

A regional network of *multi-stakeholder platforms* for a participatory evaluation of banana and plantain varieties

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Plantain is one of the pillars of food security in Central and West Africa's rain forest zone, which produces 45% of the world's plantain. In order to help improve banana and plantain, the INNOBAP project has set itself the goal of testing and introducing into that area new and more productive varieties that are better suited to the constraints and expectations of farmers, processors and consumers than those now being grown.

Plantain is consumed on the spot or processed and sold on local and regional markets, but it is also sold on city markets and exported. In Central and West Africa, almost all plantain is produced by smallholders, whose yields are very low. The economic and social impact of plantain enhancement will therefore be substantial.

It is estimated that the technological innovations developed by researchers should allow yields to be increased from the current 4-7 t/ha/yr to 20-25 t/ha/yr. In particular, the introduction of new varieties, hardier, more productive and with good cooking qualities, could make a considerable contribution both agronomically and commercially. Once widely disseminated, such improvements should have economic and social spin-offs of great benefit to the region.

CARBAP acts as the cornerstone of the project

To help implement these innovations, the INNOBAP (*Innovation on banana and plantain*) project entitled "A Regional Network of Dialogue and Exchange Platforms to Improve the Identification of Farmers' Needs and the Dissemination of New Varieties of Banana and Plantain" has been implemented by the African Research Centre on Bananas and Plantains (CARBAP) with CIRAD support. Its purpose was to establish a network of multi-stakeholder platforms devoted to exchanges and cooperation between the actors of the plantain value chain: participatory evaluation and dissemination of new banana and plantain varieties. Eight platforms were created in the four participating countries: Benin, Cameroon, Gabon and Guinea.

CARBAP has a world-class reference collection of more than 650 varieties of banana and hosts a regional genetic improvement programme that develops hybrids from local plantain cultivars. At stake in this project, for CARBAP and CIRAD, was the identification and promotion of the most appropriate varieties in view of end users' expectations, through the cooperation of all value-chain stakeholders.

Governance by stakeholders and multi-stakeholder sociotechnical platforms

In each of the participating countries, two platforms were created (one in the peri-urban zone, the other in the rural area) in places relevant to the plantain value chain: Ambam and Kombé (Cameroon), Oyem and Ntoum (Gabon), Coyah and N'Zerekore (Guinea), and Tori-Bosito and Zé (Benin).

Each platform was designed as a sociotechnical undertaking with a "technical" component whose focus was agronomic and post-harvest testing of a range of new banana varieties and a formal consultation, exchange and sharing framework involving researchers, extension agents, NGOs and various user categories (planters, processors, restaurateurs, nurserymen, merchants, etc.). The partnership, which was managed by the representatives of value chain stakeholders, was organised on the basis of the following six principles of its self-designed charter: legitimacy, competence, efficiency, democracy, solidarity and transparency. •••



▲ Two plantain cultivars were particularly favoured for their culinary versatility and for their large fruits and bunches, crucial to their market value.

Each platform consisted of two main organs:

- a steering committee (SC) with a membership of 5 to 6 persons representing various stakeholder categories;
- a Local Users and Experts Association (LUEA) with 20 to 30 members wishing to share their experiences and having expertise in the various activities of the value chain (farmers, researchers, extension agents, etc.).

The overall SC mandate was to accomplish the platform's ultimate purpose, by defining orientations and making the necessary strategic decisions: ad hoc objectives, action plan, funding, programming, distribution and promotion of results, to keep the process going...

Each platform's field organisation was structured on a mother-and-baby model consisting of two entities:

- a common reference plot (CRP or "mother plot") with 10 banana varieties to be evaluated during the project's initial phase;
- a network of individual evaluation plots (IEPs, or "baby plots") belonging to the pilot farmers. Each of the 20 IEPs was to test three varieties chosen among the 10 varieties grown on the CRP.

The decision on where the CRPs would be put up was made in consultation with the local actors and on the basis of their accessibility and whether they allowed for varietal evaluation meetings and workshops to be held after the harvest. The selected fields were made available to the platform by farmers' associations, agricultural development agencies, NGOs or individual farmers. Individual evaluation plots were as volunteered by farmers, preference being given however to geographic proximity so that travel and exchanges between stakeholders would be easier.

Field and culinary evaluation of the varieties

Evaluation and selection of varieties proceeded on the basis of agronomic criteria in the field but also on the basis of culinary qualities and usage constraints related to on-site consumption, transport, processing or marketing of fresh or processed produce.

For purposes of agronomic field evaluation, the LUEA was invited by the SC to make an overall evaluation of the varieties on the CRP at key stages in the banana production

cycle (growth, flowering, harvest). Though there was some variability depending on the platform, the main evaluation criteria used by farmers were: hardiness, drought tolerance, resistance to foliar diseases, fruit and bunch size, ratooning, cycle duration and pseudo-stem size. The order of priority of the criteria varied from researchers to farmers but in the aggregate, both partners have the same priorities.

After the harvest, the evaluation done by the LUEA focused on bunch size, the fruits' physicochemical and sensory qualities (size, length, colour and firmness of the pulp), and the culinary properties of the various varieties (the essential criterion). In cooperation with the processing and farming operations involved in the project, researchers and extension workers developed taste tests based on several protocols and on recipes for dishes popular in the host regions.

