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Action research on alternative land tenure arrangements in Wenchi, Ghana: learning from ambiguous social dynamics and self-organized institutional innovation

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Abstract This study reports on action research efforts that were aimed at developing institutional arrangements beneficial for soil fertility improvement. Three stages of action research are described and analyzed. We initially began by bringing stakeholders together in a platform to engage in a collaborative design of new arrangements. However, this effort was stymied mainly because conditions conducive for learning and negotiation were lacking. We then proceeded to support experimentation with alternative arrangements initiated by individual landowners and migrant farmers. The implementation of these arrangements too ran into difficulties due to intra-family dynamics and ambiguities regarding land tenure. Further investigations to find out how ambiguities could be tackled revealed that the local actors themselves had taken initiatives towards developing institutional innovations to reduce ambiguities. However, there is still considerable scope for further development of these self-organized innovations. The article ends with a reflection on inter-disciplinary action research, where it is argued that making "mistakes" is an inherent and necessary characteristic in action research that aims to address complex social issues.

Keywords Action research · Ghana · Land tenure · Sharecropping · Soil fertility management

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Introduction

In a developing economy such as Ghana, access to land and natural resources is important for improving the livelihoods of poorer groups. Farmers' livelihood decisions with respect to cropping strategies and labor input are strongly influenced by land tenure arrangements (DFID 2000). Several authors (Gavian and Ehui 1999; Gavian and Fafchamps 1996; Fraser 2004) argue that contractual arrangements such as land renting and sharecropping reduce incentives to invest in soil fertility management due to tenure insecurity. Gavian and Fafchamps (1996) reported that tenure insecurity leads farmers to divert soil-enhancing resources to more secure fields whenever possible.

In an earlier study (Adjei-Nsiah et al. 2004), we also found an association between tenure insecurity among migrant farmers especially and limited attention for regeneration of soil fertility. We showed that in Wenchi only native farmers could own land and therefore have secure tenure. This allows them to use long-term rotational strategies such as rotations involving cassava and pigeonpea to improve their soils. On the other hand, migrants who settle in the communities to farm cannot own land and hence appear to depend mostly on short-term rental or sharecropping arrangements. This prevents them from using rotations involving long duration crops such as cassava and pigeonpea. Instead, they rely more on rotations with short duration crops such as cowpea and groundnut to

enhance soil fertility. At the same time, however, migrants tend to continuously crop the same piece of land to maize for two years in both the major and minor seasons in order to get the maximum from the land, thus mining the soil of nutrients. Due to this, the landowning natives often accuse the migrants of degrading their lands, which in turn makes them reluctant to rent land to migrants beyond two years. Migrants cite tenure insecurity and high cost of land rent as reasons for not investing in soil fertility regeneration. Thus, it appears that there is a widespread lack of trust between the migrants and the natives. Natives do not trust that when they rent land to migrants for a longer period, they will take good care of it. Migrants on the other hand are afraid that when they invest in soil fertility, they will not be allowed to reap the full benefit. As is elaborated further on, the social dynamics around land tenure and soil fertility are more complex than portrayed above since the relationships between different categories of migrants and the natives vary in meaningful ways (see also Adjei-Nsiah et al. 2007a). Nevertheless, it is clear that the current configuration has negative consequences for soil fertility and productivity in Wenchi.

These social complexities around land tenure and their associated problems are not unique to Wenchi and Ghana, but have been reported elsewhere in Africa as well (Lavigne Delville et al. 2001; Neef 2001; Le Meur 2002; Saïdou et al. 2005). Several studies provide evidence of a relationship between land and/or tenure security and soil fertility decline (Gavian and Ehui 1999; Gavian and Fafchamps 1996; Fraser 2004). In this context, access to land and security of tenure are seen as important means through which food security and sustainable development could be attained in Africa (ECA 2004). At the same time agricultural science has been criticized widely for contributing little to alleviating problems of small farmers in Africa, including the combating of soil fertility decline (Bie 2001; Brader 2002; Stoop 2002; IAC 2004). It has been argued that scientists often operate in an isolated, disciplinary, and un-engaged manner, which leads them to come up with solutions that are badly adapted to the social and agro-ecological conditions in which farmers operate (Chambers and Jiggins 1987; Stoop 2002). Another important aspect of such critiques is that scientists have tended to develop technical solutions mainly, while disregarding and/or failing to address social complexities such as those around land tenure. Inspired by such critiques, we choose to work with an inter-disciplinary research team and work in an action research mode. On the bases of the initial findings presented above, we concluded that our action research efforts should not remain only in the sphere of developing better technologies and management practices together with farmers. In order to deal with the social dilemmas and complexities around land tenure, we decided to work on the social realm as well, and engage in the joint design of institutions through negotiation of, and experimentation with, new kinds of contractual and/or land tenure arrangements (Adjei-Nsiah et al. 2004). This idea of working on institutional arrangements is in line with recent insights in innovation studies which suggest that social conditions needed for the uptake of technology should be regarded as an integral component of an innovation, and not as an "external" factor influencing adoption of innovations (as e.g., in Rogers 1983). Innovations are increasingly seen as consisting of a balanced whole of "hardware" (technology), "software" (human mindsets and modes of thinking), and "orgware" (new rules, market arrangements, forms of organization, etc.) (Smits 2002; Geels 2002). At the same time, the idea to work on institutional arrangements can be seen as relevant addition to well-known methodological strategies to making agricultural research more relevant to resource-poor farmers, most notably Farming Systems Research (FSR) (see Collinson 2000) and Participatory Technology Development (PTD) (see Van Veldhuizen et al. 1997). In both FSR and PTD the tendency has been to work on the design of new and/or more appropriate *technologies* rather than on social conditions (Leeuwis and Van Dan Ban 2004).

