Script or improvisation? Institutional conditions and their local operation

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Abstract: In Benin a combination of governmental programmes effectively stimulated rice intensification by providing relevant institutional arrangements like subsidised seeds, credits and a market outlet. In this paper, we investigate the institutional character of the programmes, by unpacking the rules embedded in them as well as by showing how farmers mould, reject and change these rules or combine them with local rules; their practices of institutional *bricolage*. We show that the services provided by the programmes had great advantages for the rice farmers, but also an exclusive character. Because of local bricolage practices the programmes impacted not only rice production practices but also helped the rice farmers to deal with conflicts about inequitable land allocation and discriminatory participation in canal cleaning. These findings contribute to the discussion about the role of innovation platforms in the stimulation of institutional change and providing enabling conditions.

Keywords: Innovation platforms, institutional conditions, institutional bricolage, rice production, water management, practices

Introduction

Innovation platforms are expected to bring key-actors together to exchange knowledge and stimulate innovation of products and services and their adoption and diffusion (Consoli & Patrucco, 2008; Nederlof et al., 2011; Klerkx et al., 2013). The CoS-SIS (Convergence of Sciences – Strengthening Innovation Systems) programme implemented in three West African countries (Benin, Mali and Ghana) has facilitated the set-up of innovation platforms especially with the aim to reduce the institutional constraints that hinder small farmers taking advantage of technical opportunities to increase food production, because they lack the power to change these constraints on their own (Hounkonnou et al., 2012; Röling et al., 2012). By bringing together farmers with powerful actors from a value chain and letting them conduct so-called institutional experiments a conducive learning process may be stimulated. At some point these Concertation and Innovation Groups (CIGs) might transfer into a true innovation champion able to generate systemic change. Notwithstanding the general agreement in the literature that systemic change cannot be managed or steered, and if at all possible, needs an adaptive, flexible approach, the huge rise of multistakeholder and innovation platforms set up in practice shows optimism about the possibilities to stimulate change deliberately and effectively.

Processes of institutional and systemic change and the role of platforms therein need to be well understood for these platforms to be able to be effective. Institutional *bricolage* is a term developed by Cleaver and others to understand why many interventions with designed institutions have unintended effects, in the sense of unexpected outcomes or a failure to reach the aim of improving people's livelihood (Cleaver, 2002; De Koning & Cleaver, 2012). This critical perspective asserts that institutions cannot be designed in a vacuum given the multiplicity and ambiguity of the institutions guiding people's practices at a local level as well as their agency, their ability to mould institutions. A way to picture the idea of bricolage practices is as the performance of a

play. While a script exists with prescriptions of how to perform, every live performance will turn out to be different, depending on for instance the room in which the performers play and the interaction between the performers and their audience.

In this paper, we address rice production in inland valleys in Benin. In this domain, a combination of governmental programmes seems to have effectively addressed the major institutional barriers for more effective water management and rice production by providing subsidised seeds, credit and a market outlet. In an earlier paper, we have shown that farmer's practices have changed in response to these programmes and how that took place, at times in unexpected ways (Totin et al., submitted). The farmers were not passive recipients, but agents who actively and in diverse ways made use of the external conditions provided depending on local bio-physical and livelihood strategies. On the basis of this relatively successful case, we now turn to the challenge of shedding more light on the institutional character of the programmes, by disclosing the rules embedded in them as well as by showing the interaction with the local rules in the rice production areas. The aim is to contribute to the thinking about the possibilities and limitations of the role of innovation platforms in the stimulation of local institutional change.

Theoretical perspective

The emergence of innovation platforms is closely related to Innovation Systems thinking. In this school of thought it is acknowledged that innovation seldom results from a single actor's actions, but takes place in the interaction between a multitude of diverse actors, like suppliers, producers, users, and policy makers. A well-functioning innovation system is regarded as conducive to innovation and the resulting competitiveness and economic development or growth (Lundvall, 1992). Such systems may also enclose barriers to innovation. If so, specific barriers related to the knowledge of physical infrastructure, market structure, the strength of interaction in a network, regulations or values and norms may hinder innovation and development (Klein Woolthuis et al., 2005; Van Mierlo et al., 2010).

