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INSTITUTIONAL AND ORGANISATIONAL ARRANGEMENTS IN RELATION TO WOMEN ACTORS IN THE RICE PARBOILED INNOVATION PLATFORM IN NORTH-EAST BENIN

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ABSTRACT

To address the complex challenges affecting the parboiled rice value chain in Benin, an innovation platform (IP) was participatory implemented in the municipality of Malanville in Benin. This study analysed the institutional and organisational arrangements that arise from the establishment of this innovation platform. Focus Group Discussions (FGDs) and semi-structured and structured interviews were carried out at stakeholder level. Quantitative data were collected through questionnaires from 200 women rice farmers, selected through a stratified random sampling method. Results showed that the platform strengthened interactions between the different stakeholders to overcome institutional and organisational issues such as standardisation of parboiling practices and steps; access to credit and to remunerative market; standardisation of the variety of rice; and the organisation of women into groups. In terms of governance, the platform was vertically integrated. The leading actors had a monopoly on decision-making and resource management. The study suggests the promotion of the innovation platform approach, to enable small producers to overcome the obstacles that hinder good production.

Key Words: Complex challenges, governance, IP, Malanville, stakeholder

RÉSUMÉ

Pour répondre aux défis complexes affectant la chaîne de valeur du riz étuvé au Bénin, une plateforme d'innovation (PI) participative a été mise en place dans la commune de Malanville au Bénin. Cette étude a analysé les arrangements institutionnels et organisationnels qui découlent de la mise en place de cette plateforme d'innovation. Des discussions de groupe (FGD) et des entretiens semi-structurés et structurés ont été menés au niveau des parties prenantes. Des données quantitatives ont été recueillies au moyen de questionnaires auprès de 200 rizicultrices, sélectionnées par une méthode d'échantillonnage aléatoire stratifié. Les résultats ont montré que la plateforme renforçait les interactions

entre les différentes parties prenantes pour surmonter les problèmes institutionnels et organisationnels tels que la standardisation des pratiques et des étapes d'étuvage ; l'accès au crédit et au marché rémunérateur ; standardisation de la variété de riz ; et l'organisation des femmes en groupes. En termes de gouvernance, la plateforme était intégrée verticalement. Les principaux acteurs avaient le monopole de la prise de décision et de la gestion des ressources. L'étude suggère la promotion de l'approche de la plateforme d'innovation, pour permettre aux petits producteurs de surmonter les obstacles qui entravent la bonne production.

Mots Clés : Enjeux complexes, gouvernance, PI, Malanville, partie prenante

INTRODUCTION

Among the major cereals produced in Benin, rice ranks third in production systems and second in terms of food (Singbo, 2000). The development of local rice value chains necessarily involves improving the quality of rice. This requires the adoption of appropriate technologies, such as the reduction of post-harvest losses and the acceptance by consumers of local rice as a quality product (Demont and Neven, 2013). Growing imports also lead to some distortion in the market (Adégbola *et al.*, 2011).

To address these constraints, the Africa Rice Center (AfricaRice) and its national partners in the National Agricultural Research System (NARS) have developed new technologies and innovations to improve productivity and contribute to increase the income of actors involved in rice (Hinnou, 2013). However, the innovations developed remain poorly or not adopted by actors along the rice value chains (Zossou *et al.*, 2009). To remove these constraints, new strategies for promoting value chains are being developed through innovation platforms (IP) to strengthen the existing organisational and institutional system (Hinnou *et al.*, 2018).

Innovation platforms (IPs) are consultation frameworks that bring together different stakeholders to identify solutions to common problems and achieve common goals in a win-win interaction (Tui *et al.*, 2013). The innovation platform of the rice value chain of the municipality of Malanville brings together different categories of actors who must work in synergy of actions to promote access to

the market for parboiled rice locally. Recent studies on the issue of IP have addressed aspects of their structure and functioning (Adekunle *et al.*, 2010; Brouwer *et al.*, 2016; Francis *et al.*, 2016; Glin *et al.*, 2016), management and facilitation (Ngwenya and Hagmann, 2001; Adekunle and Fatunbi, 2012; van Paassen *et al.*, 2013). However, there is little information on the institutional, organisational and governance dimensions of an agricultural innovation platform. The need for information on how platforms contribute to development outcomes (Kilelu *et al.*, 2013) is one of the questions addressed in this study. The objective of this study was to analyse the institutional and organisational arrangements within the Malanville parboiled rice value chain innovation platform in Benin.