In all, this article reports on action research efforts aimed at developing "orgware" beneficial to soil fertility improvement. The focus hereby was on the design of more favorable land tenure arrangements among natives and migrants in Wenchi and on answering the question of what alternative tenure arrangements might ameliorate the tensions and social dilemma between migrants and natives. In the conclusion of the paper we draw lessons on action research that extend into the social realm, since generating insight on this novel approach was an additional scholarly objective of the study. In this research line, we discuss factors that led to the failure of the attempts that were made to negotiate and experiment with new/alternative forms of arrangements.

Land tenure in Ghana

As a background to the research, we highlight some relevant aspects and issues regarding land tenure in Ghana, whereby we move from more general characteristics to specific circumstances in our research area.

The continued dominance of customary institutions

In Ghana land is an index of political power in the country's ethnic communities (Addo-Fening 1987) and struggles over land are not just struggles over an economically valuable resource but rather constitute arenas of simultaneous struggle over wealth, power, and knowledge (Berry 2002).

Often conflicts over access to a particular tract of land are at the same time related to struggle over who has the authority to decide how the land is to be allocated and used and on what basis (Berry 2002).

Traditionally, control over access to and use of land in the country lies either in the lineage or the ruling families rather than individual families (Fred-Mensah 1999). Among the Akans, the chief is the custodian of the land while among the non-Akan people, land is administered by the lineage heads. Families have gained rights and use of land by their residence and political allegiance to the "stools" (literally the chairs that leaders sit on). Individuals, on the basis of their membership of family or a lineage group, also have usufruct rights over communal, family or lineage land. Marriage is another important institution through which in-married spouses gain secure access to land.

Despite the many attempts that have been made to integrate all forms of tenure into single statutory and common law framework since 1986, land tenure in Ghana is still largely regulated by customary institutions (Crook 2005). In Ghana, initial rights to land are generally established through clearing the bush and first occupation. The individual who first cleared the land and his descendants retain a pre-eminent right over it and can grant temporal or extended right to others. Migrant farmers and/or those who do not have sufficient access to land usually gain access to land through various forms of tenancy arrangements such as renting, sharecropping and *taungya* (a system whereby the forestry commission of Ghana gives land out to tenant farmers to grow their food crops while they plant and tend trees for the commission) (Amanor 1994; Migot-Adholla et al. 1994).

However, rules governing access to land are ambiguous and people's claims to land are closely linked to membership in social network and participation in formal and informal politics (Berry 1993). The social relations between tenants and landlords are of great importance in terms of ensuring continuous access to land and arrangements. To obtain and maintain access to valuable resource like land, people invest in social relationships by contributing items such as food, drinks, gifts, and ritual offerings during ceremonies such as marriage, funerals, and festivals. In addition to ceremonies, farmers also invest in social relationships by contributing to community projects and organizations such as home-town improvement unions, religious associations, and self-help groups (Berry 1993).

Land tenure evolution in Wenchi district

Wenchi district is characterized by the presence of different ethnic groups, the majority of which are migrant farmers from the northern part of Ghana. The district has historically attracted a lot of farmers from the northern part of Ghana in search of suitable place to farm because of its abundant natural resources, particularly land in the past. Wenchi, the district capital, is strategically located because it is the first major town encountered when one is traveling from Nandom or Wa (the original homes of most of these migrants) to Kumasi, the second largest city in Ghana. Wenchi is also close to Techiman, one of the fast-growing marketing centers in the West Africa sub-region where there is strong demand for high-valued food crops like maize, yam, and groundnut. Originally, migrant farmers gained access to farmlands by presenting drinks and a salutation fee to the chiefs who then allocated land to them from which they were allowed to clear as much land as they could (Amanor 1993). Later, in the early 1940s, when more people moved into Wenchi in search of fertile land for the cultivation of crops such as cocoa, the traditional council issued land to migrants on the basis of *Abusa* or collected annual tributes (Amanor 1993). In Wenchi, an *Abusahene* (Chief responsible for managing natural resources in the traditional area) was created to manage the renting of stool land to migrants. In the early 1960s the central government banned the traditional council from raising revenues in tributes and instead introduced an annual fee (Amanor 1993). Once the annual fee was paid, the migrant could clear as much land as wished in the area allowed. Currently this fee stands at ¢200,000.00 (US$22) annually or an equivalent of one 100 kg bag of maize.

