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Policies and Intervention Approaches Challenges in Promoting Agricultural Innovation: The Case of The Cashew Sector in Benin

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Abstract

Purpose: Innovations are necessary for the development of agricultural sector. However, there are questions about their appropriation and sustainability. This article analyzes policies and intervention approaches challenges in promoting local innovation in the cashew sector in Benin.

Methodology: This study combines a literature review on policy and intervention approaches and qualitative information from nine cashew project managers to collect data.

Finding: The results reveal the following three main intervention approaches: (i) Capacity-building approaches, which include training, experience sharing, experimentation and demonstration, (ii) approaches facilitating access to finance and organizational support, and (iii) Business relationship development approaches that focus on relationship building and training. The choice of approaches is generally based on the priorities given to the challenges related to the development of the sector

Unique Contributions to Theory, Policy and Practice: However, investment and consideration of weaknesses in the implementation of intervention approaches would contribute to the development of innovation and the sustainability of innovation support services in the agricultural sector.

Keywords: *Cashew Sector, Agricultural Policy, Support Services, Innovation*

1. Introduction

The liberalization of agricultural sectors, the disengagement of states and the decentralization processes in the 1980s and 1990s affected the orientation of innovation systems in Africa (Dabat & Grandjean, 2018). This period was marked by the birth of many extension services. Although several innovation support services have been launched, they have not been able to respond to the demand for innovative initiatives. This situation led the State to reengage in the agricultural advisory systems. Agricultural advisory has been seen as a key element in triggering innovation for several years (Faure et al., 2012; Nettle et al., 2017). Agricultural innovation is now considered the key to the development of the agricultural sector. It is an important and indispensable factor for improving productivity and product quality. The importance of this sector is remarkable as the state has taken various measures to develop and vitalize the sector. The aim of Benin's agricultural policy, for example, is to promote certain so-called value-added sectors in order to develop the sector. Institutions providing innovation support services play an important role in supporting the adoption and dissemination of agricultural innovations (Bouزيد et al., 2020). Given the current demand in the cashew market, farmers must constantly seek to evolve their practices to innovate and remain competitive in the market (Faure et al., 2018). However, taking into account the challenges farmers face, innovation support services must also provide need-based services. As farmers have different profiles, it would be advisable to develop more targeted advisory mechanisms to meet their demand. Supporting innovation requires a variety of forms of support services (Audouin et al., 2021). Certain sectors are prioritized when supporting agricultural innovation, namely high value-added sectors. This research focuses on policies and approaches for innovation support services in the cashew sector in Benin. To develop this sector, several measures have been set out in policy documents.

According to Bouزيد et al., (2020), difficulties in accessing financial services are one of the main factors that hinder agricultural innovation. Audouin et al., (2021) have shown that projects and programs must focus on specific innovation support services, such as capacity building, networking, institutional support, access to finance, inputs and equipment needed for innovation. Given this diversity of innovation support services, it is important to analyze the contribution of intervention approaches to agricultural innovation. The question of capacity building (Triomphe et al., 2016), connecting stakeholders and facilitating access to finance (Noufé et al., 2020) are the major challenges to be addressed to enable agricultural innovation. Therefore, this article undertakes an in-depth analysis of policies and intervention approaches challenges in promoting agricultural innovation in the cashew sector in Benin.

After reviewing the literature on agricultural policy development in Benin, we characterized the intervention mechanisms of national projects developed in application of agricultural policy. Finally, we described the challenges of intervention approaches to better promote agricultural innovation.

2. Theoretical and Analytical Framework

For more than three decades, the agricultural sector has been the mainstay of the economy in many developing countries and has therefore received much attention from governments