Key definitions. The institution is perceived in this study as the formal and informal rules by which agents interact. These are the attitudes, habits, rules, laws, norms, practices and ways of working that dictate the interactions between individuals and organisations (World Bank, 2012; Herbel *et al.*, 2013). An institutional arrangement, therefore, refers to a set of rules or agreements governing the activities of a group of people or individuals pursuing a given objective.

Governance is seen as the way in which decision-making power is structured and exercised in an organisation (Bencharif and Rastoin, 2007). Innovation champions are defined as “individuals who emerge informally and make a decisive contribution to innovation by actively and enthusiastically promoting its progress through critical stages” (Howell *et*

al., 2005). They are essential to eliminate the many obstacles that emerge in the processes of innovation. They can be categorised into four types: power champion, technology champion, process champion, and network or relationship champion (Howell *et al.*, 2005; Gupta *et al.*, 2006; Smith, 2007).

MATERIALS AND METHODS

Study area and sampling. The study was conducted in the commune of Malanville in the far north of the Republic of Benin, in the department of Alibori during the period from August to October 2019. Malanville is one of the municipalities with more lowlands and with potential for rice production (Ayedegue *et al.*, 2020). Agriculture in the area is diversified and is based on five promising sectors, namely: rice, corn, cotton, market gardening, sorghum (PDC, 2017).

Semi-structured interviews. All the 14 categories of actors that make up the platform (Fig. 1) were interviewed in groups or individually. The semi-structured group interviews were conducted with the eight categories of actors with large numbers, namely women seed companies, rice producers, service providers, traders, young entrepreneurs, millers and transporters. The participants in the group interviews are made up of representatives of the actors who are on the platform's steering committee and five key informants chosen at random from the database of each category of platform actors. Individuals were conducted with the representatives of the other categories of actors who are in the steering committee of the platform, namely research, extension, town hall, microfinance institution, equipment manufacturer, and local NGO. In addition to semi-structured group and individual interviews, structured interviews were conducted with a random sample of 200 women selected from the database of 538 women rice parboilers who are active members

of the platform. These structured interviews were carried out with women parboilers because they represent the largest category of actors on the platform in terms of numbers.

Data collection and analysis. Data were collected through a combination of qualitative and quantitative approaches. The qualitative approach was used to collect information on organisational and institutional arrangements and governance within the platform. Qualitative data were collected at the level of all 14 categories of actors through focus group discussions (FGDs) and group interviews with interview guides and participant observation. These qualitative data were collected to understand attitudes, habits, rules, laws, norms, practices and ways of working that dictate the interactions between the different stakeholders of the platform. The quantitative approach was used to collect information on the socio-demographic characteristics of women rice parboilers, their levels of satisfaction and appreciation of the governance of the innovation platform.

Governance of the innovation platform. The structured interview was carried out using a questionnaire that was administered individually to the 200 women rice parboilers surveyed. All interviews (group and/or individual) were systematically recorded and transcribed.

The qualitative data obtained were subjected to content analysis. As for the quantitative data generated, they were the subject of descriptive statistics (percentages and tables) established with Excel and STATA 14 software.

RESULTS

History and evolution of the innovation platform (IP). The Africa Rice Center (AfricaRice) in collaboration with the National Institute of Agricultural Research of Benin (INRAB), the Communal Sector for Agricultural Development (SCDA) and the actors of the Malanville rice sector set up places