As the migrant population increased, newcomers began to enter into various forms of land tenure contracts with the natives. These contracts have evolved from a system whereby migrants obtained land in return for services rendered, towards more monetized interactions such as sharecropping and land renting. In the period when land was in abundance and the population was low, landowners often gave their land out for sharecropping. However, as the monetary value of the land increased, most landowners began to rent out their land to migrants instead of entering into share contract. This monetary value has increased by the circumstance that families and individuals owning land have become more interested in cash along with the greater role of money in the economy at large. Monetization of land has also increased in view of population increase and the influx of farmers from the Upper west region coupled with commercialization of agriculture. For instance, people need money to pay for emergency expenditures such as medical bills, funeral expenses, court cases, and shelter.

Tensions between natives and migrants in the research area

The study took place in three nearby communities in Wenchi district which are located about 5–7 km away from

Wenchi along the Wenchi-Techiman road. The farmers in these communities have been involved in action research trials in soil fertility management since 2003, after a diagnostic study revealed the existence of intriguing practices and beliefs regarding the role of cassava in soil fertility management (Adjei-Nsiah et al. 2004). The communities which are made up of natives (80%) and migrants (20%) have a total population of about 3,750, the majority of which are farmers. The natives who are the landowners are Akan speaking Bonos while the migrants are made up of four ethnic groups, namely the Walas (50%), Dagarbas (30%), Lobis (10%), and Mossi (10%). A further exploration of diversity in the research area (Adjei-Nsiah et al. 2007a) revealed that the various ethnic groups differ with respect to history and context of migration, duration of stay, and the nature and quality of relationship with the local communities. For instance, while Mossi, Lobis, and Dagarbas migrated into the communities between the 1940s and 1960s, Walas started migrating into the communities in the early 1990s. And while earlier migrants have developed long-standing relations with the natives and regard their stay as permanent, Walas tend to view their stay in the community as temporal and repatriate a considerable part of their income to their home of origin. In comparison with other migrant groups, Walas tend to have relatively large farming enterprises and seem to be relatively successful in economic terms (Adjei-Nsiah et al. 2007a).

In the research area, tensions around land tenure have arisen in particular between the native Bonos and the Walas. As mentioned in the introduction, Bonos tend to accuse Walas of degrading the soil on land rented out to them, while Walas claim that the high rents and advance payments demanded by Bonos prevent them from hiring land for longer periods and leave them no choice but to exploit the land to recoup the money invested. In addition, they complain that landowners will not allow them to reap the benefits of investments made in soil fertility on land that is rented for shorter periods (Adjei-Nsiah et al. 2004). Also in other areas tensions have risen between natives and Walas. Natives dislike that Walas are putting up thatch roofed houses in the community which—according to the natives—makes the community look ugly, while at the same time Walas repatriate income from their farming activities back home to reinvest. Natives have on several occasions threatened to no longer allocate plots for house construction to Walas. In some occasions, Walas have been dragged to court or brought before the village committee by the natives with the least provocation, often resulting in fines being imposed on the Walas. Some migrants have had their sheep and goats poisoned by natives after the animals strayed into natives' fields. These hostilities by the natives tend to be interpreted by the migrants as jealousy of their hard work and success in their farming activities. In short, the relations between Bonos and Walas are tense and unhealthy and go along with accusations and stigmatization from both sides (see also Adjei-Nsiah et al. 2007a).

Action research methodology

Due to the social dynamics occurring in and around the action research, efforts to work towards more favorable land tenure arrangements had to be re-oriented several times. In view of these changes, the research journey can be seen to have three main stages. Each stage is characterized by specific objectives, approaches and research methods. More details about these are provided below. In short, in stage 1 we tried to use multi-stakeholder platforms as forums for negotiating alternative tenure arrangements. In stage 2, we monitored experimentation with alternative land tenure arrangement initiated by two pairs of landowners and tenant farmers. In the stage 3, we made investigations into institutional problems associated with land tenure and emerging institutions to deal with these problems. All field research was carried out by the first author. Reference to his activities in the description of the three stages will be in the first person from hereon.

Stage 1: Discussing land tenure in multi-stakeholder platforms

Research approach and methods in stage 1

From the start of the collaboration, on-farm experimentation with farmers on different cropping systems and rotation strategies was an important component of the action research, and this remained so throughout the research period. These experiments took place together with three mixed groups of farmers with each group consisting of between 11–16 farmers. Altogether the experimental group consisted of 18 migrants (two Lobis, five Dagarbas, and 11 Walas) and 21 native farmers plus the local agricultural extension agent. Some of the native farmers were also opinion leaders, unit committee members (which is the lowest rung in the decentralized formal administrative structure of the government of Ghana), and sub-chiefs in the communities. Only one migrant was a member of the unit committee representing the migrants. This group carried out all experimental activities and served at the same time as a platform to discuss the outcomes of the research, including findings regarding land tenure. The group (from now on the "experimental platform") met in the field on a bi-weekly to monthly basis.

