

First experiences to ground agroforestry Innovation Platforms into their local institutional context

Jan Brouwers ⁽¹⁾, Diaminatou Sanogo ⁽²⁾, Tionyéfé Fayama ⁽³⁾, Der Dabire ⁽⁴⁾,
Brigitte Bastide ⁽³⁾, Josiane Seghieri ⁽⁵⁾, Verina Ingram ⁽⁶⁾, Jolanda Van den Berg ⁽⁷⁾

⁽¹⁾ Wageningen Centre for Development Innovation, Wageningen University and Research, PO Box 88, 6700 AB Wageningen (The Netherlands). E-mail: jan.brouwers@wur.nl

⁽²⁾ ISRA, Institut Sénégalais de Recherches Agricoles (ISRA), Route des Hydrocarbures, BP 3120, Dakar (Sénégal).

⁽³⁾ INERA, Institut de l'Environnement et de Recherches Agricoles du Centre National de Recherche Scientifique et Technologique (CNRST), BP 910 Bobo-Dioulasso (Burkina Faso).

⁽⁴⁾ CIRDES, Centre International de Recherche-Développement sur l'Élevage en zone Subhumide, PO Box 454, Bobo-Dioulasso (Burkina Faso).

⁽⁵⁾ IRD, Institut de Recherche pour le Développement de UMR Éco & Sols, Campus SupAgro, Bâtiment 12, 2 Place Viala, 34060 Montpellier Cedex 2 (France).

⁽⁶⁾ Forest & Nature Conservation Policy Group, Wageningen University & Research, PO Box 9101, 6700 HB Wageningen (The Netherlands).

⁽⁷⁾ Wageningen Economic Research, Wageningen University & Research, PO Box 9101, 6700 HB Wageningen (The Netherlands).

Received 11 July 2022, accepted 26 April 2023, available online 30 May 2023.

This article is distributed under the terms and conditions of the CC-BY License (<http://creativecommons.org/licenses/by/4.0>)

DOI: 10.25518/1780-4507.20340

Description of the subject. We present a literature overview of innovation platform practices in Africa, combined with case studies of sub-national platforms established in Senegal and Burkina Faso.

Objectives. The main objective was to understand how the facilitation process of innovation platforms can become more effective. Two specific objectives were to study RAMSES II innovation platform cases in Senegal and Burkina Faso where we observed and reflect on the facilitation of agroforestry innovation platforms. A final objective was to position the case results in a literature overview of IP experiences in Africa.

Method. Information on innovation platforms was collected by combining an analysis of RAMSES II agroforestry innovation platform cases and an innovation platform literature review.

Results. The study illustrates how the organizational position of the facilitating research agents contributed to shaping platform agendas, functions, and outcomes. This process hinges on the deployment of legitimacy claims, which appeal to technical expertise and scientific narratives, in this case on agroforestry. Institutional embeddedness is shown to be a critical aspect of agency in innovation platform multi-actor processes, contributing to framing local understandings of agroforestry and to channel collective efforts.

Conclusions. The institutional identity of facilitating research agents and their relationship to members of a platform requires a more open and process oriented role. Coordination and facilitation roles can also be taken up by other members of the platform. This enhances the platform's ability to ground their agendas into local needs and priorities. It also enhances sustainability, as active membership during the project period prepares platform members to continue after project closure.

Keywords. Facilitation, innovation platforms, agroforestry, Senegal, Burkina Faso, institutions.

Premières expériences pour ancrer les Plateformes d'Innovation agroforestière dans leur contexte institutionnel local

Description du sujet. Nous présentons un aperçu de la littérature sur les pratiques des plateformes d'innovation en Afrique, combiné à des études de cas de plateformes locales établies au Sénégal et au Burkina Faso.

Objectifs. L'objectif principal était de comprendre comment le processus de facilitation des plateformes d'innovation peut devenir plus efficace. Deux objectifs spécifiques étaient d'étudier les cas des plateformes d'innovation RAMSES II au Sénégal

et au Burkina Faso où nous avons observé et réfléchi à la facilitation des plateformes d'innovation agroforestières. Un objectif final est de positionner les résultats de l'étude de cas dans une vue d'ensemble de la littérature sur les expériences avec les plateformes d'innovation en Afrique.

Méthode. Les informations sur les plateformes d'innovation ont été recueillies en combinant une analyse des cas des plateformes d'innovation agroforesterie RAMSES II et une revue de la littérature sur les plateformes d'innovation.

Résultats. L'étude illustre comment la position organisationnelle des agents de recherche facilitateurs a contribué à structurer les programmes, les fonctions et les résultats de la plateforme. Ce processus repose sur le déploiement de revendications de légitimité, qui font appel à l'expertise technique et aux perspectives scientifiques, en l'occurrence sur l'agroforesterie. L'intégration institutionnelle s'avère être un aspect essentiel pour autonomiser les différents acteurs, contribuant à obtenir des compréhensions communes sur l'agroforesterie et à canaliser les efforts collectifs.

