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Institutionalization of knowledge sharing platforms in the last three decades in Francophone Sub Saharan Africa

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Abstract

This paper analyzes the processes of institutionalization of agricultural knowledge sharing platforms among stakeholders in the last three decades in Francophone Sub Saharan Africa based on Benin case study. The paper is based on literature review and semi-structured interviews with various stakeholders according to an historical and institutional perspective. In the 1980s, Monthly Workshops for Technology Review which brought together extension workers and research were the main institutional framework created to implement national research-development policy. These platforms were too expensive to be sustainable and lack of participation of stakeholders. During the 1990s, National, Departmental and District Agricultural Extension/Research Systems/ Committees including agricultural development stakeholders were set up to promote participatory technology development. Regional and Sector Committees for Research-Development giving a voice to technology users were established in the 2000s to link researchers, extension workers and end users of technology including farmers and the private sector. These multilevel platforms lacked effective coordination mechanisms. The multilevel and multi-stakeholders knowledge sharing platforms, quite similar in Francophone Sub Saharan African countries, functioned just as long as financially supported by donors. Operational designs for knowledge sharing shifted from heavy, expensive and ineffective machine (all stakeholders' consultative platforms) to more specific and pragmatic research and training contract arrangements between research organizations and development workers in the last three decades. Nevertheless, these changes weakened national, regional and district levels coordination mechanisms.

1. Introduction

Interactions between research, extension and farmers are now considered as key elements of the dynamics of innovation of the agricultural sector. In developing countries, this subject has been largely discussed by both scholars and practitioners since it has been established that the success level of agricultural development projects of the 1980s was unsatisfactory. The paradigm of agricultural knowledge and information system (AKIS) which flourished in the 1990s stressed the importance of developing communication and cooperation between the organizations that are involved in agricultural development (Eicher 2007). Concepts, based on participatory agricultural development theories (Schmidt et al 1998), such as integration linkage of/between research and extension systems, bridging or closing the gap between research and extension were developed (Nouatin 2003). At the same time, the process of liberalization of agricultural services (research,

extension, credit, input and seed supply, marketing) implemented in most developing countries led to the involvement of non public actors (non-governmental organizations, private and farmer associations) in agricultural service systems. Effective coordination mechanisms were required to ensure information and experience sharing and dialogue. These reforms, which based on the standard economic theory of public and private goods, have dramatically reduced the role of public sector within the system. Public organizations were financially weakened and play a less and less important and direct role in the supply of knowledge and information, for instance through the management or funding of public extension services. Their role was limited and donors (public or private) preferred financing directly grassroots level actors (Umali and Schwartz 1994, Carney 1998, Katz 2002) There was a complete shift towards the support for knowledge market that would be operated by private actors.

Failures have arisen in the creation of these "agricultural knowledge market" both in Southern (Berdégué and Marchant 2002) and Northern (Leeuwis 2000) contexts. One of the main failures was the decrease of investments (both in time and money) of the actors of AKIS (research, extension, farmers, etc.) in networking and in joint activities of production or coproduction of reliable and relevant knowledge. As a result, the idea prevails today that there is still a role to play for public actors within AKIS, but this role is limited to certain functions, excluding the direct provision of service. The public sector was for instance expected to hold the responsibility to validate commercial information, to conduct evaluations (Bennett 1994), to support networking support action among actors and organizations, and to set up knowledge sharing platforms. In a context of withdrawal of the state from the supply of knowledge within AKIS (especially at the level of advisory services), how did public organizations attempt to hold this responsibility? What are the achievements and the shortcomings recorded in establishing effective and sustainable knowledge sharing platforms?

We posit that this question is all the more relevant in the context of Southern countries. In the context of Northern countries, for instance in the Netherlands, Klerkx et al. (2006) have shown that the stability of public involvement and a robust policy framework were key elements of the successful role of public actors in a privatized AKIS. The context of developing countries is completely different. In these countries, the settlement and reforms of AKIS are not only a question of national or regional public policies. They are also, and maybe primarily, the results of the choices and strategies of international actors, public or private donors and NGOs. In such a context, the question of the sustainability and effectiveness of knowledge sharing platforms appears as a crucial point. In this paper, our aim is to analyze the processes of institutionalization these platforms in Francophone Sub Saharan Africa in the long run. The paper is based on the case study of the national situation of Benin over the last three decades.