(Soulé, 2012). Agricultural policy is a set of regulatory measures, structural arrangements, and interdependent financial and human resources implemented by public authorities to contribute to the development of the agricultural sector (Ribier, 2008). It is also a set of public intervention measures related to domestic agricultural production or agricultural imports and exports (Ribier & Baris, 2013). For Benkahla et al., (2011), agricultural policy refers to measures that are implemented directly by the state. It also includes measures aimed at guiding the behavior of private sector. The aim of agricultural policy is to contribute in a sustainable way to meeting the nutritional needs of the population, to economic and social development and reducing poverty, as well as reducing inequalities between territories (ECOWAP, 2016). The failure of the structural adjustment programs leads West African countries to implement new policies. Before the 1960s, the agricultural sector in developing countries was characterized by a number of difficulties (Senahoun, 2000). After independence, Benin experienced four major periods, from the Marxist-Leninist period of 1975 through the period of the decline of socialism in 1986 to 1990 to the period of economic liberalism in 1991 (MPDEPP-CAG, 2009). The liberalism of the country's economy depends heavily on the contribution of the agricultural sector. This period was marked by the withdrawal of state from certain sovereign functions. It was marked by the emergence of development projects. In the agricultural sector, economic liberalism has led to the birth and implementation of several reforms in both food crops and cash crops. This policy had three main objectives are depriving the distribution of agricultural inputs, credit policy and financing of agriculture, and capacity building of farmers' organizations (B. Soulé, 2012).

The accompanying measures set out in most agricultural development policy documents have often not been effective. Indeed, the persistence of difficulties in accessing specific inputs such as the availability of high-quality seeds, fertilizers and pesticides suitable for crops, demonstrate the limitations of the measures set up (MAEP, 2017b). Capacity building for producers should receive particular attention from both policy and development projects, as it is a crucial factor at all levels of the value chain and essential for increasing productivity (Pesche, 2005). The same applies to the lack of adequate funding for the agriculture sector and its limited access to producers, which are significant constraints to improving national productivity (Singbo, 2012). As a result, the innovation processes that agricultural research and development institutions are struggling with have become concerns of farmers have struggled to farmers' concerns due to a lack of appropriate innovation support services (Mathe et al., 2019).

To meet these challenges, development projects are the actors that need to implement concrete actions that are essential for development. These projects use different approaches to help farmers solve their difficulties. Therefore, in order to characterize project/program intervention approaches, we propose to examine how they foster farmers' capacity building, facilitate farmers' access to finance, and develop their business relationships. To identify the challenges, we analyze how the types of intervention approach stimulate farmers' innovativeness (Figure 1).

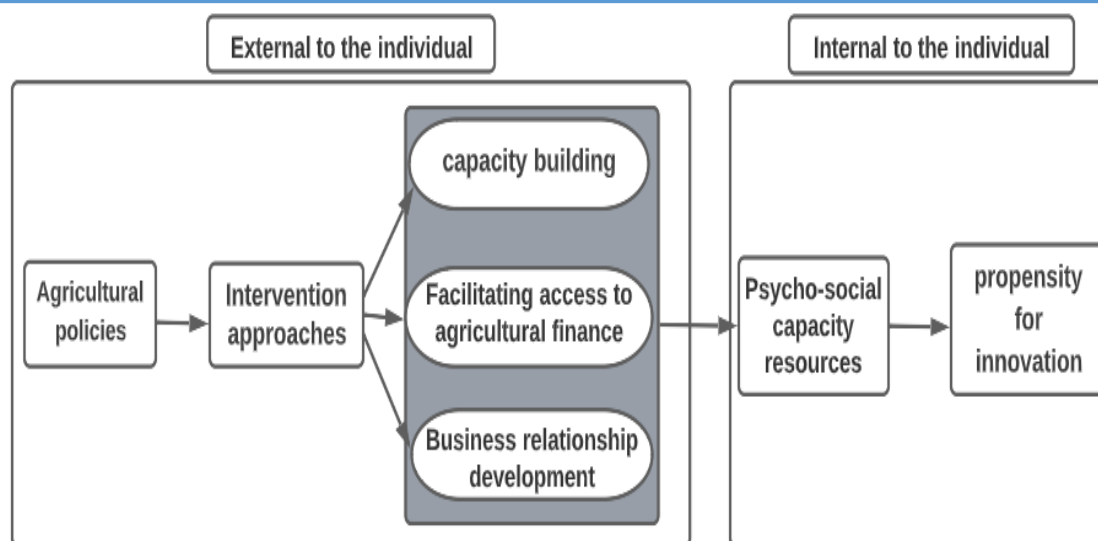


Figure 1: Analytical Framework

3. Methodology

In order to achieve our goals, we have carried out an analysis of the various political documents related to the development of the cashew sector in Benin. For this purpose we selected the policy documents in the cashew sector in Benin (Table 1). We then made an inventory of all projects and programs that have been implemented in the cashew sector in Benin. The inventory was made on the basis of the projects and programs that implemented planned measures for the development of the sector and included them in the policy documents. An interview guide for technical and financial support for farmers was then developed. The interviews were conducted with 09 coordinators and project managers. The collected data were analyzed according to the analytical framework.

