



INNOBAP: MULTI-STAKEHOLDER INNOVATION PLATFORMS FOR THE PLANTAIN VALUE CHAIN

BACKGROUND

General context

The plantain is a staple food crop produced throughout the year in the humid zones of Western and Central Africa and is of strategic importance in food security. It is mainly grown on poor, small family holdings using fairly inefficient traditional farming systems and has yet to benefit to any substantial degree from innovations developed by research: hence the low yields, aggravated by the continual reappearance of diseases and pests. Nonetheless, the plantain is a major source of income for millions of growers and intermediary traders (600 000 small farmers and 40 000 traders of various types in Cameroon alone). The growing gap between supply and demand that has come about during the past 20 years has almost turned plantain into a luxury product in the subregion, at least for the poorest inhabitants, whereas potential yields could be increased tenfold if various factors were brought under control. The potential for increased yields on family farms (a rise from 4-10 tonnes/ha/year to 25-30 tonnes/ha/year with an improved technical package) could thus be better exploited in order to meet the crucial challenges of food security and poverty eradication in Western and Central Africa.

Situation to be addressed

The African Research Centre on Banana and Plantain (CARBAP): a regional centre of excellence thanks to the commitment of a number of states to promoting the effective sharing of resources, expertise and experience with a view to agricultural development of the whole subregion.

The various States' interest in plantains led to the signing of an intergovernmental agreement in February 2001 establishing CARBAP, which can thus be seen as a major tool for regional cooperation on agricultural research and development. CARBAP was the result of a revamping of the Regional Research Centre for Banana and Plantain (CRBP) established in 1989 on the initiative of the International Cooperation Centre on Agrarian Research for Development (CIRAD) and Cameroon's Ministry of Research in order to counter the serious threat posed to the region's plantains by parasites. CARBAP has now been adopted as a regional centre of excellence by the West and Central African Council for Agricultural Research and Development (WECARD) and the Economic and Monetary Community of Central Africa (CEMAC), with a mandate covering Western and Central Africa and a three-pronged thrust focusing on research,

training and support to development. Its central mandate is that of boosting the capacities of national agricultural research and extension systems with regard not only to research and development, but also to the assumption of ownership of innovations. CARBAP seeks to support the development objectives of banana and plantain value chains at the regional level, with an anticipated impact on the major stakeholders in the chain, including growers. It is a specialized centre with a comparative advantage in its field of intervention, mobilizing resources at both regional and international levels to support these partners in the context of regional projects. Its governing and scientific councils are made up of representatives of African countries, subregional organizations, donors, the scientific community and civil society.

Its status as a CEMAC and WECARD centre of excellence and its key role in the International Network for Improvement of Banana and Plantain (INIBAP) has helped CARBAP to establish a considerable network of partners and dialogue partners, and develop a wide-ranging partnership with research and extension bodies, development projects, farmers' organizations, NGOs, processors' and traders' groups, economic organizations etc. It manages and disseminates information from various networks and provides secretarial and extension support for the Musa Documentation and Information Network for Africa (REDIMA). With its six laboratories, its large global reference collection of varieties, its varietal creation programme and its facilities for horticultural multiplication, CARBAP is an important provider of training, supplying short courses and giving field support to extension workers, producers' and processors' groups and various agro-entrepreneurs in small and medium-sized agricultural enterprises. The people trained then hand on the innovative technologies learned from CARBAP. The centre also receives about 20 students, researchers and research technicians of various origins each year. WECARD and Bioversity International have approved CARBAP as a regional centre for the multiplication and distribution of banana seedlings, so that it plays a key role in the conservation, multiplication and distribution of certified plant material in Western and Central Africa. Almost 50 000 vitroplants have been distributed to a dozen African countries in the past 15 years and have been used as base material for mass multiplication using horticultural techniques developed by CARBAP.

INSTITUTIONAL INNOVATION

The INNOBAP project: an experience in varietal innovation in plantains in Western and Central Africa

Objective

The INNOBAP project seeks to bring about varietal innovation in plantains by establishing a network of multi-stakeholder platforms to facilitate coordination and the identification of the needs of stakeholders in the value chain in order to give the CARBAP regional programme for varietal selection and distribution a clearer focus. Its specific objective is that of carrying out a participatory evaluation and distributing varieties suited to the needs of various target groups. Eight platforms have been set up, two in each of the four countries taking part in the project (Benin, Cameroon, Gabon and Guinea). The project is coordinated at regional level by CARBAP with the support of CIRAD and has involved more than 50 such organizations as national research centres, agricultural extension bodies, universities, NGOs and farmers' and processors' organizations, and also such individual stakeholders as nursery managers, wholesale and retail traders, transporters and caterers.