Intermediaries play an important role in coordination in a system (Callon et al., 1992). If such coordination does not occur spontaneously innovation platforms may help forge links between otherwise dispersed actors and their knowledge (Consoli & Patrucco, 2008). Most literature on platforms focus on the generation of new products and services or the adoption and diffusion of these, and therewith do not escape fully from linear innovation thinking, albeit advocating a decentralised approach. Some recent studies highlight institutional change, because it is an intrinsic feature of the co-evolutionary process of innovation (Hounkonnou et al., 2012; Kilelu et al., 2013). The international CoS-SIS programme is specifically designed to investigate and stimulate institutional change, because: "the nexus of smallholder practices and enabling or disabling institutions at the higher than farm level requires special effort to understand the complex, messy, multi-level situations and relational configurations in which actors with diverse interests interact" (Röling et al., 2012, p.3). In three West-African countries innovation platforms, called CIG's (Concerted Innovation Groups) were installed to challenge local institutional constraints and develop institutional conditions enabling a change of farmers' production practices. Interesting questions for the evaluation of the first experiences are and whether the effected higher-level institutional changes enable or constrain practice change and how they interact with local institutions and practices.

In her work, Cleaver provides interesting ideas to address such questions. With the term institutional *bricolage* she conceptualises the construction of mechanisms of collective action in natural resource management as a process in which people reconstruct institutions from multiple sources: from existing practices and norms, life histories, social identities and social relationships (Cleaver, 2002). This is an active and creative process of combining and adapting the existing rules,

norms and values to fit purposes in response to changing conditions; a process that reflects implicit, underlying values and principles (Cleaver & Franks, 2005). Through negotiations people construct institutional frameworks (or in Cleaver's words 'institutional arrangements') by moulding, adapting, articulating, excluding and combining elements of existing institutions. Three main bricolage practices of local actors are identified in their response to introduced institutions (De Koning & Cleaver, 2012). Aggregation refers to the recombination of the newly introduced institutions with local values, rules and other cultural elements like traditions, needs and experiences whereby the meaning of the introduced institution multiplies and the institutional arrangement itself becomes multi-purpose. Alteration of either the imposed or the local institutions often involves rule changes and improvisation. Articulation comprises maintaining local identities and culture to resist the new institutions in passive or active ways and may result in normative pluralism and selective adherence to the institutions. It often occurs when new rules are in direct conflict with local identities.

An important basic idea is that people should not be assigned productive identities solely. Social identities are fluid and mixed. People have multiple roles and affinities as farmer, father, mother, chief, et cetera (De Koning & Cleaver, 2012). Also institutions are fluid: multi-functional and contingent. Hence, the creation of new institutions is a messy process with varied outcomes in different contexts which explains why even the best external interventions fail in their endeavour to bring development. This view on institutional change is a critique of social engineering approaches, that design general institutions for effective natural resource management and collective action on the basis of the institutional design principles developed by Ostrom and many others (e.g. Ostrom, 1990). It also suggests to take on another perspective on the 'management' of natural resources, i.e. to facilitate processes of institutional bricolage, whereby the quality of the process is judged on whether it reproduces and increases social inequalities or creates space for challenging them (De Koning & Cleaver, 2012; Merrey & Cook, 2012). They stress the importance of studying the actual situation and the effects of earlier introduced institutional arrangements for the design of new interventions.

Research design

The study is based on research carried out in three areas (Koussin-Lélé, Bamè and Zonmon) in Benin where rice is produced in the complex context of inland valleys, providing uncertainty about the availability of water in the gravity system. Rice production was introduced in these three areas with the Chinese irrigation projects in 1976. However, soon after the Chinese left in 1978, to a varying degree, the areas under production declined, and farmers increasingly abandoned the schemes. At Koussin-Lélé, farmers resumed rice production slowly after 1984, and it became more prominent after the renovation of the irrigation scheme in 1989. In Bamè, rice production restarted in 2008, and in Zonmon in 2009.

Rice production used to be constrained by various institutions, such as dependence of the rice farmers on local traders, because they had no access to formal credit from the banks, partly neglected rules for canal maintenance, out-dated equipment and infrastructure, competition from imported rice, suppliers who provided input for cotton production rather than rice and a solidarity credit system that was only available to farmers' collectives with years of experience (Totin et al., 2012; Saïdou and Kossou, 2009). As a result the production was low and earnings were way below the minimum income.