Table 1: List of Policy Documents Analyzed

| Policy documents | Period |
|---|---------------|
| Strategic Recovery Plan for the Agricultural Sector (PSRSA) | 2011 - 2015 |
| National Strategy for the Development of the Cashew Sector (SNDFA) | 2016 -2020 |
| Agricultural Sector Development Strategic Plan (PSDSA) | 2017 - 2025 |
| National Cashew Development Program (PND-FA) | 2017- 2021 |
| National Plan for Agricultural Investment, Food and Nutrition Security (PNIASAN-II) | 2017 - 2021 |

4. Results

4.1. Agricultural policy developments in Benin

The results of PSRSA assessment show that the projections made for 2015 for the agricultural sectors achieve the objectives in two sectors: cashew and vegetable. The importance of the cashew sector to Benin's economy encouraged the government to devote some attention to it in the various policy documents related to the agricultural sector. Among these documents we can mention the Agricultural Sector Development Strategic Plan (PSDSA) and the Strategic Recovery Plan for the Agricultural Sector (PSRSA).

The PSRSA (MAEP, 2011) and the Strategic Agricultural Sector Development Plan (PSDSA) (MAEP, 2017a) form the framework for the operationalization of reference documents at national and international level in order to make the agricultural sector one of the main drivers of the new dynamics of economic and social development in Benin. These two documents also serve as guides documents for agricultural sector promotion. They aim at promoting thirteen (13) priority agricultural sectors including cashew. Policy analysis in the cashew sector took place over two time periods. The first is from 2011 to 2015 with the PSRSA and the second is from 2017 to 2025 with the PSDSA.

4.1.1. Analysis of the Strategic Agricultural Sector Recovery Plan (PSRSA)

The Strategic Recovery Plan for the Agricultural Sector, implemented over a period of 2011-2015, is a plan whose vision is to make Benin a dynamic, competitive, attractive, environmentally conscious and prosperous agricultural power by 2015. To achieve this, the PSRSA focused on three priority areas: production, which focuses on increasing production, processing through the promotion of processing units, marketing through the development of distribution relationships. The operationalization of the sector requires the provision of all financial resources that allow the implementation of the planned measures. There was the financial plan called Agricultural Investment Plan (PIA) to support the PSRSA implementation which is divided into programs including the Annual National Investment Program (PNIA). The government has decided to attach a strategic guideline to this document. This document gives an overview of the agricultural sector and the measures necessary for its development. In order to achieve the goals, set out in the PSRSA, a strategy document has been prepared for each of the priority areas identified in the PSRSA. The National Strategy for the Development of the Cashew Sector (SNDFA, 2016-2020) is a very important tool to steer and coordinate all interventions in favor of the cashew value chain. In the process of implementing the National Strategy for Cashew Sector Development, 06 levels have been identified. These include production, processing, marketing, research, stakeholder structuring and sector financing. The priority of the National Cashew Sector Development Strategy is to improve the production and commercial performance of the cashew sector.

4.1.2. Analysis of the Agricultural Sector Development Strategic Plan (PSDSA)

Despite the desire of the government and the strong involvement of the Technical and Financial Partners (PTF) in the development and implementation of the PSRSA, efforts still need to be made. The results at the end of the implementation of the PSRSA show that the sector still faces several difficulties. These include the difficulties related to the availability and access to

agricultural inputs and land; the weak of organization of agricultural sectors, the lack of appropriate storage infrastructure, the inadequate funding of the agricultural sector. The difficulties identified after the diagnostic analysis of the agricultural sector as well as the international commitments, have led to the formulation of a vision for the PSDSA. The vision of the PSDSA is therefore: By 2025, Benin agricultural sector is dynamic, competitive, attractive, resilient to climate change and creator of wealth, jobs, responding in an equitable way to the need of the population.”

The overall objective arising from the vision of the PSDSA is to improve the performance of Beninese agriculture, to enable it to ensure food sovereignty and to contribute to the economic and social development of the men and women of Benin for the achievement of the Sustainable Development Goals (SDGs)».