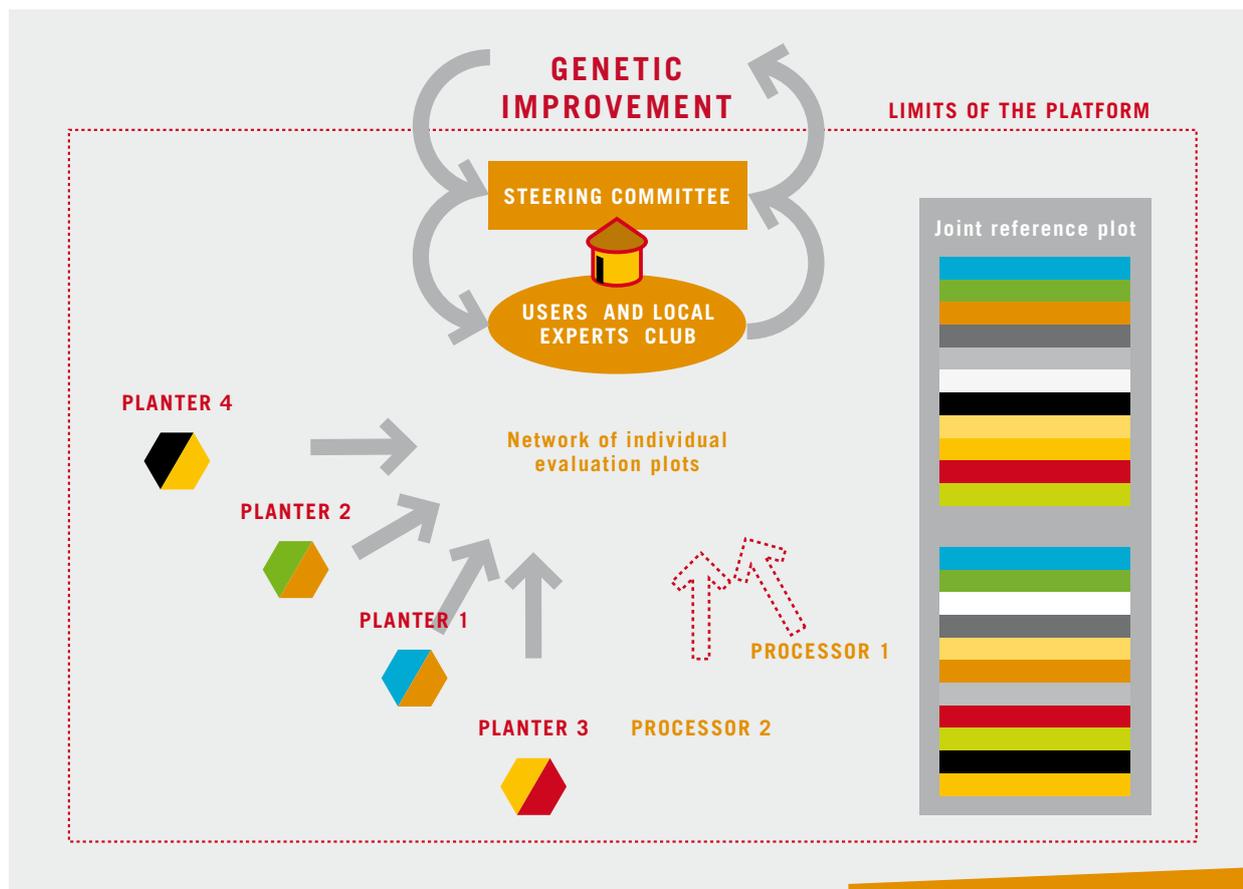
Mechanism

Each platform is designed as a sociotechnical mechanism combining a "field" component focusing on the agricultural and post-harvest trial of a range of new varieties, and a formal framework for coordination, exchange and sharing among researchers, extension workers, NGOs and various types of user (planters, processors, caterers, nursery managers, traders etc.). The platform has four bodies:

- a steering committee with five to six members;
- a users' and local experts' club with about 20 members;
- a joint reference plot;
- a network made up initially of 20 individual evaluation plots on farmers' land.