Likewise, farmers having IEPs did their own agronomic and taste tests on the three varieties received, at home with their family, friends or neighbours. They freely gave their opinions on those varieties' culinary properties according to their own acceptability criteria, in order to select varieties that met their

► *Farmers did their own taste tests at home with their family, friends or neighbours giving their opinions on culinary properties of varieties used according to their own acceptability criteria.*



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concerns (local consumption, sale on local markets, sale to processing, sale to wholesalers for city or regional markets, etc.).

In all, 215 persons took part in the agronomic and post-harvest appraisals and shared their assessments of 30 banana and plantain varieties.

Outcomes and lessons learned

The project's overall goal was achieved, as it conducted a participatory evaluation managed by value chain stakeholders and established a regional multi-stakeholder partnership system. The platforms served as loci for learning and training on banana growing, but also as a formal agency for cooperation between civil society and researchers, to promote the exchange of scientific and traditional knowledge of the different varieties. In that way, new light was shed on the interactions between researchers, outreach agencies and associations of value chain stakeholders. A further outcome was enhanced awareness among all concerned of the need to organise to implement a common policy.

Value chain stakeholders enthusiastically took part in the evaluation workshops and are in general pleased with the varieties introduced by the eight platforms. Two plantain cultivars selected by CARBAP were particularly favoured for their culinary versatility and for their large fruits and bunches, crucial to their market value.

A few plantain hybrids were favoured for their resistance to foliar diseases, their small pseudo-stem size and their usefulness in certain recipes. One cooking banana cultivar caught the attention of chip manufacturers because of the exceptional width of its fruits. Several farmers adopted new varieties that they are now selling on local markets.

As farmers' and processors' groups have recommended, the introductions of other new varieties by CARBAP through the platforms will be further developed taking into account the expectations expressed and the lessons learned from this project.

In methodological terms, the INNOBAP approach based on the concept of "mother-and-baby trials" has proved its worth. As it requires little in the way of investment and only simple cooperation and facilitation techniques, it is easily reproducible and will benefit civil society directly.

However, beyond these successes, some questions have yet to be answered, such as the platforms' management independence vis-à-vis the research organisations, the inadequate flow of information between stakeholders and platforms, and above all the system's viability. During the review workshops, solutions for better management and enhancement of the system were put forward. The main challenge is to keep the system running and keep up stakeholders' motivation while making it available to other operational areas, to ensure a more meaningful impact on production and on the whole value chain.

To that end, lenders and public authorities will have to create the conditions for the platforms to be sustained, as has already been requested by stakeholders at the local and regional levels—which in turn will mean building stakeholders' capacity and creating new income-generating activities. In that connection, it should be noted that in response to a CARBAP request endorsed by the Central African Economic and Monetary Community (CEMAC), CIRAD and the Subregional Platform of Farmers' Organisations in Central Africa (PROPAC), the European Union in 2009 approved a grant in aid of the implementation of plantain innovation platforms in Central Africa. ■

Partnership

Lead organisation: Central African Research Centre on Bananas and Plantains (CARBAP, Cameroon)

Partners:

■ **Benin:** Institut National des Recherches Agricoles du Bénin (INRAB), Union des Producteurs du Sud (UPS), Groupe d'Appui, d'encadrement et de Recherche en milieu réel au Sud du Bénin (Germe), Centre régional de promotion de l'Agriculture (CeRPA), Programme spécial pour la sécurité Alimentaire (PSSA)

■ **Cameroon:** Institute of Agricultural Research for Development (IRAD), Service d'Appui aux Initiatives Locales de développement (SAILD), Cameroon Gatsby Trust, National Agricultural Extension and Research Programme (PNVRA), Groupement d'Initiative Commune Ngo Som, Fédération des Unions de Groupements d'Initiative Commune de la Mvila, Groupement d'Initiative Commune PAPES (plant propagation, southern Cameroon), project for the promotion of professional agriculture (PROMOPA)

■ **Gabon:** Centre National de Recherche Scientifique et Technologique/Institut de Recherches Agronomiques et Forestières (CENAREST/IRAF), Institut Gabonais d'Appui au Développement (IGAD), Jardin d'Eden, Tartare Plus, ANFEKOM, Concertation Nationale des organisations de producteurs (CNOP/Gabon)

■ **Guinea:** Institut de Recherche Agronomique de Guinée (IRAG), Chambre régionale d'agriculture de Guinée forestière, Chambre régionale d'Agriculture de la Guinée Maritime (CRA/GM), Coopérative des producteurs de banane de Coyah (Coop-Bac), Ferme Fanta Binta Kadiatou (FABIK), Union des Producteurs de Bananes de Macenta (UPBM), Union des producteurs de Fruits de Guinée Maritime (UPFGM), Union des Producteurs de bananes de Nzérékoré (UPBN), Chambre Régionale d'Agriculture de Guinée Forestière (CRA/GF)

■ **France:** Agricultural Research for Development (CIRAD), Université Montpellier 3

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