2. Conceptual framework

Our goal is to propose an institutional analysis of the evolution of platforms set up to connect research, extension and farmers in the context of Sub-Saharan countries. We used some elements of the sociological and economic theories of services to focus on three aspects of the transformation and of the effectiveness of these knowledge sharing platforms. First, this approach makes it possible to account for front- and back-office as two major dimensions of services, such as brokerage or extension, which connect practice to research. The front-office dimension stands for the direct interactions between the supplier and the client. These interactions are keys for the co-construction of the problem to be solved. The back-office stands for the activities performed by the supplier out of the direct relations with the advisers. This includes all activities aiming at

renewing the knowledge integrated in front-office. These activities could be R&D activities (scientific watch, training of advisers and consultants, participation to experiments, etc.) or networking. Back-office activities are key elements in determining the quality of advice and the reliability of knowledge produced. The theory of demand-driven extension tends to focus on the front-office dimension of services. It was expected that farmer may have a direct control over the innovation process through direct individual and paying interactions with researchers and extension providers. But it neglects the modalities of control of farmers over the back-office dimension of services. Some authors argued that this control or piloting of back-office is an iterative and interactive process. The knowledge that an adviser or a broker will seek through back-office activities depends on the quality of interactions that farmers have with advisers in front-office formerly (Frisvold and Fernicola 2001).

Second, these interactions do not have only an individual dimension. They are also the expression of collective interactions between demand and supply, between farmers, researchers and advisers. Gadrey (2000) stressed the social dimension of the relations of service between clients and suppliers. Indeed, the quality of the interactions depends on the belonging of the clients to certain social groups. For instance, it was shown that certain categories of farmers (e.g. small farms of part-time farms for instance) may have some difficulties to enter in service relationship with brokers or advisers. As a result, the knowledge accumulated through the back-office activities may not match the specific needs of such farms. The lack of interactions between advisers and small farms as a social group, the search for new knowledge may not include specific problems and contexts of production (Labarthe and Laurent 2009). Third, the institutions that run this tuning between supply and demand are integrated in long term trajectories, and in some historical contexts. Indeed, the interactions between supply and demand for knowledge are long-term and cumulative processes which follow specific technological trajectories. In addition, the institutional arrangements that shape the relations between supply and demand are embedded in the history of the relation between farmers' associations and the state. This history is then a key for understanding how different groups of farmers are empowered so as to be able to interact with public or private partners and to participate to the process of accumulation of knowledge between science and practice (Labarthe 2009, Labarthe and Moumouni 2010).

Based on these theoretical assumptions, we analyzed the transformation of these knowledge sharing platforms with regard to three focus points: (i) How did the state succeed in guaranteeing the quality of the knowledge used by farmers (for instance through relations with research and training of advisers) through the settlements of these platforms? (ii) How did these platforms enable to integrate the needs of end-users in the accumulation of knowledge and in the connection with research? (iii) How sustainable were the financing mechanisms planned to support these knowledge platforms? Though these three questions, it is the effectiveness and sustainability of knowledge sharing platforms that we propose to discuss.

3. Methods

This paper tracks the attempts made for institutionalizing knowledge sharing and dialogue frameworks in Francophone Sub-Saharan Africa based on Benin case. Benin is a West African country (about 8 million inhabitants and 115.000 Km²) whose economy relies on agriculture. About 70% of people are involved in agricultural activities. Maize, bean, yam and cassava are some main food crops while cotton, pineapple and groundnut are the main cash crops. The history and pathway of agricultural production and development in Benin is similar to those of most Francophone Sub-Saharan African countries (Tourte 2005). The paper is based on

literature review and semi-structured interviews with various stakeholders according to an historical and institutional perspective. We reviewed agricultural policies applied to capture the attempts for institutionalizing knowledge sharing platforms in the last decades. Key policy documents we reviewed include the policy statement letters of 1991 and 1999 (MDR 1991; MDR 1999), the strategic plan for agricultural sector development of 2010 (MAEP, 2010), and the national agricultural research and extension action plans of 2004 (MAEP 2004, INRAB/MAEP 2004). Some research and extension activity plans/reports were reviewed. In addition, we conducted interviews with 12 stakeholders (staff members of the ministry of agriculture, leaders of development projects, extension and research organizations, Non Governmental Organizations, and Farmers organizations). We collected data on the different paradigms that governed agricultural research and extension, the changes that took place with respect to the involvement and the role of stakeholders in agricultural innovation systems, the different institutions set up to serve as platforms for knowledge sharing between stakeholders at national and local levels in the past three decades. Our analyses focused on three key points which are (i) the capacities of the government to guarantee the reliability of knowledge transferred to farmers through extension agents, (ii) the possibilities for farmers to influence platforms to ensure that their concerns and needs were considered in updating extension agents' knowledge, and (iii) the financial sustainability of the knowledge sharing platforms. Based on Benin case study, we extended discussion to other Francophone Sub-Saharan African countries.