Mots-clés. Facilitation, plateformes d'innovation, agroforesterie, Sénégal, Burkina Faso, institutions.

1. INTRODUCTION

Multi-actor platforms like innovation platforms have been identified as promising institutional mechanisms that can foster transformative changes in agriculture and have therefore been extensively studied (see for instance Klerkx et al., 2013; Sanyang et al., 2016). The term “innovation platform” (IP) denotes “a structured space that enables interaction among social actors, entailing a multiplicity of modalities and functions” (Kilelu et al., 2013). An IP may refer to a communication tool, an integrated (agricultural or agroforestry) research program (see for instance Tenywa et al., 2011 and Sartas et al., 2020), a “landscape-wide network for natural resource management” (Cullen et al., 2014), a “multi-scale, multi-actor, value chain consortium” (Kilelu et al., 2013), or “a private-public partnership for market development” (Thiele et al., 2011, quoted by Totin et al., 2018). In this study, based on the work of Thiele et al. (2011), Kilelu et al. (2013) and Cullen et al. (2014), we conceptualize IPs as “structured spaces for communication and collaboration among interdependent stakeholders who come together to pursue a shared goal or address a common challenge” (quoting Totin et al., 2018). Through platform engagement, “differently positioned actors work together in identifying needs, negotiating priorities, identifying solutions, mobilizing resources, building capacity, and participating in co-learning and collective action” (Tenywa et al., 2011). We applied the IP approach in the RAMSES II research and development project, during which multidisciplinary researchers, in four landscape sites in Senegal and Burkina Faso, engaged in different IP constellations. Ramses II is an action research program, and therefore has both research and developmental objectives.

This study builds on the experiences of the Convergence of Sciences – Strengthening Innovation Systems (CoS-SIS) program, which examined the role of Concertation and Innovation Platforms (CIG, in French *Groupe de Concertation et Innovation*) in value chain development in Benin, Ghana and Mali (Klerkx et al., 2013; Van Paassen et al., 2013; Hounkonnou

et al., 2016; Jiggins et al., 2016). CoS-SIS was designed with action oriented platforms at the local level, focusing on local issues, and policy oriented platforms at the national level, addressing structural constraints through policy reform (Hounkonnou et al., 2016). The CoS-SIS experience with multi-actor platforms showed that “researchers can be effective facilitators of national level platforms, given the respect they garner among high-ranking stakeholders and policy-makers as informed intermediaries” (Hounkonnou et al., 2016; see also Jiggins et al., 2016).

In addition to researchers, “NGO personnel or hired consultants may be perceived as unbiased agents and entrusted with platform coordination” (Cullen et al., 2014). However, Van Paassen et al. (2013) analyzing CoS-SIS results, argue that “capable and committed local stakeholders are better positioned than scientists and other external actors to mediate district level processes because of their contextual knowledge and rapport with communities”. Another CoS-SIS finding was that “champions” who “were connected to higher-scale policy or research centres were better able to catalyse institutional change, such as favourable policies and price harmonisation” (Klerkx et al., 2013). So not only scientist can act as facilitator, but also capable and committed other stakeholders. These insights are critical for the design of leadership configurations in IPs (*ibid.*).

IPs have been defined in many ways. Sanyang et al. (2016) posit that “these have in common that the stakeholders in a particular value chain, food system, natural resource or other arena or domain act synergistically to foster innovation through enhanced interaction”. Depending on the composition of the platform and the level of aggregation at which it operates, the “outcomes of platforms can include not only technological change at the farm level but also institutional change at higher levels” (*ibid.*). In effective IPs the platform actors regard innovation as “a systemic and dynamic institutional and social learning process”, and recognize that “innovation can emerge from many sources, complex interactions, and knowledge flows” (see for instance Klerkx et al., 2013 and Sanyang et al.,

2016). The IP literature review showed that in effective IPs actors came together to diagnose constraints and opportunities and decided together on actions to overcome challenges and bottlenecks (see for instance Jiggins et al., 2016; Lamers et al., 2017; and Totin et al., 2018). These experiences show that technical (*e.g.* at the farm level) and institutional changes (also at higher levels) should go together.

Another meta study on innovation platforms initiated by researchers was the JOLISAA program (JOint Learning in Innovation Systems in African Agriculture; Triomphe et al., 2013). The evaluation made by the JOLISAA network confirms “*the diversity of stakeholders involved in innovation, the variety of innovation triggers and drivers, and the frequent occurrence of market-driven innovations*” (*ibid.*). JOLISAA also illustrated original features of IPs compared to other platforms, such as the typically long timeframes of innovation processes; the common occurrence of “innovation bundles” or packages of various innovations; and an often tight yet ambivalent relationship between innovation initiatives and externally funded projects (*ibid.*). Triomphe et al. (2013) observed that national teams faced several challenges during the inventory process, for example, in “*gaining a common understanding and making consistent use of key innovation-related concepts, and in accessing relevant information*”. Van den Berg et al. (2014), based on the JOLISAA results, concluded that “*integrated multistakeholder approaches that combine participatory research activities with reflective learning and capacity building for all research participants are highly desirable but not easy to implement*”. They require longer periods to develop effective partnerships.