In addition to this experimental platform, a second platform was created from the outset with the prime purpose of

ensuring that research findings would not remain within the group of participating farmers. This second platform included various stakeholders in the agricultural sector in the district and met once in every three months to discuss the activities of the action research program being carried out with the farmers. These stakeholders included chiefs, sub-chiefs from the three communities, agricultural extension agents, farmers, representatives of NGOs, and farmer-based organizations and opinion leaders. Officially this higher-level platform consisted of 25 members, but as meetings took place in the community there were often more people attending, including farmers from the experimental platform. In practice, this meant that attendance was normally between 40 and 60 people. I asked a local senior official associated with the Wenchi District Assembly to facilitate and chair the first meeting of the platform, and he was asked by the group to continue his efforts in subsequent meetings.

During the platform meetings, I acted as a resource person and stand-in facilitator. At the same time, I acted as a "participant observer" who monitored and documented the dynamics in the platforms for PhD research purposes. When the initial experiments and subsequent discussions on the outcomes in the experimental group revealed the existence of tensions on land tenure, I decided to try and use the already established platforms in order to discuss, negotiate, and design alternative land tenure arrangements. This strategy was informed by a popular body of literature which suggests that multi-stakeholder platforms can contribute much to resolving complex problems and conflicts regarding natural resources (Ostrom 1990; Röling and Jiggins 1998; Maarleveld and Dangbégnon 1999; Steins and Edwards 1999). Essentially, the idea behind this is that such platforms can contribute to conflict resolution by providing a space for exchange of perspectives, dialogue, and learning (Bawden 1994; Pretty and Chambers 1994; Berkes and Folke 1998; Röling and Wagemakers 1998), which in turn might lead to the identification of common objectives, understandings, and creative solutions.

Results in stage 1: The failure to sustain a constructive dialogue

During the first year of experimentation, positive effects of rotations with mucuna, pigeonpea, and cassava became evident (Adjei-Nsiah et al. 2007b). However, most of the migrants argued that the prevailing land tenure arrangements in the community would not allow them to apply these practices to improve the productivity of their land. From that period onwards, several suggestions were made by both migrants and natives in the experimental group about possible alternative land tenure arrangements that would encourage migrants also to apply these management strategies.

Most of the suggestions made by the migrants required that, to enable them to use cassava and pigeonpea to improve the soil, landowners should reduce the land rent for the period that these crops would be occupying the plot to the barest minimum if not struck off altogether. Most of the landowners, however, were of the view that even if the land is given to migrants at zero or reduced rent to enable them to cultivate cassava or pigeonpea to improve the soil, they would still use the land to grow maize since income from pigeonpea and cassava is poor compared with maize. Hence, they argued that the type of arrangement proposed by migrants would only work if it went along with clear agreements about the crops to be grown, including sanctions in case of violation. Even if disagreement remained, discussions in the experimental group were held in a relaxed and peaceful atmosphere initially and members on this platform expressed their opinions freely. These constructive discussions ended, however, some time after the issue of land tenure had become an issue for discussion in the higher-level platform.

As the higher-level platform was regularly informed about the results of experiments as well as on progress in the experimental platform, the issue of land tenure became an issue for discussion there too. In fact, it soon became the dominant topic for debate. In contrast to the open atmosphere in the experimental platform, however, communication in the higher platform soon took the form of accusations and counter-accusations. Native leaders started to blame the migrants for the occurrence of soil degradation, and migrants responded by uttering grievances regarding limited land security. On several occasions tensions rose high, and I was not successful in redressing this pattern of exchange. After the fourth meeting of the higher-level platform, the Wala leader came to see me and requested that the discussions on the land tenure be discontinued. His argument was that if the discussions continued, the community leaders would design rules to regulate their access to land, and if they were not able to follow those rules it would worsen their already sour relationships with the native community. I agreed to do this in order to not jeopardize my other work and relations with the various communities.

Analysis and discussion of findings in stage 1

The fact that discussions on land tenure had to be aborted in the platforms can be attributed to several factors. In retrospect, it was probably a major strategic error to shift the discussions on land tenure from the experimental platform to the higher-level platform at an early stage in the process. For several reasons this platform was far less suited for

discussing such a sensitive issue. People in the platform lacked the collaborative experience of joint experimentation accompanied with intensive informal interaction in the field. Hence, they did not know each other well at a personal level, and had little common experience other than having gone through previous conflicts that had caused the relations between Walas and Bonos to be damaged. As Steins and Edwards (1999) argue, productive platform dynamics depend in part on the quality of social relationships. Moreover, the platform involved community leaders and meetings were held in public with at times a large audience. As has been argued by Mutimukuri and Leeuwis (2004) such public meetings provide limited opportunities for the kind of "give and take" that is necessary for settling disputes. Rather they provide an environment in which leaders like to manifest themselves, show strength and rally for support. In addition, I was far from an experienced facilitator and hence lacked the methodological skill to counteract the dynamics that emerged.