During this period, the Benin government is striving to implement the measures envisaged in the PAG to develop national programs for the development of agricultural sector the cashew sector. The measures provided for in the national program for the development of the cashew sector are:

- ❖ Training and support of private service providers (PSPs) for the development of innovations in cashew farms with the appropriate equipment.
- ❖ Support for the rehabilitation of existing cashew plantations
- ❖ Training of advisors for farmers coaching, support and monitoring
- ❖ Strengthening the dissemination of innovations and new techniques for improving production
- ❖ Organize specific fairs on innovations in the cashew sector
- ❖ Raise farmers’ awareness about the benefit of farmers’ cooperative.

The actions and activities resulting from the strategic axes show that in the process of implementing the PSRSA and the PSDSA, the main activities to be carried out are related to:

- ❖ Training of actors to ensure good productivity
- ❖ Access to funding for actors
- ❖ Clustering farmers

The development of the cashew sector not only requires the implementation of these activities, but it is also important that each actor has a good understanding of the role they play within the value chain.

4.1.3. Structuring the stakeholders within the cashew sector

The actions listed in the PSRSA and the PSDSA are implemented by the same stakeholder. The main actors involved in the implementation of the PSRSA and PSDSA are both the public and private sectors. In order to develop the sector, four groups of actors intervene.

Table 2: Actors involved in the cashew sector, their roles and responsibilities

| Actors | Roles |
|--|---|
| Territorial Agency for Agricultural Development (ATDA) | General coordination of the implementation of the sector development program |
| Departmental Directorate of Agriculture, Livestock and Fisheries (DDAEP) Borgou, Atacora, Donga, Zou, Collines, Plateau | Regulation, coordination, control and application of regulations and standards for agricultural activities, planning, monitoring and evaluation of development policies in the sector, securing land tenure in rural areas. |
| Inter Professional in the cashew Sector (IFA) | Assist the ATDA in mobilizing and monitoring of nurseries and farmers. |
| Directorate for Rural Legislation, Support for Professional Organisations and Social Affairs Agricultural Entrepreneurship (DLROPEA) | Assisting in securing land, developing plantation leases and assisting in improving the organization of stakeholders of all links. |
| Producer Organizations and Processors | Development and implementation of the campaign plan at local and national level |
| Policy makers (parliamentarians, local authorities and local authorities) | They define and implement the policies and strategies of the sector (state and local authorities) |
| Research institutes, agricultural universities and agricultural colleges of Benin | Research and experiments to increase production |
| Technical and financial partners (PTF) | They support the sector and can influence the government (PTF) |

4.2. Characterization of the interventions of national projects developed for the application of agricultural policy

The implementation of the actions planned in the policy documents requires the intervention of projects and programs operating in the sector. Thus, in Benin, several organizations are involved in the process of implementing innovations. The National Agricultural Investment Plan and Food Security and Nutritional (PNIASAN-II) represents the second generation of National Plan Agricultural Investment (PNIA) and is defined as the strategic planning and coordination framework for the agricultural sector. It takes into account the needs, the achievements, the additional financing needs to be met for the investment and operation of the

sector over a five years period (2017 - 2021). The PNIASAN-II brings together all current and future projects and program in the public and private sectors. The priority projects related to the cashew sector listed in the PNIASAN-II are listed in the table 3.

Table 3: Technical and financial partners involved in the implementation of PNIASAN-II

| Title of the project | Acronyms | PTF |
|---|-----------------|------------|
| Agricultural Promotion Programme Phase 3 | ProAgri3 | GIZ, KfW |
| Support Program for the Development of Cashew Sectors | PROFI-Anacarde | CTB |

Projects and programs supported in the cashew National Development Programme of the Sector (PNDF)

| | | |
|--|---------|--|
| Agricultural Diversification Support Project | PADA | World Bank |
| Project BeninCaju implemented by TechnoServe and Catholic Relief Service | CRS | USAD |
| Agricultural Finance Promotion Program | ProFinA | GIZ |
| Civic engagement alliance | CEA | Facility for Sustainable Entrepreneurship and Food Security of Netherlands |

In addition to the projects mentioned above, there are also development projects that are not listed in the policy documents but are being implemented in the cashew sector. The table 4 shows the various remaining projects.