Following the 2007 rice crisis, the government of Benin initiated diverse programmes to intensify rice production and ensure food security for low income households (MAEP, 2010). The introduction of three major governmental programmes significantly changed the situation in the areas studied. In all three areas total local rice production had increased. The major impact in terms of

practice change however, differed between the areas (Totin et al., submitted). These diverse outcomes suggest that bricolage practices did play a role, in addition to the diversity in the biophysical situation like the availability of vacant upland area; a cross-case comparison to study the interaction between externally imposed institutions and local institutions and practices was thus possible We first unpacked the rules embedded in the diverse government programmes and secondly analysed the research data for signs of bricolage practices, by comparing the local practices and rules before and after the interventions.

Our sources of information consisted of policy documents, focus group discussions, a survey and participant observation.

Externally defined institutional conditions

In this section, we present the rules embedded in the programmes and their effects of in- and excluding farmers with regard to the services 1) credit and subsidy for input and labour 2) market outlet and 3) irrigation infrastructure. For each service, we first describe the externally imposed and local rules guiding the farmers' practices before the interventions and then show to what extent the farmers benefited from the services provided and what other changes were hindered because of the programmes' rules of the programmes. For an overview see Table 1.

Table 1: Intervention programmes and farmers' participation

	Koussin-Lélé (200)*	Bamè (20)	Zonmon (48)
Agricultural reforms (1990)	Handover of the maintenance responsibility for irrigation infrastructure to farmers'		
	associations		
PUASA (Aug. 2008-July	100% of the rice farmers benefited from the prog ramme (prog)		
2012)			
PDAVV (June 2010-Oct	The prog. did not operate	45% of the farmers were	20% of the farmers were
2011)	at Koussin-Lélé	included in the prog.	included in the prog.
SONAPRA (Mar 2011)	100% of the farmers benefited from the prog.		
PDAC (Aug. 2012)	78% of the rice farmers	100% of the rice farmers	42% of the rice farmers
	were included in the prog.	were included in the prog.	were included in the
			prog.

^{*} Number of rice farmers by 2012.

Credit, subsidy and input

In 2010, at Koussin-Lélé and Bamè, 40% of the rice farmers obtained credit from the rural banks against a reasonable interest rate of 24% per year (Totin et al., 2012). These credits were used by the farmers to purchase fertilisers and to pay labourers. The bank credits were however restricted. The banks provided credit for established groups, in a solidarity system in which all the group members are held responsible for re-payment. Moreover, the credit was not given to newly established rice farmers. The banks financed only rice production, in line with the government policy to promote the local rice production and because rice is becoming a cash crop. Hence, about 80% of farmers who could not receive bank credit, or not enough to cover their needs (other food crops, funeral or school fees for children) turned to local lenders for money. The lenders provided the loan to farmers on an individual basis, against high annual interest rates of up to 150%. In Zonmon, the banks did not provide credit for the rice farmers, as they had neither experience in rice production nor any bank credit history. Except for one of them, all the farmers asked for a loan from the local traders.

The first large national programme introduced in the three areas in 2008 was PUASA (*Programme d'Urgence d'Appui à la Sécurité Alimentaire*) that supported the rehabilitation and the expansion of the irrigation schemes and offered seeds, and fertilisers to farmers against subsi-

dised prices (MAEP, 2010). The rice seeds PUASA provided were Beris 21, Tox long, Tox 447, IR-841, and Nerica. In this way, the programme targeted local rice intensification. These inputs were sold at a subsidised price for rice farmers only. For instance, the fertiliser was sold to the rice farmers at 200 f per kg instead of 300 f the market price at which it was provided for other food crops.

By targeting rice production only, the PUASA programme excluded other food crops in a context where farmers are not used to a mono-cropping system and all farmers, including the rice farmers produced many other food crops at the same time, mainly as a strategy to mitigate the effect of risks and uncertain effects of climate variability (e.g. pest damage). In addition, the programme required an expansion of the land for rice production.

In October 2010, PDAVV (Programme de Diversification Agricole par la Valorisation des Vallées) was initiated to enhance smallholder agricultural productivity and improve livelihoods within the rice chain by funding input and equipment for rice farmers (CARD, n.d.). Bamè and Zonmon were selected as pilot areas to experiment with the programme at a small scale. In August 2012, the PDAVV programme was replaced by PDAC (Projet de Développement Agricole des Communes) that facilitated access to agricultural financing for rice farmers, on an individual basis (CARD, n.d.). It was established that each farmer could receive the equivalent of €245 per ha of rice cultivated per year, including a credit of €90 for the fertiliser. The credit was provided to the rice farmers against an annual interest rate of 9%. One of the prerequisite conditions for accessing the PDAC credit was that the extension agents had to validate the land size that each farmer cultivated before the applicant could receive the credit.