The steering committee has the task of taking strategic decisions for the platform (definition of objectives, plan of action and planning of activities, financing plan, dissemination of platform results, capitalization on these results, actions to ensure sustainability of the platform etc.). It is made up of representatives appointed by the main stakeholders involved in facing the collective challenges, thus facilitating the success of the project. These are institutions and representative organizations that place infrastructures or financial, human or material

Figure 22.1



resources at the disposition of the platform. The operating rules of the bodies of the platform (steering committee, users' and local experts' club, joint reference plot and network of individual evaluation plots) are laid down in a charter drawn up by the steering committee and validated by all the stakeholders in the project, to whom the steering committee submits regular reports on its activities and these decisions. The charter is governed by principles of legitimacy, competence and solidarity, which are the best guarantee of a successful dissemination of the results obtained by the platforms.

The users' and local experts' club represents the expertise of the various parties working in the value chain (planters, nursery managers, processors, transporters, caterers, traders etc.) and bodies supporting professional agricultural organizations (researchers, extension workers, NGOs etc.). It is responsible for carrying out various evaluations of the varieties introduced by research (CARBAP and national research institutes).

The joint reference plots involve the whole range of varieties introduced, each plot receiving ten varieties at the start. They host agricultural evaluation workshops, field training sessions and discussions on the features sought and the selection criteria for varieties in terms of the various

objectives. Depending on the platform in question, a restaurant or other premises in the area of the reference plot hosts post-harvest evaluation workshops (recipes, tasting, enhancement of by-products etc.). The market value of the various varieties (fresh fruit, fruit processed into chips or fritters, fried plantain etc.) is tested in local markets, and also that of discards and such by-products as leaves.

There were initially 20 individual evaluation plots, mainly held by small farmers who evaluate the behaviour of at least three of the ten varieties initially planted on the joint reference plot.

The project focuses on eight key activities:

- selection, awareness-raising and mobilization of partners for implementation of the project;
- project start-up workshops, with the establishment of steering committees and users' and local experts' clubs, and identification of constraints and their effects;
- viral indexing/multiplication/distribution of genetic material, and planting and monitoring of joint and individual plots;
- management and animation of the platforms;
- field and post-harvest varietal evaluation workshops;
- organization of national and regional evaluation workshops;

- creation and maintenance of a website;
- analysis of results by the regional coordination centre, putting them into perspective.

IMPACT

The project led to the establishment of a regional mechanism for participatory varietal evaluation managed by the stakeholders in the value chain under their own charter. It has also made it possible to carry out trials and to validate a particular model of partnership management, which can be replicated in other situations. The mechanism operates not only as an official body for consultation and coordination among the research community, public bodies and civil society, particularly concerning their respective expectations, but also as a space for learning and training. It has fostered coordination and a mutual enrichment of scientific and local knowledge regarding the issue of varieties.

Surveys carried out after the first two years of the project show that the stakeholders are happy with the coordination mechanism and with the introduction of new varieties into their value chain. They have shown particular enthusiasm at varietal evaluation workshops, and a number of them have already adopted and are marketing varieties introduced by the project. This observation applies particularly to women's groups that have adopted a variety with novel characteristics (the Popoulou variety, with very large fruit and an orange pulp that is very popular) to make chips. A "proto-value chain" has appeared in Cameroon for this variety (already disseminated in certain areas close to CARBAP's trial stations), with farmers' groups, collectors, and wholesale and retail purchasers and resellers. Bunches fetch a higher price than those of traditional plantains. The targeted purchasers are female caterers (modern-style restaurants and street stalls) and hotels, which use these plantains to make *pilé* that is eaten with sauce, but especially to make large, crunchy chips with a splendid orange-yellow colour. Production is still fairly modest, accounting for about 1 000 bunches per month, but increasing numbers of these distinctive bunches are being seen in home gardens and local markets, particularly in Cameroon's Mungo Department where CARBAP's main station is located. However, farmers' groups are asking CARBAP to provide training in production techniques for improved seedlings of this variety in order to increase production and meet the growing demand. The variety has thus led to the appearance of small groups,

including dozens of women's groups, concerned not only with the production and sale of bunches, but also with processing the plantains into chips. The price per bunch ranges from CFAF 1 500 to 2 000 in local markets, but can reach CFAF 5 000 in markets in Douala, especially in periods of shortage.