Table 4: Development projects not listed in policy documents but in progress

| Title of the project | Acronyms | PTF |
|---|-----------------|------------|
| Agricultural Diversification Support Project Additional Financing | PADA-FA | World Bank |

| Title of the project | Acronyms | PTF |
|--|-----------------|---|
| Cracking the nut | FDOV | ONG (Woord en daad), Ministry Of Foreign Affairs of the Netherlands |
| Farmer to Farmer | - | USAID |
| Rural Socio-economic Transformation Program of the | PTSE | Pain pour le Monde (BfdW) en Allemagne |

4.3. Analysis of intervention mechanisms

4.3.1. Presentation of the projects studied

Table 1 presents the implementation periods of the project activities, the objectives of the project activities and the sectors or areas of intervention. The analysis shows that the 09 projects presented are based on three main approaches. These are the capacity-building approaches that aimed at increasing productivity, improving incomes, facilitating access to decentralized financial services by improving access to and use of decentralized financial services for small producers and SMEs, and the development of business relations between the actors of the various links to position the Beninese cashew on the international market.

Table 5: Presentation of the projects studied

| Projects | Implementation periods | Objectives |
|-----------------|-------------------------------|---|
| PADA-FA | 2018-2022 | Strengthen the capacity of producers and agribusinesses to increase productivity, processing and market production of the five target sectors, including cashew as a substitute for imports. |
| ProAgri3 | 2017-2020 | Strengthen the productivity and competitiveness of Benin's agriculture and poverty reduction |
| FDOV | 2016-2021 | Make the cashew sector a competitive sector in where smallholders, processors and service providers work together to increase productivity and efficiency leading to improved income and increased jobs, and value creation |
| CEA | 2016-2020 | Make the cashew sector a competitive sector in where smallholders, processors and service providers work together to |

| Projects | Implementation periods | Objectives |
|-------------------------|-------------------------------|---|
| | | increase productivity and efficiency leading to improved income and increased jobs, and value creation |
| BéninCajù | 2016-2020 | Increase the productivity and income of 43,000 small cashew producers, of which at least 30-40% are women, creating 3,400 processing jobs, 70% of which are women, promoting the sale of derivatives in new markets and supporting the organization and development of the sector, to promote the country economic growth |
| PROFI-Anacarde | 2020-2022 | Consolidate the achievements in cashew sector in order to facilitate the positioning of Beninese cashews on the European markets through an improvement in the quantities produced while respecting environmental, social and health standards. |
| ProFinA | 2016-2023 | Improve access to and use of appropriate financial services by farms and SMEs in rural areas. |
| Farmer to Farmer | 2019-2024 | Contribute to the inclusive economic development of the agricultural sector, particularly in the cashew sector |
| PTSE | 2018-2020 | 80% of the women supported by the project have a diversified family income through their activities in the cashew sector |

4.3.2. Typology of projects in the cashew sector

The classification of the project is based on some specific criteria as follows: the nature of the project, the objectives of the project, the activities carried out towards the beneficiaries and the intervention approach.

Table 6: Typology of projects in the cashew sector in Benin

| Type of service | Capacity building | Facilitation of agricultural finance | Partnership Development |
|--|--------------------------|---|--------------------------------|
| Nature of the support service providers | | | |
| Public | PADA-FA | | |
| Private | | | FDOV, CEA |

| | | | |
|------------|---|------------------|----------------|
| Semipublic | BéninCajù ProAgri 3, Farmer to Farmer | ProFinA, PTSE | PROFI-Anacarde |
|------------|---|------------------|----------------|

The 66.67% of projects are semi-public and the 33,33% are projects funded exclusively by PTF. Almost 44.5% of the projects examined are semi-public and address innovation supporting services with focus on farmers' capacity building. 22.22% are engaged in activities related to facilitating access to decentralized financial services. The remaining 33.33% of projects are carried out through the development of business relationships between actors at the level of all links in the value chain, and in particular production. The goals of the various projects show that both the donors and the government want to contribute to:

- ❖ Improve the productivity of cashew producers
- ❖ Improve the quality of nuts to make the sector competitive on the world market
- ❖ Build farmers' capacity for producers
- ❖ Improving access to decentralized and
- ❖ Development of partnership relationships

4.3.3. Cashew Project Characteristics

Table 7, presents the different types of structures involved in the cashew sector in Benin. Analysis of the table 7 shows that 62.5% of the projects are public. When it comes to implementing agricultural advices, 62.5% are driven by the projects themselves. The 37.5% are semi-public projects. These projects are called semi-publics because they are funded by technical and financial partners as well as the government.