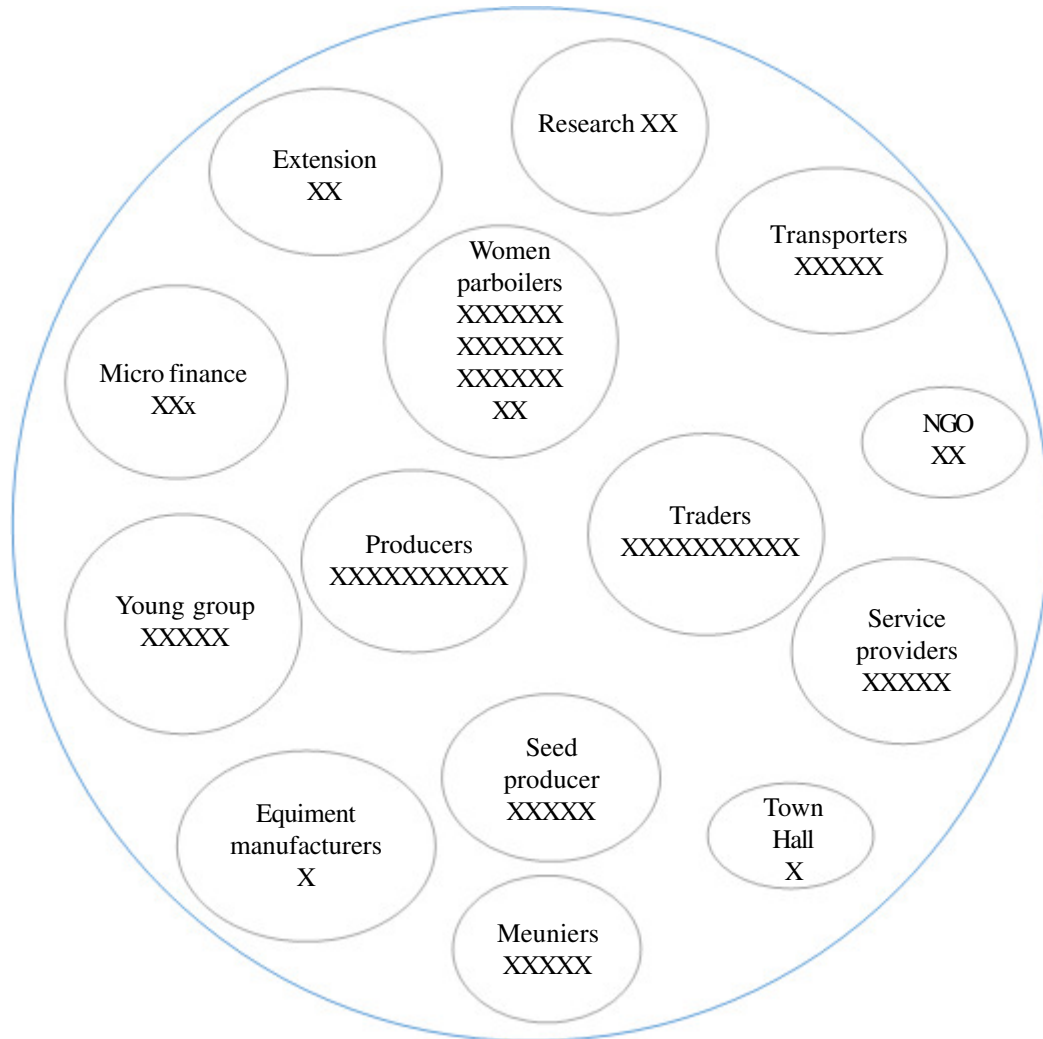


Figure 1. Mapping of the innovation platform. The number of crosses alludes to the importance of grassroots actors in terms of the number of different stakeholders in the innovation platform. Source: Based on field data, 2019.

for the Innovation Platform (IP) of Malanville in 2016 within the framework of the project “Support to Agricultural Research-for-Development on Strategic Commodities in Africa” (SARD-SC), financed by the African Development Bank (AfDB). Innovation platform had as its entry point, the improvement of the productivity and competitiveness of local parboiled rice on the local and urban markets of Benin. It is made up of the various stakeholders of the parboiled

rice value chain (Fig. 1). Women parboilers constitute the majority stakeholder of the innovation platform in terms of workforce. Each actor played a very specific role for the proper functioning of the platform. A coordination committee was set up during the establishment of the platform and is made up of representatives of each stakeholder. Training is regularly organised by AfricaRice and other research and development structures (INRAB, SCDA) on good rice parboiling practices.