Stakeholders in agroforestry projects “*need to come together to find solutions to structural problems including how knowledge and technologies are created and exchanged, practices adopted and agroforestry landscapes governed, and come up with ways of capitalizing on opportunities*” (Zinngrebe et al., 2020). Typically, potential IP members may include agricultural producers, (agroforestry) researchers, agricultural value chain entrepreneurs, NGO and other civil society representatives, service providers like extensionist, or policymakers (Triomphe et al., 2013; Van den Berg et al., 2014; Totin et al., 2018). Innovation might start as a result of interaction amongst diverse stakeholders as listed above.

1.1. Project description

In agroforestry parklands in West Africa there is a diversity of actors with often

antagonistic interests (Seghieri et al., 2020). Four of the most common agroforestry parklands in West Africa (see <https://www.ramsesiiagroforesterie.com/>) include in Senegal, two main parklands: (i) Sahelian shrub parkland with *Guiera senegalensis* with millet and (ii) nitrogen-fixing *Faidherbia albida* tree associated with millet and groundnut crops; in Burkina Faso: (iii) nitrogen-fixing *Piliostigma* sp. shrub parkland with *Sorghum* sp. and (iv) a tree of high economic value, *Vitellaria paradoxa* (*karité* or shea), which provides income for local communities with strong gender and international trade aspects. The LEAP-Agri project “Roles of Agroforestry in sustainable intensification of small farMs and food SEcurity for SocIeties in West Africa” (RAMSES II) project sites are located along four “regional” transects areas (see <https://library.wur.nl/WebQuery/leap4fnssa-projects/partnership/37>).

1.2. Position of the two Senegalese innovation platforms

In Senegal, researchers from the Senegalese Institute of Agricultural Research (*ISRA* in French) started in 2019 to engage with the communities of Ngayohème and Niakhar for one IP and in the Touba Toul municipality, Thienaba village in a second IP (see **figure 1**). After a participatory analysis phase and the engagement of researchers with potentially interested actors, IPs were established early 2021 and became active. An overview of IP activities in Senegal is provided in **table 1**.

1.3. Position of the Burkinabe innovation platforms

In Burkina Faso the RAMSES II project responded to the need for intensification of agroforestry parks dominated by shea trees (*Vitellaria paradoxa*). A reflection on the potential to create an IP was conducted by INERA, the Institute for the Environment and Agricultural Research of the National Centre for Scientific and Technology Research (in French, *Institut de l'Environnement et de*



Figure 1. Position of the two Senegalese innovation platforms — *Position des deux plateformes d'innovation sénégalaises.*

Table 1. Overview IP activities in Senegal, 2019-2022 — *Aperçu des activités PdI au Sénégal, 2019-2022.*

Activities	IP Ngayohème/ Niakhar	IP Touba Toul/ Thienaba
Analysis of the climate change vulnerability of communities and ecosystems	December 2019	January 2020
Identification of key actors and interaction on agroforestry issues	During 2020	
Establishment of village committees responsible for representing farmers in meetings and the organization, implementation and monitoring & evaluation of activities at village level	March 2021	March 2021
Establishment of a platform for exchanges on prototypes of innovative systems for the intensification of agroforestry parks and participatory planning of the activities of the platform	May 2021	June 2021
Workshop for sharing research results and participatory planning of intensification and sustainability actions and practices	December 2021	December 2021
Joint workshop to prepare handing over and learn from IP experiences	January 2022	
Capacity building of the communities of Touba Toul and Niakhar in terms of intensification and governance of agroforestry parks through farmer exchange visits	March 2022	March 2022
Establishment of park intensification demonstration plot with a resilient technological package	June 2022	June 2022

Recherches Agricoles du Centre National de Recherche Scientifique et Technologique), in the municipalities of Koumbia, Dano and Guéguéré. The potentially interested actors who were in favor of collaborating on agroforestry innovations were invited and facilitated by the researchers. The Burkina Faso cases describe how different institutional actors were mobilised to co-design a sustainable intensification of agroforestry parks based on mixed cropping with shea trees, starting with a joint analysis, followed by identifying a long term vision in which agroforestry practices allow for an ecological and socio-economic stable system, and how research results can be part of the change trajectory. **Table 2** gives an overview of IP activities in Burkina Faso and **figure 2** their position in Burkina Faso.

2. METHOD

As discussed in the introduction and based on the literature overview, we see innovation as a dynamic and social process that combines technical, institutional and organizational change. These interactions and concerted action do not just happen; they require facilitation. Therefore, the main objective of this article is to understand how the facilitation process of IPs can become more effective. This objective is illustrated by two specific objectives: study RAMSES II IP cases in Senegal and Burkina Faso where we observed and reflect on the facilitation of agroforestry IPs. A final objective is to position the case results in a literature overview of IP experiences in Africa.