Another remarkable example concerns the appropriation of certain small hybrids especially by women's groups, which very quickly realized the practical nature of this type of variety. The fact that the bunches of these hybrids are within the women's reach facilitates not only upkeep and harvesting, but also makes it possible and indeed easy, especially in home gardens (the most widespread cultivation system in central Africa), to harvest the fruit one hand at a time, without picking the whole bunch, thus allowing time for the lower hands to ripen fully. Moreover, unlike local plantain cultivars, which are all prone to black Sigatoka disease and are generally large, hybrids resistant to this disease, especially dwarf hybrids, have a number of healthy broad, thick leaves at harvest time – and these leaves are much sought after for use in packing and are sold for this purpose in local markets.

The project has enabled the small newly-formed groups to become aware of the need to organize themselves first at the national level and then at the regional level, in order to promote the plantain value chain more effectively. Despite the success of the INNOBAP project, the main challenge is on the one hand to maintain this mechanism in operation through motivation of the stakeholders, while on the other hand extending it to other production areas, or indeed to other producing countries in the region. If this is to be achieved, donors and local and central government must be encouraged to support the platforms and make them sustainable. Sustainability of the mechanism also requires capacity-building for the stakeholders and the establishment of income-generating activities. Various groups have therefore been trained in the techniques of improved multiplication of planting material, allowing rapid promotion of the varieties selected by the stakeholders.

With regard to the sustainability of the mechanism, one of the most striking repercussions of the INNOBAP project is undoubtedly the financial support of the European Union under its Food Security Thematic Programme. This support was provided following a project proposal by CARBAP and its partners with the institutional endorsement of CEMAC and WECARD. The project is entitled "Partnership platforms to develop and disseminate innovations with a view to sustainable improvement of the banana and plantain value chains in central Africa". The European Union support allows

the INNOBAP project's pilot scheme to be extended to innovative technologies as well as varieties, and also to other countries.

KEYS TO SUCCESS

This project has been running since January 2009 and must have the support of a certain number of elements if it is to have any significant impact. On the basis of past experience, appropriate locations were selected where there is already a certain enthusiasm for plantain growing (a large production area, the presence of nurseries, closeness to large markets and processing companies etc.). The areas around markets on national borders are particularly attractive in this connection, for they are visited by various types of stakeholder from the value chain at the crossroads of several countries. An example here is the Ntem platform (the project's main subregional platform), which is on the frontier of southern Cameroon, northern Gabon and eastern Equatorial Guinea. This platform has a coordination centre in the small town of Ambam in southern Cameroon, with a number of branches in the three countries. It encompasses three major border markets supplying the towns of Libreville and Bata, where there is a large demand for plantain, and has a plantain market observatory run by CARBAP and the relevant services of the three countries' ministries of agriculture.

Many rural development stakeholders and organizations are involved in this platform, facing the major challenge of making it a model of subregional integration. Taking previous experience into account, partnerships have been established in a well-defined contractual context in which each party makes commitments that he or she will be able to respect. The steering committee is chaired by the Subregional Platform of Farmers' Organizations of Central Africa (PROPAC) and was designed in such a way as to be operational and have real decision-making capacities. The ongoing commitment of national agricultural research systems, particularly their extension services, is an important factor in success and sustainability, as is that of PROPAC and its national components (national coordination offices of farmers' organizations), whose visibility and capacities are boosted. These structures have a permanence and a presence on the ground, and CARBAP seeks to stimulate them within the framework of the platforms. Local government authorities of the three countries (governors and prefects) have issued passes to the platform members. The local directorates of the three countries' ministries of

agriculture, communal services, local elected officials, chambers of agriculture and commerce, research stations, agricultural training establishments, rural development projects and radios are all involved in the platform, willingly placing their resources at its disposal in order to facilitate the performance of various activities (information/communication, meetings, consultation, coordination and sharing, advocacy and awareness-raising, demonstrations, training workshops, formation of such pilot units as those for the multiplication of plant material, seed fields, field schools, drying units and pilot processing units).