PDAC interventions also targeted rice production and no other food crops. Moreover, the credit was offered to individual rice farmers, with at least two to three years of active rice cultivation experience. It was not provided to newly established producers. This seems to be the main reason that PDAC did not include all farmers from Koussin-Lélé, and Zonmon; 157 rice farmers from Koussin-Lélé and 21 from Zonmon were included in the programme.

Market outlet

In all three research areas, the farmers customarily milled their harvest in Koussin-Lélé with a machine provided by the Chinese government. They used on average 10% of the produce for their own consumption, sold almost 20% to other consumers and almost 70% to the local traders. The local traders, *dadjè* required the farmers' associations to have at least 2.5 tonnes of milled rice before they bought it from them in order to limit the transportation costs. Since the majority of farmers was not able to produce this amount individually, they agreed to sell their harvest in bulk (Totin et al., 2012). Moreover, the loans that the farmers had received from the *dadjè* to buy inputs and hire labour had to be paid back with the rice produced.

In 2011, the government developed two large-capacity milling industries under the auspices of the national company for crop promotion SONAPRA (*Société Nationale pour la Promotion Agricole*). By buying and milling the harvested paddy, SONAPRA offered the rice farmers a guaranteed market outlet. The programme partnered with PDAC to enable deduction of the loan from the price paid for the farmers' harvest.

SONAPRA became the main rice market outlet for the rice farmers; it represented 90% of the market for the farmers included in the survey. It offered a better price for the harvest than was paid earlier by the local traders. SONAPRA had a preference for IR-841 rice variety because of its taste and consumer preferences, but it was not formally required (MAEP, 2010). However, the SONAPRA staff decided to buy the IR-841 rice harvest first and only buy other rice varieties if they had money left or lacked the right amount to cover the capacity of the mills. Because of this preference IR-841 was widely sown and almost 9 out of 10 farmers adopted it.

Another effect of SONAPRA was that it inhibited individual selling. SONAPRA buys the paddy harvest in bulk from all the farmers of one area at the same time. The implication is that a single farmer who harvested early had to wait until the other farmers finished harvesting. At Koussin-Lélé and Zonmon, this requirement is not a critical issue because all the farmers grow and harvest at more or less the same period, but at Bamè farmers produce continuously depending on their individual agenda. In this context, farmers complained that they were disadvantaged without adequate storage facilities.

Infrastructure

Under the reform in the agricultural sector, the responsibilities for the maintenance of irrigation infrastructure, including the related operational costs, was transferred to farmers' associations (Minot et al., 2001). The most important maintenance activity in inland valleys is to keep the canals free from weeds and mud and replace the gates so that the water coming from the rivers can reach all plots.

At Koussin-Lélé, rules were established under the guidance of the extension agents and formally agreed upon by the farmers, in order to reduce yield losses and increase total production. All members of the farmers' association would collectively clean the primary canals at a set day, before the first and the second cropping seasons. According to the rules, farmers who did not clean would be punished and were not allowed to cultivate the plots in the irrigated area for two to three seasons. However, privileged and powerful farmers who did not participate such as landowners and chiefs or the family heads were not punished (Totin et al., 2012). In the *Mahi* culture, the traditional leaders (chiefs) have a central responsibility in the community. This lets them off the duty of collective maintenance according to the rules agreed. Not all association members considered this fair and some were frustrated about it. As we discuss below, the programmes for rice intensification contributed to a change of the local maintenance rules.

Bricolage practices: combining programmes' and local rules

The rules embedded in the programmes for rice intensification described above provided the farmers with important advantages, but they also had an exclusive character. In this section, we explore the bricolage practices of the rice farmers in response to the rules embedded in the services offered by the programmes. We investigate whether they were combined with the local rules (aggregation) or adapted so that either local or intervention rules were changed (alteration) or resisted or neglected (articulation). This is discussed with regard to food crop, rice variety, water maintenance and land allocation.