The method used for this study was mainly qualitative, as is common within the overall field of

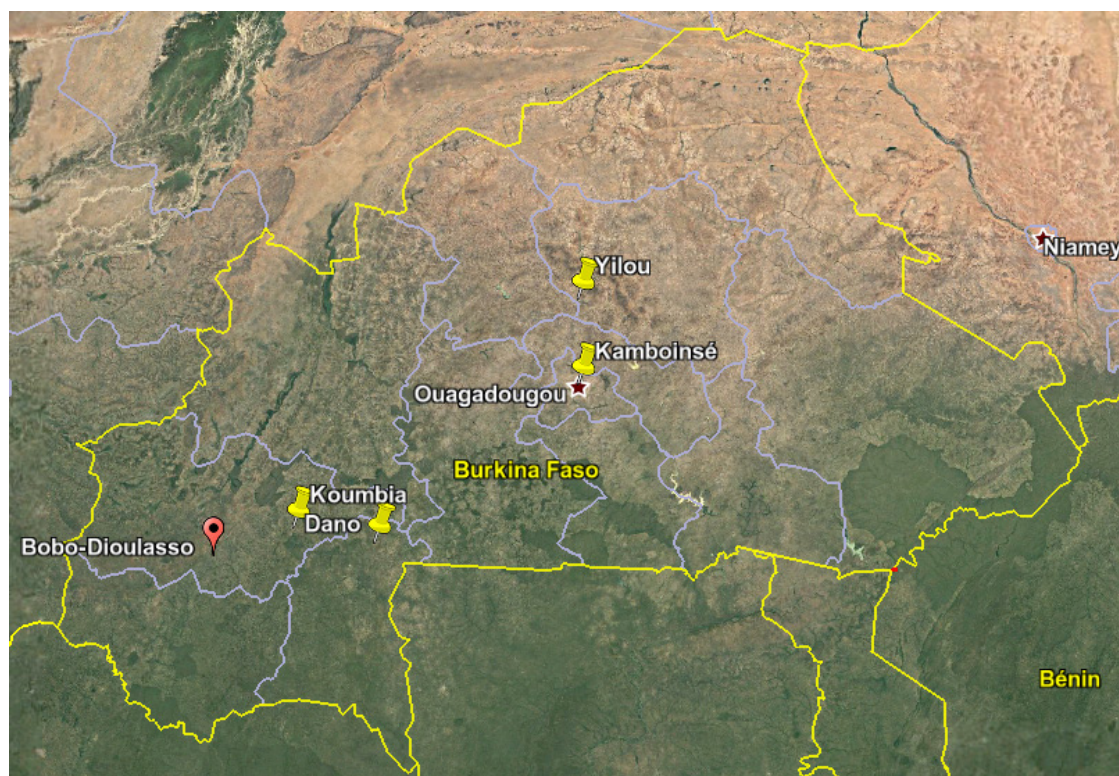
IP research methodologies. Information on IPs was collected by combining two complementary methods: analysis of RAMSES II agroforestry IP case materials and an IP literature review. For the IP literature study we selected meta studies, which provided recent analysis of IP cases in various domains (agriculture, fisheries, livestock), continents (Latin America, Africa and Asia including experiences in Hispanic, Anglophone and Francophone countries) as well as research design (CoS-SIS, CGIAR, JOLISAA).

RAMSES II materials included project reports for all sites in Senegal and Burkina Faso on the design and facilitation of IP meetings, minutes of IP meetings, and reports of stakeholder mappings. The literature review included the IP experiences in Burkina Faso (Fayama et al., 2023) combined with a desk study of similar experiences in West Africa, especially the experiences of CoS-SIS (Klerkx et al., 2013; Van Paassen et al., 2013; Hounkonnou et al., 2016; Jiggins et al., 2016), the West Africa IP overview study of Nederlof & Pyburn (2012), the JOLISAA overview study by Triomphe et al. (2016), the CGIAR overview study by Sanyang et al. (2016), and experiences of scaling research results through IPs (Sartas et al., 2020; Seghieri et al., 2020).

Limits of this study: only two sites from Senegal and three from Burkina Faso were included in this study, which make the findings provisional, given the small size and non-random nature of the sample and short time span the district platforms have been in existence. However, they do support the hypothesis that researchers taking a facilitating role exercise agency and need to carefully factor in the institutional diversity of their case. Another limitation is the fact that gender data was limited to verifying male-female

Table 2. Overview of IP activities in Burkina Faso, 2021-2022 — *Aperçu des activités PdI au Burkina Faso, 2019-2022.*

Event	Bobo-Dioulasso	Dano		Guéguéré	Koumbia		
	Bobo	Dano	Lofing		Béna	Djuié	Gombélédougou Koumbia
Actor mapping workshop with intro IP model			July 2021	July 2021	July 2021	July 2021	July 2021
Identification of visions and expectations	August 2021	August 2021	February 2022	February 2022		February 2022	February 2022
Installation IP steering committee		February 2022					February 2022
Support for the development of IP action plans		March 2022					March 2022
Training and coaching of IP steering committees		March 2022					March 2022

**Figure 2.** Position of the Burkinabe innovation platform — *Position de la plateforme d'innovation burkinabé.*

participation during IP meetings, without a gender analysis.