Lack of mutually felt interdependence and urgency may also have negatively affected the dynamics in the platforms. Several authors point to the importance of these factors in securing productive learning and negotiation processes (Fisher and Ury 1981; Mastenbroek 1997; Aarts 1998; Leeuwis 2000; Leeuwis and Van Den Ban 2004). As Walas regard their stay in Wenchi as temporary, maintaining good relations with the natives is not the highest priority. Moreover, Walas have other options for accessing land such as the *taungya* system or relocating to another community when the soils on which they farm become degraded. In addition, there tend to be sufficient Bonos who are still willing to rent out land in view of immediate cash needs associated with events such as funerals, court cases, house building or health related costs, even if they know this might lead to declining soil fertility (see also Adjei-Nsiah et al. 2007a). Apparently, Bonos in these respects depend more on the Walas than the other way around. This unequal dependence is to the advantage of the Walas. For them, the higher-level platform at some point presented the risk of Bonos becoming better organized among themselves, which might allow them to take firmer action against soil mining. Not surprisingly, therefore, Walas became less enthusiastic about negotiating land tenure in the platform.

Stage 2: Experimentation with alternative land tenure arrangements by individual farmers

Research approach and methods in stage 2

After the failure of the platform process, efforts to support the development of new tenure arrangements shifted to the level of individual landowners and tenants. This was possible since several farmers in the experimental platform had indicated that they would like to experiment with new arrangements. Two landowners and two migrants "designed" (i.e., negotiated) an alternative tenure arrangement in close collaboration with me. I also closely monitored the implementation of the arrangement by having regular contact and discussions with both parties involved. My interest was to find out whether the experiments would indeed allow for more sustainable cropping systems, and which factors would influence their success or failure. After the ending of the "experiments," I evaluated the contract with the landowners and tenants involved by means of an interview. In addition, the basic design of the alternative tenure arrangements was explained to five separate focus groups whereby details from case 1 (described below) were used as an example. Subsequently, the groups were asked to discuss the alternative arrangement and rank it against more common tenure arrangements. The focus groups were composed along ethnic lines and the participants coincided largely with the members of the experimental platform.

Results in stage 2: Alternative designs meet with family dynamics

One of the main reasons why tenants were not willing to invest in soil fertility management was payment of high rent which had to be made in advance. The alternative arrangements that were negotiated between the two pairs of farmers had in common that payment of rent was delayed until after the harvest and took the form of a fixed amount of produce (or its cash equivalent). In addition, both arrangements included agreements with regard to the crops to be grown. No specific time frame was included in the arrangements (in Wenchi this tends to happen only when advance payment is involved). However, the expectation of both farmers and myself was that the subsequent payment and agreement about cropping systems would result in greater satisfaction for both parties involved. Such mutual satisfaction, then, might form the basis for longer term contracts in the future, as an important condition to soil fertility improvement.

Case 1: Alternative land tenure contract involving a Wala migrant and an elderly landlady. The tenant is a 36-year-old migrant (Wala) from Wa in the upper west region of Ghana. He had stayed in Beposo, a farming community in Wenchi for the past 12 years. Prior to the new contract, the migrant had engaged in a share contract for one year with the 75-year-old native landlady. Under the share contract the migrant grew maize on 1.2 ha and cassava on 0.4 ha of land. The cassava was shared equally between the two parties

while the maize was shared in a ratio of 1:2 with the landlady taking one portion while the tenant took the remaining two portions. At the end of the share contract, the tenant decided to abrogate the contract and search for another land where he could engage in a different contract because the yield he obtained was not commensurate with the amount of labor and resources he had invested in the land.

A son of the landowner who did not want the tenant to leave the land asked him to propose an alternative arrangement which he thought would be beneficial to him (the migrant). The tenant then suggested that he would crop 1.2 ha of the land to maize and give four bags (two bags each in the major and the minor growing seasons) of the produce to the landowner either in kind or in cash at the prevailing market price. Under this new arrangement, the tenant was responsible for harvesting, shelling, and transporting the produce home. He would cultivate the remaining portion of the plot (about 0.4 ha) to cassava as a soil fertility regenerating strategy, the produce of which was to be shared equally between him and the landowner. The son of the landowner consequently informed the mother who agreed and came to the tenant's house for the contract to be formalized.