A first obvious rule embedded in the programmes is that they support rice production only, whereas the majority of the rice farmers in the three areas grew other food crops as well. At Zonmon, 27 farmers turned from growing vegetables and maize only to a combination with rice production. At the same time, more than 600 farmers from the same village kept on growing other crops only, such as maize, vegetable and groundnut, even without the services that existed for rice. At Koussin-Lélé and Bamè, the number of production cycles and hectares of land used for rice production increased, but the number of farmers engaged in rice production did not change since 2009. Informal discussions with the farmers indicated that some of them did not engage in rice production because it was too demanding. They specifically indicated that the bird chasing operation required a lot of energy and a permanent presence in the field for at least a month. Hence, non-rice farmers in these areas neglected the services provided, which can be seen as a form of passive articulation.

Moreover, in all three areas almost all rice farmers kept on growing other food crops to spread the risks related to floods, drought and uncertain effects of climate variability (field observations and

Abidji et al., 2012). And some of them also kept turning to local traders for credit even at high interest rates. According to the survey, about 28% of farmers in Koussin-Lélé, 12% in Bamè and almost 30% in Zonmon still engaged in a relationship with local traders for growing other crops. This seems to be a bricolage practice of aggregation, whereby farmers are able to produce according to their concerns and needs. It however also shows that PDAC did not end the dependence of the farmers on local traders.

Another condition of the programmes concerned the rice variety. As explained above, the programme PUASA provided many types of rice varieties including the ones the farmers used before the introduction of the programmes, while the SONAPRA staff preferred IR-841 rice. Within two years of the start of SONAPRA, almost all farmers who had grown other varieties before turned to the IR-841 rice variety. They did not resist this change because of the advantage of the market outlet offered by SONAPRA. It also stimulated the farmers from the three areas involved in a joint experiment with mulching in the uplands of Bamè, to experiment with this variety. This was against the advice of the extension agents who suggested the farmers use IR-841 only in the low-lands and the Nerica-4, a short duration and less water demanding rice variety promoted by the Africa Rice Centre, in upland areas. The joint evaluation of the experiment conducted together with the rice farmers from the three areas and an extension agent indicated that the farmers could indeed make better profit by producing IR-841 (Totin et al., 2013). It even stimulated the extension agents to revise their recommendation to use of IR-841 in the lowlands only.

Apart from these bricolage practices related to the rules embedded in introduced institutional arrangements there were more indirect responses. In both cases described below, the farmers were empowered by the programmes to challenge local rules that they considered unfair and negotiate better ones.

At Koussin-Lélé, the traditional norms according to which the chiefs have a central responsibility in the community contradicted the rules predefined for canal cleaning with the extension agents. These rules were based on the assumption that all the farmers are equal in the community. The farmers explained during the focus group discussions that, before the external interventions, they were vulnerable because of a low average return per farmer. The market guarantee of SONAPRA in combination with PUASA support of the maintenance of the irrigation infrastructure stimulated them to intensify rice production which increased their income. With this financial stability strengthening their power the non-privileged farmers dared to make their voices heard. They asked for the facilitation of the extension agents to solve the canal cleaning problems that hindered efficient water management and a fair water distribution among the farmers. The extension officers sensitised all the rice farmers through meetings to adopt better water management practices in order to avoid conflicts and to make use of the existing market, credit and input facilities. Over time, an agreement was reached among the farmers about new rules to clean the canals individually. Moreover, it was agreed that the persons who did not clean themselves would hire someone to do it for them. In October 2012, we observed that the farmers indeed cleaned individually.

In Bamè, the PDAVV programme stimulated the farmers to change the unfair land allocation rules that existed in the lowlands. Farmers explained that their leaders used to keep the more fertile and irrigated plots for themselves. The financial support offered by PDAVV stimulated some farmers – because they now had the financial room to use pumps – to move to the uplands. All farmers were allowed to cultivate as much as they could, because there was more than 50 ha of virgin land available in this part of the valley. They all cultivated about the same land size, an average of 1 ha per farmer. The first credits of the PDAVV programme and later the PDAC credit facility, and the guaranteed market offered by SONAPRA thus seem to have supported a shift from unfair land allocation rules to a more balanced and open land use regulation in the uplands.

Conclusion and discussion

From a bird's eye view the governmental programmes provided the necessary institutional conditions for an increase of rice production in the investigated areas in Benin. The programmes seem to have addressed the major institutional barriers for more effective water management and rice production with subsidised seeds and fertilisers, credit and a market outlet. They are similar to the type of institutional changes that Hounkonnou and others (2012) suggest should be an outcome of innovation platforms. These conditions stimulated the reshaping of farmers' ways of producing rice and managing water, and hence guided a change of social practices.