3. RESULTS

Results are presented according to the role of researchers especially at the start-up, creation of a

common understanding, IP membership composition, and the emergent task division between IP members.

3.1. Role of researchers

The RAMSES II researchers followed common practices, often documented in the IP literature (see

overview studies mentioned above on CoS-SIS, JOLISAA and CGIAR experiences), by realizing the importance of building motivation and managing expectations at the start-up of an IP. A key first task for researchers facilitating the IPs was to generate a sense of momentum and urgency. They did this in a variety of ways as shown below.

In Senegal ISRA, with its partners from the national extension service (*Agence Nationale de Conseil Agricole et Rural* – ANCAR) and the Water & Forest Ministry, carried out information exchange meetings on the project, paid visits to administrative and technical authorities, and conducted participatory diagnosis and analysis of vulnerabilities in the current agroforestry system. Meetings were held in the villages of Sob, Pouday (municipality of Ngayohème), Diohine (municipality of Diaréhe) in the site of Niakhar and the villages of Sothiane, Thilleu Ounté and Thilleu Boubou (municipality of Touba Toul) in the site of Thiès (see **figure 1**). These meetings made it possible in the two sites to discuss the objectives of the project and the need to bring together all the key agroforestry stakeholders in one consultation platform that allows for sharing ideas and joint decision-making for the renewal of the agroforestry parks.

In Burkina Faso this task was carried out by the research team through a series of workshops organized in the villages of Béna, Djuié and Gombélédougou (Commune of Koumbia), Guéguéré (Commune of Guéguéré) and Lofing (Commune of Dano; see **figure 2**). These workshops engaged mainly farmers and local leaders and made it possible to collect their perceptions, expectations and motivations to engage in an IP around the intensification of agroforestry parks. The workshops were accompanied by consultation meetings between the research team and shea transformation and marketing actors, the municipal services, and the public government services of Agriculture, Environment and Livestock.

3.2. Create a common understanding

The literature also stressed that it is important to create a common understanding about the agroforestry system and the need to innovate (see for instance Nederlof & Pyburn, 2012; Zinngrebe et al., 2020). The role of researchers to help create such a common understanding turned out to be key, as illustrated below.

In Senegal multi-actor innovation platforms were installed, and researchers facilitated the participatory diagnosis and vulnerability analysis in focus groups. These were organized in the villages presented in **table 1**. Meetings for information and discussion on the project and the current state of the agroforestry systems were held in Niakhar and Thiès. The meeting in Niakhar welcomed 72 producers (34 men and 38

women), with one agricultural extension technician, one Water and Forest technician and five municipal councilors. The meeting in Thiès welcomed 46 farmers (24 men and 22 women), a Water and Forest technician and two municipal councilors. In both events there were different men and women focus groups to collect gender differences. A total of nine focus group meetings were held on topics related to ecosystem vulnerability and social-economic problems. Climate change and the urgency to innovate the current agroforestry system to adapt to climate change was a priority for both IPs. Also, an inventory was made of the resources available in the area combined with an overview how they are currently affected by climate change. Being aware of the impact of climatic change on their livelihood resources, farmers have developed a number of strategies like more mixed cropping with trees and applying drought resistant varieties. A participatory analysis showed that the strategies developed by men are often different from those adopted by women, due to divergent concerns and interests. The training to strengthen the capacities of communities to adapt to climate change was based on information from the participatory analysis of vulnerability and adaptation strategies, a common vision for the future, prioritization of actions, and the identification of new partnerships. The ten year vision clearly illustrated the need to protect the trees in the area and the need to extend the role of trees and shrubs in the area. To achieve this vision, the main activities identified were setting up windbreaks and live hedges to protect crops from strong winds, the practice of farmer natural regeneration with local tree species, and reforestation.

In Burkina Faso, to create a common IP vision of the envisaged agroforestry system, the research team facilitated participatory diagnostic sessions with the IP members in order to identify together the diversity of existing trees and their uses, constraints and opportunities in the area, evaluate former agroforestry interventions, and understand the need to find a sustainable agroforestry system that resolves the current problems. In this way the IP enabled a joint construction of scenarios for sustainable intensification of agroforestry parks, based on the considerations and needs of all IP members. As an example, exchanges with the farmers of the village of Béna showed their engagement in the planting and the maintenance of trees to intensify the agroforestry parks.

Despite these positive efforts, there were challenges faced in Burkina Faso, such as problems of water shortages when watering tree nurseries, especially in the dry season, the need to create fences to protect plants against roaming animals, as well as the absence of warehouses to store produce. Not all communities possessed or have been provided with materials and storage capacity, hence the difficulty in carrying out

activities needed for agroforestry intensification. Likewise, in Burkina Faso interviews in Guéguéré indicated that actors had received training in tree nursery production techniques, but had not yet had the opportunity to plant seedlings due to lack of access to land. They also mentioned the lack of support from technical and financial partners, the lack of materials for the production and maintenance of plants as well as the lack of fences to protect trees against stray animals. They recognized that tree and vegetation cover has greatly deteriorated in recent years and there is a real shortage of firewood. Villagers hoped that through the intensification of agroforestry parks, they will be able to improve their living conditions thanks to the training received as well as the production and processing of forest products from their agroforestry parks.