In the presence of the tenant's wife, the owner of the house where he (the tenant) resided with another migrant farmer, the agreement was formalized orally. None of the children of the landowner were, however present. In order to secure the contract, the tenant later asked the landowner to put the contract into writing. However, the landowner objected to this suggestion and said that the oral contract in the presence of the three witnesses was enough. The landowner explained that she did not want a written contract because of the cost implication; in the prevailing tenure system, landowners are responsible for the payment of the cost involved in documenting a contract.

At the end of the major cropping season, the tenant realized 16 bags of maize from the 1.2 ha he cropped. He consequently gave the landowner three hundred thousand cedis (US$33.3) a cash equivalent of two bags of maize each weighing 100 kg, which the woman accepted and for which she thanked him.

In the minor season, the tenant cropped the land to maize. A month later, a daughter of the landowner went to the field. When she came home she asked her mother about the tenant and contract. Upon hearing of the details of the contract, she objected to the contract in which the tenant was to provide the mother with two bags of maize every season and asked the mother to go and renegotiate with the tenant. Looking at the performance of the maize in the field, the daughter expected that the tenant was going to have a good harvest and therefore felt that giving the mother only two bags of maize was not enough. The landlady then went back to the tenant and demanded that she should be given a third of the produce from the minor season maize crop instead of two bags of maize because the current arrangement was unfair. The tenant rejected the new demand. Consequently the landlady summoned the tenant before some members of the village unit committee to persuade him to give her a third of the maize produce instead of giving her two bags. When the witnesses were called in, they testified that the tenant was supposed to provide the landowner with four bags of maize (two bags each in the minor and major seasons). The committee members therefore asked the tenant to provide the landlady with the remaining two bags after harvesting the minor season crop.

Not satisfied with the ruling by the unit committee, the landlady threatened the tenant with a court action. The tenant consequently informed me of the affair and asked me to accompany him to the landowner and discuss with the family how to resolve the issue. After discussions with the landowner she agreed to take the two bags of maize as agreed originally, but made it clear that she would prefer to go back to sharecropping the next season.

At the beginning of the second year, the landowner told the tenant that she would like them to revert to the share contract, and the tenant obliged. However, this time the tenant decided to crop only 0.8 ha instead of the 1.2 ha. Later, the tenant confided in me that if the woman insisted on the share contract he would cheat her. What he planned to do was to divide the produce into two after harvest and then hide half and declare the remaining half for sharing, a trick which some tenant farmers have been playing on their landowners. The landowner was an old lady who can hardly walk. The distance from her home to the field was about 11 km and her children also did not frequent this area because of the distance. Upon hearing this, I went back to the landowner with the tenant and assisted in negotiating with her in the presence of her eldest daughter after which they agreed again to the alternative arrangement.

At the end of the major cropping season the tenant harvested 12 bags of maize. As agreed, he gave a cash equivalent of two bags of maize which was ¢440, 000 (US$49) to the landowner. After collecting the money, other relatives of the landowner (who share a boundary with the tenant) informed the landlady that the tenant harvested a truck load of maize and therefore the two bags of maize he gave to her did not measure up to the quantity of maize harvested. The landlady upon hearing this decided to end the contract at the end of the second year.

Case 2: Alternative land tenure contract involving a migrant (Dagarba) and a landlord. The migrant involved in this contract was a 28-year-old Dagarba who had stayed in Wenchi for two years. During his first year stay he engaged in a share contract with a native but was not satisfied with the arrangement at the end of the first cropping year.

He approached another landlord (age 42) and asked if he could rent all of his six ha of land. Since he had no money to pay for an advance rent (as is usually the case), he negotiated with the landlord to allow him to crop and pay later at the end of the first cropping season. The landlord, however, was afraid that the tenant might not pay if there was a crop failure. He therefore proposed an alternative arrangement to the migrant which would not involve an upfront payment of rent. The landlord first asked the tenant the minimum amount of bags of maize he (the tenant) expected to get when he crops all the six ha of land in one growing season. The tenant mentioned 30 bags of maize. The landlord therefore requested the tenant to give him nine bags of maize every year to be paid in two installments of five and four bags in the major and minor seasons, respectively. Under the contract, the landlord mentioned that he would reduce the number of bags to be paid only when there is a crop failure as a result of drought. To encourage the tenant to improve the fertility of the soil it was agreed that during the minor season the tenant would intercrop half of the maize field with cassava, the produce of which would be shared equally between the two parties. If the tenant decided to crop the land only once in a year he would have to pay the full rent in the form of maize. The contract would be renewed after one year if both parties were satisfied. The tenant indicated that if the contract becomes successful, he would plant other crops such as groundnut, cowpea, and cassava to ensure sustainable use of the land and still pay the rent in the form of the maize.

The contract was to be put into writing at the beginning of the cropping season before the tenant started cropping. Each party to the contract was to provide three people to witness the contract. When the landlord informed his eldest son of the proposed contract, he objected to it. He explained that giving all six ha to the tenant would deny him (the son) access to land for farming. The landlord, however, ignored his son and went ahead and gave the land to the tenant without putting the contract in writing.