However, it seems important to move beyond the generic idea of institutional change as services creating opportunities or providing enabling conditions for farmers and to unveil the nature of these institutions and the way they operate in and influence farmers' practices. To this end, it is relevant to see each service as a set of interpretative, normative, and economic rules (Elzen et al., 2012). Many rules are involved in for instance the provision of credit; with regard to for whom it is available and for what kind of activities. Such rules are value-driven, as can be seen in the services' preference of rice production over other food production, while farmers prefer a combination.

The findings also show that while the governmental programmes were enabling in general from the perspective of total rice production, they all have constraining elements and therewith excluded other kinds of change, as is evident from the neglect of the value of other food crops for farmers, and the different ways via which the services tend to discourage individual production and selling, while most farmers would like to operate more independently. Via the embedded rules services thus tend to in- and exclude farmers, in addition to pure quantitative limits.

Moreover, as is shown in Totin and others (submitted) it was the accumulated effect of the combination of governmental programmes and their interaction with the actions and local rules of the farmers that helped the increase of rice production. It was not until the diverse governmental programmes merged together in the three areas that they started to have influence.

The main coordination mechanism seems to be the financial relationship between the programmes. The costs of the provided seeds and fertilizers (PUASA programme) were deducted from the price paid for the harvest via the SONAPRA programme. This system is similar to the earlier way to repay the local traders with in-kind produce and hence seems to be adapted to the financing system the farmers were used to. In addition, the extension agents played an important role in combining the services by informing the farmers beforehand about the new programmes and their rules for application (see also Klerkx et al., 2013). As an innovation broker they informed farmers about upcoming programmes and in this way linked them. They were also involved in linking the rules of these programmes that aim at rice intensification to rules with regard to maintenance of the canals. This leads us to the conclusion that the so-called institutional arrangements, like credit and a market and their influence on practices should be understood in more detail as well as in their combination with other arrangements.

The farmers of the three areas evidently practiced bricolage. In general, embedded rules were easily aggregated with local rules and practices. However, they were also ignored by farmers who did not turn to rice production and effectively challenged in the case of the preferred rice variety. The programmes even allowed the rice farmers to deal with conflicts about inequitable land allocation and discriminatory participation in canal cleaning. Hence, they seem to have empowered the rice farmers in their relations with the privileged farmers as well as the extension agents. This might however also have influenced other relations negatively, for instance those between rice farmers and other farmers or family relations.

What do the conclusions mean for innovation platforms? First of all, it can be doubted whether the participation of 'local actors' like farmers in a platform can compensate for the bricolage practices at the local level, in each area. People acting as an intermediary between a platform and those who are supposed to benefit from institutional change in all the different areas, may help to identify active local bricoleurs and to stimulate the creative process of merging, bending and moulding rules.

Secondly, it is to be expected that the platforms themselves are the forums of bricolage practices. Actors who did not cooperate before on a daily basis are brought together. All the participants bring in their own rules, values and norms, identities and complicated relationship with their constituencies, families and others. Whereas farmers should not be assigned pure productive identities, in a similar vein the platform members should not be seen as interventionists, managers or intermediaries only. The institutional experiments they work on do not start from scratch. In that sense, at the above-local level of the platforms, change will just as well be the result of a dynamic process involving both path dependency and improvisation. A question that arises from this assumption is where the institutional bricolage will take place: in the formally organised setting of the innovation platform or rather in a wider arena (Cleaver, 2002).

A related issue is whether innovation platforms will be able to stimulate institutional bricolage and to provide the continuity for long term changes without losing the adaptive capacity that is needed to escape path dependency. Obviously, the distinction between introduced and local institutions will be less clear-cut in the case of well-functioning platforms than in our case study of governmental intervention programmes. A first study on the impact of innovation platforms concludes unexpectedly that the platforms studied were only effective in stimulating innovations in production, which is not context-specific and minimally effective in context-specific innovations in water and soil fertility management among others (Pamuk et al., 2013). Hence, it could well be that platforms operate better if they take the form of a dynamic and distributed network rather than a centrally organized one (Kilelu et al., 2013). In this way, innovation platforms may be able op trigger learning over long time periods and leave sufficient room for active distributed bricolage practices.

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