This shows that donors do not necessarily take into account the needs outlined in policy documents for interventions in this sector. It is worth mentioning that more than half of the development aid partners settle in the country without taking into account the real difficulties of the beneficiaries. This shows the lack diagnosis prior to the implementation of projects. The global scale of the sector and the quality of Benin walnuts are generating real interest, justifying the percentage of projects that mobilize 100% equity to invest in this sector.

Table 7: Characteristics of projects in the cashew sector in Benin

| Suppliers innovation services | of support | Service provider | | Fundraising | |
|-------------------------------------|---------------|------------------|-----------|-------------|------|
| | | Project | Providers | Capital | PTFs |
| PADA-FA | | | | | x |
| ProAgri3 | | x | x | | x |

| | | | |
|------------------|---|---|---|
| FDOV | | x | |
| CEA | | x | |
| BéninCajù | x | x | x |
| PROFI-Anacarde | | x | x |
| ProFinA | x | | x |
| Farmer to Farmer | x | | x |
| PTSE | x | | x |

4.3.4. Partners and modes of intervention of projects in the cashew sector

The table 8 shows the different partners and the different approaches and areas of intervention of the different projects.

Table 8: Technical and Financial Partners and Project Response

| Projects | Technical and financial partners | Method of intervention |
|----------|--|-----------------------------------|
| PADA-FA | <ul style="list-style-type: none"> ➤ World Bank ➤ ATDA | Faire-faire |
| ProAgri3 | <ul style="list-style-type: none"> ➤ Federal Ministry for Economic Cooperation and Development (BMZ) ➤ Ministry of Agriculture, Livestock and Fisheries (MAEP) providing supervision (counterpart) ➤ FENAPAB ➤ DEDRAS, ICRA, RAD ONG, Wake-UP, CRADIB etc. | Make-to-do approach (Faire-Faire) |
| FDVO | <ul style="list-style-type: none"> ➤ DEDRAS-ONG ➤ Ministry of Foreign Affairs of the Netherlands (MOFA) and ICCO IFA ➤ PASCiB | Make-to-do approach (Faire-Faire) |

| Projects | Technical and financial partners | Method of intervention |
|------------------|---|-----------------------------------|
| CEA | <ul style="list-style-type: none"> ➤ DEDRAS-ONG ➤ Ministry of Foreign Affairs of the Netherlands (MOFA) and ICCO IFA ➤ PASCiB | Make-to-do approach (Faire-Faire) |
| BéninCajù | <ul style="list-style-type: none"> ➤ Catholic Relief Services en collaboration avec TechnoServe ➤ USDA, United States Department of Agriculture | Direct |
| PROFI-Anacarde | <ul style="list-style-type: none"> ➤ URCPA-Atacora Donga ➤ ENABEL | Make-to-do approach (Faire-Faire) |
| ProFinA | <ul style="list-style-type: none"> ➤ German Ministry of Agriculture ➤ SFD | Faire-Faire |
| Farmer to Farmer | <ul style="list-style-type: none"> ➤ U.S. Agency for International Development (USAID) | Direct |
| PTSE | <ul style="list-style-type: none"> ➤ Bread for the World (BfdW) in Germany | Make-to-do approach (Faire-Faire) |

The analysis of the table 8 shows that when implementing their activities, projects often use service providers whose intervention strategy is to learning by doing. In addition to this intervention approach, there is a second approach called direct, which involves recruiting and training field agents to accompany producers in the field. The role of these service providers is to recruit and train agricultural advisors whose role is to train producers. Private service providers recruited by the projects are contracted and the terms of the contract allow them to recruit and train agricultural advisors for the implementation of the project activities. In this way, projects recruit and train agricultural advisors and deploy them on the ground. Most projects in the cashew sector use make-to-do approach by recruiting service providers. As a result, 77.78% of the projects are involved in this approach with farmers.