For the IP members coming from technical support providers in Burkina Faso, various meetings with the local government and technical services in Koumbia resulted in their approval to set up and join IPs. Although some already had a general idea of what an IP entails, others were discovering the IP concept for the first time. All expressed their willingness to accompany the researchers and other IP members as long as it allowed the development of the area in the field of agriculture, livestock and the intensification of shea parks. The same holds for commercial and processing partners who confirmed their commitment to support the IP in the various municipalities in order to identify better strategies for the production of raw materials and to offer farmers the opportunity to promote local products.

3.3. IP composition

In Senegal the methodological approach for setting up an IP made it possible to see the importance of community participation in decision-making bodies. The approach was based on the involvement of members, ranging from the establishment of a body representing the population, to one bringing together all the stakeholders. In the Senegal sites farmers came together for the first time to set up an inter-village committee, with other members like researchers and extension agents. The IP included a president, vice-president, secretary general with his/her deputy, a treasurer and his/her deputies, the facilitator and the technical members coming from the veterinary office, forest & water office, environmental officer, local agricultural officer, local municipality members, and the researchers.

As for Burkina Faso, taking into account the institutional context, the constraints and the development priorities of the agroforestry system of each village, a communal committee responsible

for steering the IP was set up in each commune. The composition of the IPs is the same in Senegal but also included members in charge of communication. This committee interacts with committees set up in neighboring villages and serves as an interface with the population. For the viability of the IPs, the decisions taken at the municipal level in the multi-stakeholder platforms are relayed to the village level through the offices set up in each village. All chairs of the IPs are village representatives, with the chair of Guéguéré-Dano also being the *chef du village*.

3.4. IP task division amongst members

In Senegal, the platform facilitation and coordination is done by the extension worker in Niakhar and by the representative of the livestock service in Touba Toul. These facilitators are responsible for facilitating the implementation of the IP action plan. IP coordinators coordinate the implementation of activities, convene IP meetings and ensure that activities run smoothly. Local communities, which are represented by their mandated IP members, are especially active with land-related issues. They make for instance joint decisions to leave an area fallow after two years of cultivation. The representatives of the technical services play the role of technical capacity building and provide technical supervision. In Senegal researchers are regular IP members and contributed by sharing research findings and capacity building. In this way all members of the IP co-construct technical and social economic innovations.

In Burkina Faso, with regard to the IP positions offered, the IP chairs, selected from the village farmers, are responsible for preparing and leading the meetings. The secretaries are responsible for taking notes and writing minutes and reports. These executive bodies are supported by three commissions responsible for the mobilization and management of funding, research and training, and communication and information. Like in Senegal, also in Burkina Faso researchers mainly assisted in the start-up and facilitation of IP meetings, and later took the roles of information and training providers.

4. DISCUSSION

In Senegal the platforms are becoming autonomous and consider to merge with other platforms in the region. IP members came from a range of backgrounds including community representatives, technical services, local government, private sector, local NGOs and researchers. Researchers initiated the platform at the start and became regular members with others taking over the coordination and facilitation roles. Also

other development priorities next to agroforestry were discussed in the IPs and included in the action plan. In Senegal cross-IP peer learning visits greatly enhanced learning and sharing of best practices.

The results show that in Burkina Faso a co-construction of scenarios for sustainable intensification of agroforestry parks was seen as necessary, based on the considerations and needs of all IP members. Platform design and initiating was done in a participatory and consensual manner. The longer running Burkina Faso IPs show that it is possible to identify engaged representatives from different types of actors and facilitate their interrelations to guarantee the sustainability of new agroforestry practices.

In conclusion it can be confirmed, as demonstrated in literature (Nederlof & Pyburn, 2012; Klerkx et al., 2013; Van Paassen et al., 2013; Hounkonnou et al., 2016; Jiggins et al., 2016; Sanyang et al., 2016; Triomphe et al., 2016; Fayama et al., 2023), that the facilitation process of IPs becomes more effective through active communication between researchers and representatives from local institutions. In the Senegalese and Burkina Faso IPs it proved crucial to mobilize knowledge from all members, knowledge that was seen by IP members as salient and legitimate. Linking knowledge and emergent insights to action required open communication between researchers and other IP members. It also required that IP members understood each other's needs and perspectives. Mutual understanding between researchers and other actors is often hindered by jargon, prior experiences, and presumptions, as observed by various IP researchers (Nederlof & Pyburn, 2012; Sanyang et al., 2016; Totin et al., 2018). Therefore, to be effective, as indicated by van Paassen et al., "*researchers engaged in collaborative action-oriented research have to analyse the situation and embed their research in the ongoing change process, apply a multi-dimensional, flexible research approach, and wisely use theoretical frameworks and research roles, to be able to deal with emerging new issues*" (Van Paassen et al., 2011 & 2013).