On the day that the tenant was to begin clearing the land, the son of the landlord went to the house of the tenant and warned him not to step on the land. Afraid of the threat, the tenant decided not to go ahead with cropping the land. He did not however inform the landowner of the action of his son.

Evaluation of the experiment by the parties involved as well as different ethnic groups

The fact that one contract never materialized in practice, and that the other was discontinued after two years, might easily lead to the conclusion that both experiments were a "failure." As we will argue in the next section, the reasons for this failure have more to do with intra-family dynamics than with the contents of the contract per se. In this section, we report on the evaluation of the contracts purely in terms of how different parties and communities evaluate the distribution of gains and losses involved. In doing so, we draw mainly on the outcomes of the first case.

From a purely economic perspective, the tenants and landowners involved in both cases remain positive about the design of the alternative contract when compared with other arrangements such as sharecropping and land renting (see Table 1).

The information in the table was obtained from the landowner and the tenant farmer. The yield figures under the new arrangement refer to the actual yields obtained under this particular new land tenure arrangement. The yield figures for the share cropping and the land renting arrangements refer to the amount of produce the tenant and the landowner would have obtained theoretically (based on what each party is expected to get under each of these arrangements) if both parties had entered into any of these arrangements instead of the new land tenure arrangement.

The tenant involved in case 1 argued that he did not have the financial capital to pay for an advance rent of US$28 per ha per year. The money that was to be used for the payment of rent could instead be used to hire labor to prepare the land for planting. The tenant obtained 16 bags in the major growing season and another 12 bags in the minor growing season from the 1.2 ha plot. Out of these, he gave four bags to the landlady and the rest (24 bags) became his. He argued that if he shared the produce with the landowner on the basis of 2:1, which is the normal practice with sharecropping, he would only obtain about 18 bags while the landlady would in theory get nine bags.

The landowner herself was satisfied with the arrangement because she would get money twice in a year instead of once in two years when the land is rented for two years. In Wenchi, land is normally rented out at US$28 per ha per year which means that the landlady gets about US$33.6 in one year when she rents out her 1.2 ha plot. However, under the alternative arrangement she would get US$ 77.7 from her share of four bags of maize in the first year (US$33.3 and US$44.4 from two bags of maize each in the major and minor season, respectively) (see Table 1). Although with sharecropping the landlady would in theory get nine bags of maize (instead of four, see Table 1), the landlady realizes that this option also has disadvantages. First of all, she incurs transportation and shelling costs. She is also aware of the risk of being cheated in the sharing of farm produce by the tenant since she lives about 11 km away from the farm and cannot frequent there. In sharecropping, the tenant usually shares the produce, often in the absence of the landlord. The tenant takes his share first and

Table 1 Estimated theoretical benefits accruing to landowners and tenant farmers from 1.2 ha under different land tenure arrangements in (1) major cropping season, (2) minor cropping season, and (3) major and minor cropping seasons combined in 2004 in Wenchi

Land tenure arrangement	No. of bags of maize obtained		Post harvest cost[a] (US$)[1]		Total revenue (US$)		Net revenue[b] (US$)	
	Tenant	Land-owner	Tenant	Land-owner	Tenant	Land-owner	Tenant	Land-owner
a) Major cropping season[2]								
Sharecropping	10.7	5.3	18.3	14.1	177.3	88.3	159.5	74.1*
Rent	16.0	–	32.4	–	250.0[c]	16.7	217.6	16.7
New arrangement	14.0	2.0	32.4	–	233.3	33.3	200.9	33.3
b) Minor cropping season[3]								
Sharecropping	8.0	4.0	16.2	12.0	177.8	88.8	161.6	76.8*
Rent	12.0	–	28.0	–	250.0[c]	16.7	222.0	16.7
New arrangement	10.0	2.0	28.0	–	222.2	44.4	194.2	44.4
c) Major and minor cropping season combined								
Sharecropping	18.7	9.3	34.5	26.1	355.1	177.1	320.6	151.0*
Rent	28.0	–	60.4	–	500.0	33.6	439.6	33.4
New arrangement	24	4.0	60.4	–	455.5	77.7	395.1	77.7

[a] Includes transportation cost from the field, de-husking and shelling cost

[b] Tenant farmer's field operational costs have not been deducted

[c] Cost of land rent has been deducted

[1] Exchange rate is ¢9000/US$1

[2] Maize was sold at US$16.7/100 kg bag

[3] Maize was sold at US$22.2/100 kg bag

*In theory this is what should happen but in practice there are risks that reduce revenue for landlords as is illustrated by arguments forwarded by the landlady in case 1 and additional cases reported in Table 2

leaves the landowner's share in the field. In addition, the landlady reports that, depending on the circumstances, she may lose up to 50% of the produce due to pests, animals or spoiling in the field. On these grounds, the landlady too continues to feel that the contract is beneficial in principle. Other interviews and stories narrated by community members also suggest that the returns a landlord gets from sharecropping may be far lower than it would be in theory (see Tables 1, 2).