5.3.5. Activities related to cashew innovation support services

Analysis of the activities carried out by the various projects shows that depending on the project's approaches', the interventions focus on specific activities in the implementation of the

agricultural advisory in Benin. Thus, the projects recruit and train agricultural advisors and deploy them on the ground.

Table 9: Key Activities Implemented by Response Approaches

| Approches | Activities |
|------------------------|--|
| Capacity building | <ul style="list-style-type: none"> ➤ Support for access to information (prices, markets, productions, yields, good practices, etc.) ➤ Training in production and post-harvest technology, farm management, agricultural enterprises, ➤ Exchange visits ➤ Organizational Support (Advice to professional organizations, OP) |
| Agricultural financing | <ul style="list-style-type: none"> ➤ Facilitating access to credit for producers ➤ Organizational Support ➤ Training in production technology and post-harvest |
| Linking | <ul style="list-style-type: none"> ➤ Liaison with other actors (facilitation/support) ➤ Marketing/marketing support (market access counselling) ➤ Organizational Support ➤ Training in production technology and post-harvest |

Analysis of the table leads us to say that there is a variety of approaches or services that support innovation that allow the beneficiaries of projects and programs to develop agricultural innovations. The different approaches used by these structures are now referred to as innovation support services. An innovation support service can be defined as a system organized by a third party, permanent and allowing innovators to benefit from a learning dynamic (training, advice, expertise, etc.), access to resources (finance, information, material, etc.), Networking, services and decision support (mentoring, facilitation, coaching etc.).

5. Discussion

The results of this study show that there is a diversity of service provider that support innovation. All these organizations involved in the cashew sector have something in common. Apart from their intervention approach, they provide all the basic training to farmers. We see that for example, we cannot expect farmers to be solvent, for example, when it comes to a project that facilitates access to financing without first showing them how to obtain nuts of quality and quantity. Since the liberalization and de-structuring of state-owned enterprises, support services have been provided by different actors and have struggled to meet the demand for innovative initiatives. Therefore, agricultural innovation systems are now viewed as a means of reflecting and renewing policies and strategies to support innovation (Dtang-Dessendre et al., 2018). Effective support for innovative initiatives is therefore required, such as the provision

of access to knowledge and intermediation services. The main challenge for innovation support services (ISS) is the pluralism of providers of these services (Knierim et al., 2017). According to Nouf et al., (2020), the approaches most developed by innovation support service providers are the provision of innovative knowledge and technologies, support for access to financial resources, support for on-farm innovation, support for construction of capacities and institutional support for large-scale dissemination/diffusion of innovations, provision of innovative knowledge and technologies. Given the evolution and diversity of SSI (Nouf et al., 2020), the success of the SSI approach depends on the quality of SSI offered by support service providers and organizations (Kilelu et al., 2014). In order to ensure the quality of these services, consultants must be accompanied the success of the approach therefore depends not only on the supporting organization, but much more on the skills of extension agents. According to Moumouni et al., (2015), an extension agent is the one who plays the role of disseminating agricultural techniques and management concepts, supporting management and decision-making, or mediating and facilitating. So, the role of the extension agent cannot be summed up in a simple assistance to farmers. However, it should be noted that the extension agent may use other approaches or support services to achieve their goals. The choice of methods and tools used depends on their goals and reflects their intervention approach (Faure, Toillier, et al., 2018). For example, the extension agent focused on accessing financial resources may use capacity building to achieve their goals if they deem it necessary. Capacity building (Triomphe et al., 2016), connecting stakeholders and facilitating access to finance (Nouf et al., 2020) are the main challenges to be addressed to facilitate agricultural innovation. Addressing the various challenges required capacity building among innovation support service providers to develop enabling strategies and create an enabling environment for innovation processes (Blanchard et al., 2021). The policy documents developed respond to these challenges through their various measures inscribed in the documents. These difficulties, which once hampered the development of the sector, are beginning to be lifted.

6. Conclusion

The results of this research highlight the role extension agents in the innovation process. Given the diversity of advisory organizations, the extension agent adviser must be competent and able to provide quality advice to farmers. Therefore, projects and programs should constantly reinforce extension agents in order to meet farmers' expectations. Finally, the sustainability of innovation support services depends on the quality of the services provided by extension agents and their appropriation by farmers.

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