The platform also benefited from the initiation of an improved rice parboiling device by Africa Rie, the installation of agricultural equipment thanks to the Japanese emergency initiative, the training of young people in mechanisation, the introduction to proper packaging and labeling of rice, and training on Rice Advice which is a decision support tool for the management of rice crops. These various capacity building, technical, financial and agricultural infrastructure and equipment support served as catalysts to intensify the interactions between the various stakeholders in order to achieve the objectives of the platform which are those of (i) developing capacities to generate conducive knowledge; (ii) develop dynamic interactions between a multitude of actors who have very diverse perspectives and skills; (iii) base interventions between stakeholders on the available and most relevant knowledge.

Organisational and institutional arrangements. At the organisational level, there was the structuring of women into rice parboiling groups. A total of 538 women rice parboilers were members of the platform and organised themselves into 22 unevenly distributed groups. All the groups were formed by affinity in the villages to improve the performance of the parboiling activity. All the groups were formalised at the town hall of Malanville with the technical support of the Communal Sector for Agricultural Development.

For their proper functioning, an executive office composed of a president, a secretary and a treasurer was set up. These officers were elected by the members based on seniority and level of education. The setting up of women's groups had positive impact on collective learning, individual learning and the improvement of rice parboiling practices through the introduction of new stages (sorting, winnowing and triple washing) to improve the quality of the final product. Around 63% of the women surveyed reported that teamwork within the platform contributed

to improving their practices. They justified these improvements by the effect of imitation in the process of social learning. About 87% of women reported having exchanged experiences with their peers on new rice parboiling practices.

A total of 90% of women asserted that group work and observations had a positive influence in their decision to adopt new practices to improve the quality of the final product. Women found group work important and interesting because it eased on labour requirement. As a group, it was also easier to find more profitable markets. The women considered that work was done in a friendly atmosphere, with an emphasis on sharing useful and relevant knowledge and information. The organisation of women in parboiling groups also strengthened the social climate and trust in their relations with the other categories of actors on the platform. They, therefore, found it easier to negotiate transaction methods and prices with paddy producers, millers, transporters, seed companies, etc. They also had easier access to microfinance institutions which had more confidence and were less demanding when it came to group credit rather than individual credit.

Table 1 summarises the relationship status of women parboilers with other actors in the parboiled rice value chain. At the institutional level, constraints were identified and overcome, thanks to the various champions (Table 2). Among the constraints, there was need to improve and standardise rice parboiling practices and stages; difficulty of access to credit, and the need to standardise the variety of rice used. In addition, there was need for contractualisation between women parboilers and producers, traders, young entrepreneurs, millers on the one hand; and the need for contractualisation between producers and seed companies on the other hand.

Regarding the champions who helped to overcome these constraints, four types were identified according to the literature. The champion of power was the president of the Union of rice producers in the commune of

TABLE 1. Matrix of relationships between main actors in the parboiled rice Innovation Platform in Benin

	Women parboilers	Input suppliers	Traders	NGO/project	Producers	Seed producer
Women parboilers	-	×	+ B1=3 I	+++ B1>5 F	+++ B1=6 I	×
Input suppliers	-	-	×	++ B2>5 F	+++ B2=6 F	+++ B2=7 F
Traders	-	-	-	+ B3>5 F	+++ B3>6 F	×
NGO/project	-	-	-	-	+++ B5<6 F	+++ B5<7 F
Producers	-	-	-	-	-	+++ B6=7 F
Seed producer	-	-	-	-	-	-

Relationship intensity: +++ very strong; ++ moderately strong; + low; F = formal relationship; I = informal relationship; B: Benefit or interest from the relationship: B 1= 3 means 1 and 3 benefit equally, B 4>5 means 4 benefit more, B 6 means 6 benefit alone / ; × = No direct relationship

Source: Based on field data, 2019

Malanville. As a resource person in the rice value chain in the commune, he was able to use his power and influence to negotiate with microfinance institutions for access to credit for producers and women parboilers. He was also able to raise awareness and convince his fellow producers to adopt the IR841 variety for the rice to be marketed. The technology champion was an extension service officer from the Communal Sector for Agricultural Development. He was able to educate women on the use of parboiling equipment allowing the pre-cooking of rice. He also made women aware of the advantages of good packaging and labeling to better promote the final product.

