



Regionalization of agricultural research to control fruit flies in West Africa: a look back at the SyRIMAO project experience

The SyRIMAO project was based on a research regionalized in West Africa to control fruit flies by transforming a national center into a Regional Center of Excellence and supporting member countries. Despite notable successes such as the harmonization of protocols and the dissemination of technologies, the initiative suffered from uneven coverage and funding delays. The sustainability of the achievements now depends on the political and financial ownership by ECOWAS and the member states.

Introduction

The need for regionalized research in West Africa

The mango sector in West Africa is under heavy pressure from fruit flies, causing considerable negative impacts. These pests affect not only the food and economic security of populations, including the income of small farmers and exports, but also the environment due to the intensive use of pesticides. Faced with this cross-border scourge, coordinated action has become imperative. The Fruit Fly Control Project (PLMF), conducted from 2015 to 2019, laid the groundwork for a regional response. The SyRIMAO project was designed to consolidate and amplify these achievements, to improve the incomes of fruit and vegetable producers.

The regionalization of research aimed to pool knowledge, harmonize control protocols, ensure large-scale dissemination of innovations, and strengthen scientific cooperation for a sustainable and coordinated response to a pest that ignores national borders. This note aims to share the lessons learned from this large-scale sub-regional experience. It is based on a review of national and regional activity reports, online interviews with national actors responsible for implementing project activities at various levels, and field visits in three countries.

Summary of the experience

A multi-dimensional regionalization strategy

The SyRIMAO project adopted a multi-dimensional regionalization strategy to address the challenges posed by fruit flies. The intervention was structured around three main axes. The first axis was the **structural regionalization**, which consisted of transforming a national research center, the National Specialization Center - Fruits and Vegetables (CNS-FL) of Burkina Faso, into a Regional Center of Excellence (CRE). This process followed three phases: a diagnosis to identify gaps in relation to regional standards,

support to fill these gaps (networking, capacity building, logistical support), and finally institutionalization, that is, recognition of the center as a regional reference. SyRIMAO's support enabled the CNS-FL to satisfy several of the nine ECOWAS criteria for becoming a CRE, in particular by establishing a network of researchers, strengthening National Agricultural Research Systems (NARs), and improving its infrastructure.



FIELD TRIALS ON NEMATODE TECHNOLOGIES

Regionalization of the National Specialization Center- Fruits and Vegetables (CNS-FL) with the SyRIMAO Project

ECOWAS has defined 9 criteria for becoming a Regional Center of Excellence (CRE). At the start of the project, an evaluative diagnosis of the CNS-FL was carried out in 2021, which made it possible to have a directory of current practices and their respective differences compared to quality standards and norms (references to good practices and international standards as criteria for assessment) and with respect to the requirements of the 9 performance criteria to become a regional center of excellence. This diagnostic study allowed to define actions, the implementation of which should make it possible to eliminate the gaps for its path towards Excellence. Thus, the support of SyRIMAO has enabled the achievement of the following criteria:

The establishment of a coherent and functional network of researchers / research centers with the ultimate goal of implementing the formulation protocols of the "finished technologies" selected by the CNS-FL supported by the technical committee. The implementation by the SNRA of the protocols retained allows the CNS-FL to have experimental sites in several countries of the ECOWAS area (criteria 2: regionalization).

The contribution to the strengthening of SNRA. With the support of SyRIMAO, the CNS-FL has strengthened the capacities of SNRA by training technicians from new entrant countries and all RAD focal points of the 14 countries to lead the national laboratories relating to the identification of fruit fly species and to the training of producers on control methods (criterion 6).

The creation of a framework for the exercise of agricultural research through an incentive environment, research infrastructure and logistics. The PLMF implemented between 2015 and 2019 had contributed to providing the CNS-FL with adequate equipment and a procedure manual. SyRIMAO's support focused on the creation of research workshops: taxonomy, parasitoid breeding (Criteria 1).

Strengthening and maintaining the quality and adequacy of research teams. With the support of SyRIMAO and in collaboration with the Royal Museum for Central Africa in Belgium (MRAC), the CNS-FL has been equipped with a digital and physical collection of fruit fly specimens of all species present in West Africa and related regions. A core of 3 technicians has been trained in the use of these tools (Criteria 3)

Source: 2024 SyRIMAO project report

The second focus was the **capacitation of national actors**. Regionalization also consisted of strengthening the capacities of national research actors in the beneficiary countries. The actions of capacitation included training organized for focal points, laboratory technicians, trainers, and the producers themselves. However, this process experienced disparities: a late start of activities, a

centralized definition of training themes, and differentiated access depending on the country. Cape Verde did not participate due to a lack of interest, while Gambia and Liberia had sporadic access, mainly due to funding delays. 12 other countries have benefited more actively from these trainings.

Finally, the third focus was the methodological support for the conduct of experiments. The technologies and research protocols are developed at the regional level on the basis of research challenges and needs transversals coming from the CN before being shared with national actors.