It was essential to have IP members who have the authority and credibility from their own organization to take decisions on behalf of their constituencies. Another observation is that it is essential to allow IP members to consult with their constituencies, an often observed default which makes IPs underperforming (see also Nederlof & Pyburn, 2012). A positive element noted in the IPs was the openness for opportunities and respond to them, for instance in Senegal the idea to merge with other IPs in the area.

A key role taken by researchers was to help to identify the IP capacity strengthening agenda. Early 2022, for instance, the two Senegalese IPs met, exchanged experiences, and also identified the capacities that they

need to assure the platforms will continue after the project ends. Both of them identified the formalization of their platform as a key requirement. It also helped them to think through how the IP eventually will evolve into a more permanent structure for governing the concerned area, linking with other formal governance structures.

Other recommendations based on our experiences are the following. Firstly, do not consider that only scientists should act as facilitator, but also consider capable and committed local stakeholders and 'champions'. Secondly, technical (e.g. at farm level) and institutional changes (also at higher levels) should go together. For instance in Burkina Faso, the IP can link farmers with a bank to obtain credit to build a ware house for storage of plant materials. Thirdly, in view of the ambivalent relation between IPs and external funding and the long-term character of IPs it is important to create co-funding and co-organizing arrangements as of the start. Fourthly, IP functioning is strengthened by the identification of working principles how the IP likes to operate (frequency of meetings, chairing and facilitation, communication, etc.). Finally, we recommend to conduct further research on IPs and their functioning especially on preparing IP members to take over facilitation, funding and organization of their IP. This can be also conducted as a meta evaluation studying former IP projects.

This study provided insights how agroforestry researchers can make IPs more effective through institutional embedding. Through IPs communities have access to technical agents, local authorities and researchers. The platform can also connect communities to other IPs and other development projects. Addressing agroforestry issues together was helpful to validate IP membership through relevant representatives from different institutions (government for legal issues; private sector for obtaining materials like quality seeds, banks for accessing credit, NGOs to help in capacity development, etc.). This aligns with the findings of Lamers et al. (2017) and Osei-Amponsah et al. (2017) who also made a plea that when designing IPs it is important to think function oriented about compositional dynamics in innovation processes, rather than striving for equal stakeholder participation.

At the same time it should be mentioned that "*the IP approach is not a universal recipe for success*", as stated by Totin et al. (2018). Still, as observed by Sartas et al., the present study confirms that "*the connection between IPs' agenda and their institutional context enables effective scaling, when allowing flexibility to accommodate specificity of each IP*" (Sartas et al., 2020; see also Totin et al., 2020). In Senegal, for instance, we observed that scaling can be effective when it is considered as an integrated part of the

IP's agenda and scaling partners are also member of the platform (Seghieri et al., 2020). Scaling partners in education, for instance, are partners that will be associated to understand research results and translate these, with assistance from the project team, into new agroforestry modules. These will enable students to be educated with new agroforestry competences for sustainable management of parklands. Another scaling partner associated early on the project period were the local and national government authorities responsible for the formulation of (national) and application of (local) updated agroforestry policies that take into account new findings from research.

5. CONCLUSIONS

The institutional identity of facilitating research agents and their relationship to members of the platform requires an open and process oriented role, that over time could, and arguably should be taken up by other members of the platform to ensure continuity and legitimacy. This will enhance the platform's ability to ground the platform's agenda into local needs and priorities and within relevant institutions and networks and achieve its goals. It also enhances sustainability, as active membership during the project period prepares platform members to continue after the closure of the project. Active membership should be combined during the project period with co-funding and co-organization arrangements.

Acknowledgements

The authors thank the IP actors in Niakhar and Touba Toul (Senegal) as well as in Koumbia, Dano and Guéguéré (Burkina Faso) for their engagement in their respective IPs. This work was supported by the *EU Eranet LEAP Agri-215 project Roles of Agroforestry in sustainable intensification of small farMs and food SEcurity for SocIeties in West Africa (RAMSES II)*, <https://www.ramsesiagroforesterie.com/>