4. Results

4.1 Changing paradigms in agricultural research and extension

The paradigm guiding agricultural research and extension changed each decade (Table 1). The 1980s was characterized by the introduction of the Training and Visits (Benor et al. 1984), strongly promoted by the World Bank to harmonize the agricultural extension system and to strengthen its connection to research. The purpose was the adoption of new technological and institutional innovations by farmers and farmer organizations. With the democratization wind beginning 1990s, a new policy document was adopted under the pressure of the Bretton-Woods institutions. The major change was the liberalization of agricultural services that came with the pluralistic extension system. The reform of liberalization aimed at transferring agricultural development responsibilities to Non Governmental Organizations (NGO), farmers' associations and the private sector; and increasing the role of end users of agricultural services in the organization of advisory services. The process of services users' empowerment was strengthened in the 2000s. Key driving concepts in this period were demand driven agricultural extension, village level participatory approach and advice to farm family.

Table 1: Paradigms of agricultural research and extension in the last three decades

	Main paradigms and systems	Objectives and descriptions
1980-1990	<ul style="list-style-type: none">- Training and Visits- Harmonization of agricultural extension system	<ul style="list-style-type: none">- Transfer of technology and institutional innovation
1990-2000	<ul style="list-style-type: none">- Liberalization of agricultural extension- Pluralistic extension system	<ul style="list-style-type: none">- Transfer of agricultural development responsibilities to NGOs, farmers' associations and private sector- Increase of the role of end users of technology in the organization of agricultural research and extension- Increase of the efficiency of agricultural research and extension
2000-2010	<ul style="list-style-type: none">- Demand driven agricultural research and extension- Village level Participatory Approach (APNV)- Advice to farm family	<ul style="list-style-type: none">- Improvement of the effectiveness of agricultural research and extension- Promotion of community-based development

4.2 Increasing number of stakeholders involved in agricultural research and education

The liberalization of agricultural services fostered the involvement of many stakeholders in service provision. As consequence of paradigm change, increasing number of stakeholders involved in agricultural research and education over time (Table 2). The Department for Agricultural Research which became later the National Institute for Agricultural Research (INRAB) is the most importance research center. The Faculty of Agricultural Sciences (FSA) of the University of Abomey-Calabi and Faculty of Agriculture (FA) of University of Parakou created later conducted specific research projects. Non Government Organizations (NGO) started participating in applied research and research-development since the last decade. The Regional Center for Agricultural Development (CARDER) which was the major agricultural advisory service providers in the 1980s still plays a key role. However, NGO and now Farmer Organizations (FO) increasing participate in providing farmers with agricultural services.

Table 2: Evolution of research and extension stakeholders in the last three decades

	Research	Advisory services
1980-1990	- Department for Agricultural Research - Faculty of Agricultural Sciences	- Regional Center for Agricultural Development
1990-2000	- National Institute for Agricultural Research - Faculty of Agricultural Sciences	- Regional Center for Agricultural Development - Non Government Organizations
2000-2010	- National Institute for Agricultural Research - Faculty of Agricultural Sciences - Faculty of Agriculture - Non Government Organizations	- Regional Center for Agricultural Development - Non Government Organizations - Farmer organizations (FO)

4.3 Institutionalization of knowledge sharing platforms in the last three decades

The involvement of many stakeholders in the agricultural research and extension systems required the creation of dynamic platforms for knowledge generation and experience sharing. Some attempts were taken to establish platforms (Table 3).