CONCLUSIONS: MAIN LESSONS AND FUTURE OUTLOOK

One of the main lessons of this initiative concerns the time needed to establish a real partnership with a wide range of stakeholders and organizations. If a partnership is to be sustainable, it needs a clear contractual and empowering framework, much time and many types of action. Steering committees must be designed in order to function properly and have real decision-making capacities. Another important lesson concerns the capacities of farmers' groups to organize themselves sustainably and effectively and to meet their commitments and responsibilities.

In this connection, the major issue of the autonomy of management of the platforms must be resolved, the main challenge being on the one hand to maintain the mechanism in operation with motivated stakeholders and on the other hand to scale up its action. To this end, central and local government must be encouraged to promote and support the platforms and create the conditions needed for their sustainability. Such sustainability also requires capacity-building for the stakeholders and the establishment of income-generating activities.

CARBAP and its institutional partners have accumulated a wealth of experience in participatory research and pilot projects involving a range of stakeholders in the plantain value chain. Although a number of technologies have been tested and even disseminated on a significant pilot scale, they have not yet had any really perceptible impact. One of the priority future actions will be to identify the elements for effective measurement of the impact at national and regional levels. However, the real scaling up that will bring about a significant impact on the value chain will take more time and require the ongoing will and

mobilization of the stakeholders, particularly extension bodies and the government, which must provide regular support to competent, operational professional organizations and also support the visibility and promotion of innovation platforms.

Author

Kodjo Tomekpe – Former Director of CARBAP (June 2001-January 2010) – CIRAD, France:
http://www.cirad.fr/ur/multiplication_vegetative

To learn more: list of publications, studies and other documents

- Desdoigts, E., Kwa, M., Fogain, R., Temple, L., Lang, P.S., Bikoï, A. & Achard, R. 2005. A multidisciplinary monitoring centre by smallholders in Cameroon to identify factors limiting plantain production. *Fruits*, 60(4): 237-244.
- European Commission/Food Security Thematic Programme/ African Research Centre on Banana and Plantain (CARBAP). Project "Partnership platforms to develop and disseminate innovations with a view to sustainable improvement of the banana and plantain value chains in central Africa". 2009. Summary action fiche, 5 pp.).
- Hocdé, H., Lançon, J., Lokossou, B. & Hounsi, H. 2008. Une journée sur une plateforme multi-acteurs à Zé au Bénin. *Agridape*, 24(1).
- Lançon, J., Abessolo Ngnigone, C., Corballan, J.-A., Fovet-Rabot, C., Guilavogui, Z., Hocde, H., Kouke, A., Lama, M., Lokossou, B., Ndemba, B., Nkapnang, I., Obiang, P. & Tomekpé, K. 2009. *Plates-formes multi-acteurs. Un exemple de plate-forme appliquée à l'innovation variétale et illustrée sur bananier et plantain*. INRA Editions. 75 pp.

Lokossou, B., Lama, M., Tomekpé, K., Ngnigone, C., Lançon, J. & Hocdé, H. 2010. Un exemple de charte de travail: le projet Innobap. In G. Faure, P. Gasselien, B. Triomphe & H. Hocdé, eds. *Innovater avec les acteurs du monde rural: la recherche-action en partenariat*, p. 116. Versailles, Ed. Quae.

Nkapnang, D.I., Tomekpé, K., Ndemba, B., Bikoï, A. & Okolle, J. 2009. 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. *Agricultural Innovations for Sustainable Development*, 1(1): 21-27.

Nkapnang, I., Tomekpé, K., Ndemba, B., Bikoï, A. & Okolle, J. 2009. 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: the case of Cameroon. *Agricultural innovations for sustainable development*, 1(2): 21-28.

Nkapnang, D.I., Tomekpé, K., Van Schoubroeck, F., Bikoï, A., Ndemba, B., Lama, M., Ngnigone, C., Lokossou, B., Hocde, H. & Lançon, J. 2009. A regional network of dialogue and exchange platforms to improve the identification of farmer's needs and the dissemination of new varieties of banana and plantain. In *Proceedings of the International Conference on Banana and Plantain in Africa: harnessing international partnerships to increase research impact*. In press in *Acta Horticulturae*.

Websites

- <http://innobap.cirad.fr>
<http://www.carbapafrika.org>
<http://faostat.fao.org/>