Countries such as Benin, Burkina Faso, Côte d'Ivoire, Senegal, and Togo have benefited from considerable support but have also been chosen to host pilot orchards because of their comparative advantages in terms of experience and institutional capacity.



TRAINING OF FOCAL POINTS IN TAXONOMY AT CNF-FL (BOBO-DIOULASSO, BURKINA)

From theory to practice : achievements and limitations of experience SyRIMAO

The research regionalization approach promoted by SyRIMAO has generated notable effects, both positive and negative. One of the major successes is **the effective transformation of the CNS-FL into a Regional Center of Excellence (CRE)**, which now coordinates a network of researchers and has tools for regional pest monitoring. Thanks to the CRE's technical support, **12 research protocols** have been tested and disseminated. This has allowed to harmonize scientific methods in the participating countries. The center has also responded to **13 requests for research equipment**, strengthening local technical capacities. The research has resulted in the production of **12 scientific publications** and the organization of **100 demonstration days to transfer technologies to producers**. This pooling, by avoiding unnecessary repetition and experimentation, has saved time and optimized resources. In addition, producers' access to technologies has been

facilitated, in particular by the installation in Senegal of an essential oil production unit for mass trapping.

The **regionalization coverage was however, differentiated**. The project, although designed for the 15 ECOWAS countries, did not uniformly affect the entire region. Cape Verde remained largely on the fringes due to a weak institutional commitment. **An asymmetry was also observed in the appropriation of regional activities** by the countries, mainly due to administrative delays in the payment of funds, and the unavailability of human resources capable of conducting the experiments. Finally, **some research activities could not be completed** within the time allotted by the project, such as the studies on entomopathogenic nematodes in Benin, which required a longer duration.

Lessons learned

Success factors

The success of the research regionalization initiative was influenced by several key factors. The **regional institutional dynamism** was an essential lever, making it possible to overcome obstacles and implement activities. Similarly, the **national institutional commitment** proved decisive, as illustrated by the case of Cape Verde, where the default of commitment led to a quasi self-exclusion. The approach of **integrated regionalization**,

combining institutional transformation, capacity building, and support for experimentation, has fostered a coherent development of technologies and their ownership by local actors. A **flexible and effective coordination** as well as the establishment of **knowledge sharing mechanisms**, by creating synergies and avoiding duplication of efforts, have also been success factors.



EXPERIMENTATION WITH MANGO PROTECT TECHNOLOGIES

Conversely, some factors have limited the success of the project. The **delays in the payment of funds** and in the acquisition of equipment slowed down the participation of some countries and delayed experiments, creating a major obstacle to a homogeneous and effective implementation.

Sustainability conditions

To ensure the sustainability of achievements, several conditions must be met. Financial **ownership** by the member countries is crucial. The States must integrate a contribution to the functioning of the regional center into their national budgets to reduce dependence on external funding. The **continuous strengthening of human capacities** at all levels (researchers, technicians, producers) is essential to maintain expertise and autonomy. It is also necessary to ensure an **inclusive and structured coordination** and to set up mechanisms for **monitoring, evaluation, and continuous learning**. Finally, the **active participation of farmers** from the technology selection phase is a guarantee of relevance and ownership, and therefore of sustainability.

Conditions for scaling up

For the extension of the experience to other contexts, the **institutionalization of regional structures** in national policies is essential. This requires a clear legal framework that supports regional actions. Effective **communication** on the issues of regionalization is necessary to obtain the commitment of all stakeholders. Finally, the **involvement of local actors** must be at the heart of the process to ensure adaptation to specific contexts and sustainable ownership.



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Perspectives and recommendations

In light of the lessons learned from the SyRIMAO experience, future actions must be considered to consolidate and extend the regionalization of research in West Africa.

- **To ECOWAS:** It is recommended to **strengthen regional funding** for research centers by creating a dedicated fund, financed by regular contributions from member states, to overcome dependence on external donors. ECOWAS should also **encourage the rapid sharing of results** via exchange platforms and technical workshops to avoid duplication of efforts. It is essential to **promote flexible coordination** adapted to the various national contexts, for example, via adjustable governance committees. Finally, it is necessary to **support capitalization and evaluation** of experiences by developing harmonized monitoring tools at the regional level.
- **To national actors:** States must **integrate regional activities into their national agricultural policies** to ensure better local ownership. It is imperative to **allocate national resources** to co-finance regional activities and develop complementary research activities if necessary. Finally, each country should **strengthen its own monitoring and evaluation capacities** by developing tools adapted to its realities to measure impacts and adjust interventions on a continuous basis.



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Contact

Regional Agency for Agriculture and Food (ARAA) - Lomé, TOGO
www.araa-raaf.org / araa@araa.org

SyRIMAO Coordination Unit - Lomé, TOGO
ntraore@araa.org

ECOWAS Directorate of Agriculture and Rural Development - Abuja, NIGERIA
agric_ruraldev@ecowas.int