA military base and APTM (the military base concluded a supply order with APTM to deliver 19 tonnes of cassava chips), with the first delivery of 9 tonnes already made. We hope this type of contract will be continuous. Their capacity to respond to market demands will undoubtedly require them to increase their production.

Family farms are trying to assert and position themselves, and thereby take control of their destiny. Through producer organisations, they are increasingly participating in decision-making, and therefore in developing agricultural policies that directly affect them. In their efforts to take their fate in their own hands, they are forced to become autonomous.

The financing of the value chain and the market link component of this intervention have not been considered in this paper because these activities began in 2012 and are essential for scaling the initiative. Sustainable peace and security are vital for smooth continuation of this project.

As regards the possibility of mobilising financial resources, the International Finance Corporation (World Bank) is very interested in participating in this project under capacity building for Small and Medium-sized Agricultural Enterprises (entrepreneurship, access to funding to buy cassava processing equipment, marketing and packaging of the product, product certification, and market study).