Table 3: National and local platforms established in the last three decades

	National levels	Local and sector levels
1980-1990	- RAMR project in 1986 - Research-Development	- Monthly Workshop for Technology Review (AMRT)
1990-2000	- PRSA Project in 1992 - National Agricultural Extension System/Committee - National Agricultural Research System/Committee	- Departmental and District Agricultural Extension Systems/Committees - District Agricultural Extension Systems/Committees
2000-2010	- AGRAN Project in 1998 - Regional Committee for Research-Development	- Sector Committee for Research-Development - Contact arrangements with research organizations

Based on the RAMR project experience which introduced Research-Development approaches and inspired by training and visits paradigms, Monthly Workshops for Technology Review (AMRT) were set up in the 1980s in Benin. AMRT which brought together extension workers and research were the main institutional framework for implementing national research-development policy. The National Institute for Agricultural Research encompassed six regional centers. The regional centers organized together with the Regional Center for Agricultural Development the AMRT. During the workshops including field visits, researchers trained CARDER's matter specialists on new agricultural technologies. In return, research updated their knowledge of farmers' concerns through interaction with matter specialists. For this event, the matter specialists working in the entire department should gather and be accommodated at the workshop venue. Farmers and extension field workers were not given opportunity to participate in the workshop. The matter specialists trained, later in their respective district, the extension field workers who

were directly in touch with farmers. AMRT contributed for example to the vitalization of cotton industry. The progressive reduction of the frequencies (from six to two workshops) and the duration (from two to one) of the workshops, the cancellation of field visits due to budget constraints led to the weakening the AMRT platforms (Moumouni 2000).

During the 1990s, National, Departmental and District Agricultural Extension/Research Systems/Committees including agricultural development stakeholders were set up to promote participatory technology development in Benin (MDR 1998). These committees with hierarchy relationship were established in 1993 with the support of the World Bank in the framework of the reform of liberalization of agricultural services introduced through the PRSA project. For instance, the district committees for agricultural extension (CSPVA), including researchers, extension workers, farmer organizations and other agricultural service providers, was the district platforms. Endowed with technical commissions, the objective of CSPVA was to provide a framework for knowledge sharing and dialogue between stakeholders at the district level. According to the constitution of the platforms, district farmer organizations should finance the functioning of the platform (MDR 1996). The National, Departmental and District Agricultural Extension/Research Systems/Committees have not really been effective on the field and ceased definitively functioning in 1998 for lack of financial resources, when the World Bank ended its support. The state, financially weakened by the liberalization reform, was not enough well prepared to manage such a complex system. Farmers were not convinced that financing such platforms would result into payoffs.

Regional and Sector Committees for Research-Development (CRRD/CSRD) given a voice to technology users were established in the 2000s to link researchers, extension workers and end users of technology including farmers and the private sector in Benin. Promoted by the AGRAN project, CRRD and CSRD were regional and national consultative meetings where researchers exposed their research results and new technologies as simple as possible to intermediary users (extension workers and NGO) and end users (farmers and consumers) of technologies. Joint reflection process led to the identification of new research questions. Calls for research proposals on the new research concerns were opened for researchers from universities, NGO, national research institutes, etc. Multidisciplinary, interdisciplinary and applied research projects were given priority. Many donors contributed to a sort of basket funds which were used to finance selected research projects. The National Institute for Agricultural Research coordinated this mechanism which succeeded in revitalizing agricultural research in Benin. However, extension workers and farmers were not well prepared for such interaction and could not influence too much the course of events. The system is now just ticking over for many reasons. Many participants to the systems did not trust the proposal selection process (Fiodendji and Hodonou, 2004) and financial issues emerged after Danish and German assistance ended.

Currently, many donors and development projects arrange contacts with research and extension organizations for specific purposes. For instance, the Benin Cotton Inter-professional Association (AIC), including national cotton farmers' association, ginner's association and input suppliers, appointed the national agricultural extension department to provide cotton farmers with technical and managerial advisory services. The Roots and Tubers Development Programs, supported by the International Funds for Agricultural Development, contracted with the National Institute for Agricultural Research to develop new cassava and yam varieties. Many similar experiences were implemented (MAEP 2007). NGOs are generally involved in the implementation of such projects. Finally, project's donor, management committee, involved NGOs and end users constitute a chain of actors who meet frequently for experience sharing and dialogue. Such smaller platforms

around common specific interests are perceived by many stakeholders as pragmatic, less expensive and more likely to mobilize farmers' financial contribution.

4.4 Comparative assessment of the platforms

Table 4 presents a comparative and qualitative assessment of the state's coordination and knowledge quality control in back-office, the power given to power farmers to influence back-off activities and the financial sustainability of the platforms created during the three periods.