The champion of the process was represented by the president of the Communal Union of Cooperatives of Women Rice

Processors. She was able to use her experiences as president to negotiate and organise training and exchange visits to build the capacity of women on improved rice parboiling practices. The network or relationship champion was the AfricaRice marketing manager who was able to facilitate the connection of women parboilers on the one hand with marketing and labeling service providers for a better presentation of the final product; and on the other hand with more profitable markets.

Perception of women parboilers. The development of dynamic interactions between a multitude of actors who had very diverse perspectives and skills requires good communication and good management of the

TABLE 2. Institutional constraints overcome by the parboiled innovation platform in Benin

Platform action to overcome institutional constraints	Obstacles to be overcome	Activities undertaken to overcome the obstacle	Position of the champion	Role played by the champion in overcoming the barrier
Changes in rice parboiling practices.	Information barrier	Involve women in the various training courses organised on parboiling so that they can acquire new knowledge	The President of the Communal Union of Coop of Female Rice Parboilers.	As a process champion, she was able to negotiate trainings with her experiences on improved practices to women to increase their knowledge and get more members to use these practices.
Make the price of parboiled rice competitive and link actors to a potential market.	Organisational barrier	Explore markets for prices of imported parboiled rice and collect samples.	Africa Rice Marketing Manager.	As a network champion, she facilitated the meeting of IP stakeholders with a rice trader willing to buy their product to ensure a market for it. In addition, a business case analysis was carried out to reduce costs so that the price of parboiled rice could be competitive in the market.
Improving producers' access to credit and enhancing the value of the IR841 variety.	Institutional/ administrative barrier	Negotiate with the microfinance institutions that are part of the platform so that producers can obtain credit. Sensitize the actors on the advantages of the IR841 variety.	The President of the Union of Rice Producers in the commune of Malanville.	As a power champion, he used the power or influence he had as president to get credits to producers working with the platform. In sum, the credits are granted directly to the platform and then according to the area of the producers, the platform makes the distribution.

TABLE 2. Contd.

Platform action to overcome institutional constraints	Obstacles to be overcome	Activities undertaken to overcome the obstacle	Position of the champion	Role played by the champion in overcoming the barrier
Sensitisation of women on parboiling equipment and initiation to packaging and labelling of parboiled rice to increase its added value.	Barrier Technological and information barrier	Sensitize women on the use of proper parboiling equipment and stakeholders on the benefits of good packaging and labelling.	An extension agent	As a technology and process mushroom, she took the example of what is done on the hill platforms to show the advantages of packaging and labelling. Also, she was able to find NGOs and projects that supported the women through donations of materials.

Source: Field data, 2019

human, financial and material resources of the platform with a certain transparency and participation of the members in decision-making. decisions. The most important actors in terms of numbers were interviewed to assess the state of governance of the innovation platform. Only 24% of women thought that there was good governance at the platform level. The majority (76%) had opinions divided between poor (36%) and fair (40%) governance. This bad management was justified by a lack of communication between the coordination committee of the platform and the grassroots actors. Grassroots actors were, therefore, not often informed of support from technical and financial partners; as well as decisions made by the coordination committee for the opportunities and constraints that arise.

At the beginning of the establishment of the platform, 92% of women reported that decision-making was done unanimously with representatives from each women's group and the coordination committee. The representatives of the groups involved in decision-making were responsible for relaying information to the grassroots. About two years after the establishment of the platform, 98% of women reported that they were no longer aware of decision-making; or the actions that are taken. However, it is important to note that almost all of the women (95%) reported that the material resources of the platform were well maintained and in good condition; even if not everyone had access to it in a fair and transparent way.

Regarding the levels of satisfaction of the expectations of women parboilers who were members of the platform, 85% noted that they were completely satisfied. Their satisfaction was mainly through capacity building and enriching their knowledge, facilitating interactions between them and other categories of actors, including producers, traders, microfinance institutions, transporters and service providers.

The platform allowed creation of a certain relational proximity, which favoured the access to the factors of production and

reinforced the social capital and the climate of confidence between the various categories of actors. This was further evidenced by the statement of a woman parboiler “The creation of the platform made the women know each other better in the villages and managed to share experiences, knowledge, information and also markets”. This relational proximity, therefore, positively influenced the quality, price and quantity of the final product offered.