Bibliography

- Cullen B. et al., 2014. An analysis of power dynamics within innovation platforms for natural resource management. *Innovation Dev.*, **4**(2), 259-275, doi.org/10.1080/2157930X.2014.921274
- Fayama et al., 2023. Caractérisation des acteurs de l'agroforesterie pour une co-conception de plateformes d'innovations suivant le transect Koumbia Guéguéré Dano au Burkina Faso. *Biotechnol. Agron. Soc. Environ.*, **27**(3), Colloque Agroforesterie en Afrique de l'Ouest, 215-225, doi.org/10.25518/1780-4507.20407
- Hounkonnou D. et al., 2016. Triggering regime change: a comparative analysis of the performance of innovation platforms that attempted to change the institutional context for nine agricultural domains in West Africa. *Agric. Syst.*, **165**, 296-309, doi.org/10.1016/j.agry.2016.08.009
- Jiggins J., Hounkonnou D., Sakyi-Dawson O. & Van Huis A., 2016. Innovation platforms and projects to support smallholder development - Experiences from Sub-Saharan Africa. *Cah. Agric.*, **25**(6), 64002, doi.org/10.1051/cagri/2016051
- Kilelu C., Klerkx L. & Leeuwis L., 2013. Unravelling the role of innovation platforms in supporting co-evolution of innovation: contributions and tensions in a smallholder dairy development programme. *Agric. Syst.*, **118**, 65-77, doi.org/10.1016/j.agry.2013.03.003
- Klerkx L. et al., 2013. Looking at agricultural innovation platforms through an innovation champion lens: an analysis of three cases in West Africa. *Outlook Agric.*, **42**, 185-192, doi.org/10.5367/oa.2013.0137
- Lamers D., Schut M., Klerkx L. & Van Asten P., 2017. Compositional dynamics of multilevel innovation platforms in agricultural research for development. *Sci. Public Policy*, 1-14, doi.org/10.1093/scipol/scx009
- Nederlof E.S. & Pyburn R. (eds), 2012. *One finger cannot lift a rock: facilitating innovation platforms to trigger institutional change in West Africa*. Amsterdam, The Netherlands: Royal Tropical Institute, https://www.kit.nl/wp-content/uploads/2018/08/1987_One-finger-web.pdf, (17/05/2023).
- Osei-Amponsah C., Klerkx L. & Van Paassen A., 2017. Diagnosing institutional logics in partnerships and how they evolve through institutional bricolage: insights from soybean and cassava value chains in Ghana. *NJAS - Wageningen J. Life Sci.*, **84**, 13-26, doi.org/10.1016/j.njas.2017.10.005
- Sanyang S. et al., 2016. A paradigm shift in African agricultural research for development: the role of innovation platforms. *Int. J. Agric. Sustainability*, **14**, 187-213, doi.org/10.1080/14735903.2015.1070065
- Sartas M. et al., 2020. Scaling readiness: science and practice of an approach to enhance impact of research for development. *Agric. Syst.*, **183**, 102874, doi.org/10.1016/j.agry.2020.102874
- Seghieri J. et al., 2020. Research and development challenges in scaling innovation: a case study of the LEAP-Agri RAMSES II project. *Agrofor. Syst.*, **95**, 1371-1382, doi.org/10.1007/s10457-020-00532-3
- Tenywa M. et al., 2011. Institutional innovations for building impact-oriented agricultural research, knowledge and development institutions. *J. Agric. Environ. Stud.*, **2**(1), 24-55.
- Thiele G. et al., 2011. Multi-stakeholder platforms for linking small farmers to value chains: evidence from the Andes. *Int. J. Agric. Sustainability*, **9**(3), 423-433, doi.org/10.1080/14735903.2011.589206
- Totin E. et al., 2018. How does institutional embeddedness shape innovation platforms? A diagnostic study of three

- districts in the Upper West Region of Ghana. *NJAS - Wageningen J. Life Sci.*, **84**(1), 27-40, doi.org/10.1016/j.njas.2017.07.002
- Totin E., van Mierlo B. & Klerkx L., 2020. Scaling practices within agricultural innovation platforms: between pushing and pulling. *Agric. Syst.*, **179**, 102764, doi.org/10.1016/j.agsy.2019.102764
- Triomphe B. et al., 2013. What does an inventory of recent innovation experiences tell us about agricultural innovation in Africa?, *J. Agric. Educ. Ext.*, **19**(3), 311-324, doi.org/10.1080/1389224X.2013.782181
- Triomphe B. et al., 2016. Making sense of innovation processes in African smallholder agriculture. In: Francis J., Mytelka L., van Huis A. & Röling N.G. *Innovation systems: towards effective strategies in support of smallholder farmers*. Wageningen, The Netherlands: CTA, 170-182.
- Van den Berg J. et al., 2014. Lessons learnt about collaborative research from the EU project JOLISAA (JOint Learning in Innovation Systems in African Agriculture). In: Triomphe B. et al. *Innovation in smallholder farming in Africa: recent advances and recommendations*. *Proceedings of the International Workshop on Agricultural Innovation Systems in Africa (AISA)*, 29-31 May 2013, Nairobi, Kenya. Montpellier, France: CIRAD, 183-187.
- Van Paassen A. et al., 2011. Conclusion: from knowledge for action to knowledge in action. In: Van Paassen A. et al. *Knowledge in action: the search for collaborative research for sustainable landscape development*. Mansholt publication series 11. Wageningen, The Netherlands: Wageningen Academic Publishers, 277-303.
- Van Paassen A. et al., 2013. Choice-making in facilitation of agricultural innovation platforms in different contexts in West Africa: experiences from Benin, Ghana and Mali. *Knowl. Manage. Dev. J.*, **9**, 79-94.
- Zinngrebe Y. et al., 2020. Agroforestry governance for operationalising the landscape approach: connecting conservation and farming actors. *Sustainability Sci.*, **15**(5), 1417-1434, doi.org/10.1007/s11625-020-00840-8

(22 ref.)