Table 4: Comparative assessment of the platforms

	Period 1 Training and visits	Period 2 Liberalization and pluralism	Period 3 Demand-driven and participation
Coordination and quality insurance of knowledge in back-office by the state	+++	+	++
Power of farmers to influence back-office activities	+	+	++
Financial sustainability of the knowledge sharing platforms	+	+	+
+++ : Effective or sustainable ++ : Little effective or sustainable, + : Ineffective or unsustainable			

During the 1980s characterized by the implementation of the Training and visits, public organizations provided farmers with advisory services. Public extension officers got guidelines from the ministry of agriculture with regard to back-office activities to perform, which Monthly Workshops for Technology Review were part of. They must report to the hierarchy for quality control and compliance to national agricultural policy. The involvement of NGO and farmer organizations in the organization of knowledge management systems during the 1990s created a strong need for coordination and quality control. Failure to achieve these tasks resulted into the ineffectiveness of the knowledge sharing and dialogue platform. Subsequently, the new players especially NGO, led the knowledge system without any rigorous control and coordination of the state. With the CRRD/CSRD platforms of the 2000s, the government set out to conquer to lost attribution without great success.

Farmers exerted only little control over the knowledge production and brokerage in the training and visits systems. They were generally missing to the Monthly Workshops for Technology Review where they could influence some research and extension back-office activities. NGO and farmers organizations were much closer to farmers in the 1990s. They offered grassroots level interaction possibilities that government-led platforms (CDVA/CSPVA) failed to ensure. Demand-driven innovation concepts promoted in the 2000s were expected to strengthen farmers' participation to back- and front-office activities of research and extension. Instead of true demand-driven agricultural services, this was rather the starting point for learning how to interact with researchers and advisers, as farmers were not prepared to play such an important driving role in the innovation systems.

The lack of financial sustainability is from far the biggest similarity of the knowledge sharing platforms set during the last three decade. The functioning of the platforms started with external financial support with the plan to increase progressively the share or contribution of local and national stakeholders, mostly the state and end-users. The platforms functioned just as long as financially supported by donors. The government weakened by privatization reforms, expected NGO and farmer organizations the key role in financing service provision and knowledge sharing

platforms. At the same time, all the other actors of innovation management systems claimed that government should finance such activities.

In conclusion, the control of the quality of the knowledge used in back-office by advisers and the coordination of knowledge sharing platforms were costly activities. These activities were rather more effectively performed within the T&V approach thanks to the World Bank's heavy investments. But the platforms experiences in the context of pluralistic and demand-driven service approaches appeared to be unsustainable, because of failure to get end-users influencing and financing the organization of services. Finally, as public organizations were not well prepared to ensure effective coordination and service quality control, farmers and farmer organizations were not well prepared for demand-driven agricultural services. Parallel to this, taking the responsibility for financing knowledge sharing became a ping-pong game.

5. Discussion and conclusion

The involvement of many stakeholders in knowledge management systems required the establishment of experience sharing and dialogue spaces, and effective coordination mechanisms which were generally devoted to public organizations. As response to this strong need, multilevel and multi-stakeholders platforms were set up. The platforms were not sustainable because the lack of effective coordination and sustainable financing mechanisms in Benin. These multilevel and multi-stakeholders knowledge sharing platforms are similar in Francophone Sub Saharan African countries. In addition, farmers control over the innovation systems was not enough effective. In many countries such as Cameroon and Mali, where variants of training and visits systems were implemented (Davis 2008), workshops similar to AMRT were organized to promote knowledge sharing among stakeholders (Anderson et al. 2006; Bindlish and Evenson 1997). These platforms were too expensive too be sustainable and lack of participation of stakeholders. These machine models of platforms are likely to reinforce the negative aspects of hierarchical control in bureaucracies. Much more attention may be paid to organizational sustainability in terms of financial and strategic management capacity (Reader 1992). Attempts to establish such pluralistic extension systems were made in many countries such as Senegal and Mali (Davis 2008). These hierarchical machines were very expensive to run and hard to coordinate. Rivera and Alex (2004) posited that within the coming decade, policy makers will find themselves challenged to confront again the role of national government vis-à-vis extension's institutional pluralism. This position is largely acceptable with regard to the coordination role attributed to public organization. Indeed, the prospect that public organizations having the convening authority should enable to bring different stakeholders together to exchange information, develop new partnerships and collaborative mechanisms did generally not work. This may explain why, over the decades, these platforms shifted from heavy, expensive and ineffective machine (all stakeholders' consultative platforms) to smaller and less expensive platforms around common specific interests. These changes weakened more national, regional and district levels coordination mechanisms.

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