DISCUSSION

Organisational and institutional arrangements. Several institutional and political obstacles generally hampered effective collaboration and knowledge flows between these different actors. This study has highlighted a number of obstacles such as the difficulty in accessing the credit, difficulty in accessing the disposal market; and the need for standardisation of the variety used.

Actions have been taken spontaneously by platform champions to counter these obstacles. This led to highlighting of organisational and institutional arrangements. These arrangements are similar to those identified by Adjei-Nsiah and Klerkx (2016) at the palm oil innovation platform in Ghana. This also confirms the assertion that the innovation platform is a framework for consultation and action that strengthens the innovation system, which is a network of organisations, companies, individuals and institutions that strive to integrate new products, new processes and new forms of organisation into economic and social activity (Klerkx *et al.*, 2013; Adjei-Nsiah and Klerkx, 2016; Zossou *et al.*, 2020).

Four types of champions have been identified in accordance with the literature (Hauschildt and Kirchmann, 2001; Howell *et al.*, 2005; Gupta *et al.*, 2006; Smith, 2007) to facilitate the removal of the constraints encountered: the power champion, the technology champion, process champion, and network or relationship champion. These innovation champions collaborated as a team

as noted by Fichter (2009), to effectively promote an innovation process.

These results are similar to those of Hounkonnou *et al.* (2012) as part of smallholder farmer innovation platforms in West Africa. These institutional and organisational arrangements have also strengthened social capital by intensifying interactions between actors and improving social cohesion in a climate of trust. As highlighted by Ahoyo *et al.* (2019), they improved the visibility of interventions and strengthened the links between different actors. This social capital is a highly valued element in the sustainable development of agriculture in sub-Saharan Africa (Kaminski, 2007; Zossou *et al.*, 2020).

State of governance of the IPs. The results showed some shortcomings in the governance of the platform by the coordination committee, which is composed of a representative of the various stakeholders. These shortcomings mainly concerned in effective communication between representatives and grassroots actors and poor use of participatory and inclusive approaches in the decision-making process. This confirms the work of Ahoyo *et al.* (2019), who pointed out that leaders are so involved in many things that their capacity and drive take a hit. To be effective, governance must be based on principles such as democracy, participation, equity and justice, unity in diversity, transparency, inclusion, legitimacy and accountability (Schiffer *et al.*, 2010). Given that an IP brings together a diversity of actors, some very influential and others less (Zossou *et al.*, 2009), it is important to closely monitor these power relations through participant observation and documentation of platform activities in order to manage them well through participatory and inclusive approaches (Cullen *et al.*, 2013; Hinnou *et al.*, 2018; Zossou *et al.*, 2020). The major challenge for the parboiled rice innovation platform is to redefine the governance system, in particular the involvement of grassroots

actors in the management and decision-making processes on the one hand, and the strengthening of their capacity to assume the functions of responsibility with all the efficiency and effectiveness required on the other hand (Elbehri and Lee, 2011; PNUD 2012).

CONCLUSION

The establishment of the parboiled rice value chain innovation platform in Malanville has fostered institutional and organisational strengthening of the networks of actors involved in the sector. Institutional and organisational barriers to innovation have been overcome through synergy of actions among stakeholders and facilitation actions by champions of power, technology, process, and network or relationships. In addition to the institutional and organisational strengthening of interactions between the various categories of actors, the innovation platform has also had a positive impact on learning, which is also an important pillar of agricultural innovation systems. The social learning of women rice parboilers has in fact been reinforced by observation and experimentation encouraged by training and exchange visits. With regard to governance, efforts are still necessary for the effective involvement of grassroots actors in the decision-making process and the management of human, financial and material resources. For the sustainability of the innovation platform on the rice value chain in Malanville, it is important that actions are taken to (i) balance power relations between the different stakeholders; (ii) good communication between stakeholder representatives and their respective bases; (iii) capacity building for actors in innovation; (iv) networking of the platform with others dealing with the rice value chain and/or other agricultural value chains; and (v) capacity building for platform facilitators.

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