The various ethnic groups (the Bonos, Walas, Mossi, Dagarbas, and Lobis) in the communities were asked as well to evaluate the alternative arrangement from case 1 by comparing it with more common arrangements like sharecropping and land renting. The Bonos ($N = 15$), Walas ($N = 12$), and Dagarbas ($N = 10$) interviewed were all part of the experimental platform except five of the Dagarbas while the Lobis ($N = 6$) and Mossi ($N = 10$) were not.

The Bonos who are the landowners ranked the new arrangement as the best arrangement and sharecropping as the worst arrangement. They argued that since at the time of the contract, one ha of land was being rented at ¢250,000 (US$28), the landowner could have obtained only ¢300,000 (US$33.3), if she had rented the 1.2 ha to the tenant. However, with this new arrangement she earned as much as ¢700,000 (US$77.7), about ¢400,000 (US$44.4) more than what she would have earned if she had rented it out. Moreover in case of crop failure due to drought the tenant was obliged to pay the four bags of maize as stipulated in the contract. Again, they argued that, if the land had been given out for share contract, the farmer could not have obtained more than two bags of maize due to cheating by tenant farmers.

The Dagarbas ranked the new arrangement as the most preferred arrangement and sharecropping as the least preferred arrangement. They argued that with this new arrangement, tenants do not have to worry about the problem of having to pay for advance rent before one can start cultivating the land. Thus this arrangement makes it possible for tenants with no financial capital to rent land for farming purposes. Moreover tenants could consume any quantity of the crop on the field while it is yet to be shared without having conflict with the landowner.

Walas and Mossi ranked the alternative arrangement as second to land renting. Because of the many problems associated with sharecropping, such as conflict over sharing of farm produce, these farmers argue that this alternative arrangement in which rent is paid in the form of farm produce and at crop harvest is a relief for tenants who do not have money to pay for advance rent. Since the tenant is also not obliged to share the produce with the landowner, he could also consume any portion of the produce at any point in time without incurring the displeasure of the landowner.

Table 2 Two examples of the risk of revenue reduction for landlords in sharecropping

A tenant in urgent need for cash
A forty-nine-year-old landlord loaned his 1.2 ha land to a migrant tenant to cultivate maize on share contract basis. At the end of the cropping season, the tenant gave the landlord only two bowls of maize weighing less than 20 kg, when the landlord requested for his share of the produce. When the landowner sent him before an arbitration body, the tenant pleaded guilty and explained that he sold the maize to enable him to get money to send his sick child to the hospital.
A tenant attempts to cheat the landlord
A thirty-five-year-old landowner gave his 1.6 ha land to a migrant tenant to cultivate maize for sharing. When the maize was ready for sharing, the tenant harvested the maize but before he informed the landowner to come for his share of the produce, he had divided the produce into two, hidden one-half of it in a nearby bush, and declared only the remaining half for sharing. When the landlord arrived in the field, he suspected that the tenant had not declared all the produce. He therefore decided to search the nearby bush and indeed found a heap of maize that had been hidden by the tenant. When the landlord threatened the tenant with a police arrest, the latter bolted and was never seen in the community afterwards.

The worry expressed by Walas and Mossi, however, is the risk of crop failure in time of drought. Under this arrangement, risk is not shared between the tenant and the landlord as happens in sharecropping. Thus, while profit is enjoyed by both landlord and tenant, risk is borne solely by the tenant and in a period of crop failure, the tenant is obliged to provide the landowner with his share of the farm produce.

Lobis ranked land renting as the most preferred arrangement and the alternative arrangement as the least preferred arrangement. They reason that under the new arrangement, risk is only borne by the tenant unlike sharecropping where risk is shared between the landowner and the tenant farmer.

Analysis and discussion of findings in stage 2

It transpires from the rankings and surrounding argumentations that, in principle, the alternative arrangement meets with considerable sympathy. While the landowning Bonos rank the arrangement first, the valuation among migrants varies. This is likely to be associated with differential positions in terms of access to cash and pre-existing land-security (Adjei-Nsiah et al. 2007a). While relatively well-off migrant tenants like the Walas prefer the land rental arrangement, poorer migrants like the Dagarbas prefer the alternative arrangement which does not involve advance payment of rent. Moreover, the earliest migrant groups who have developed cordial relationships with Bonos (e.g., Mossi and Lobis) are quite satisfied with the existing arrangements which in their case tend to be more stable and less conflict ridden (Adjei-Nsiah et al. 2007a). Thus, for them the alternative arrangement may have fewer added values. Thus, the alternative arrangement seems to offer opportunities especially for poorer landless farmers who cannot afford advance rent payment to access land for farming. Although the arrangement may have positive implications in terms of soil fertility maintenance (i.e., it may allow the use of more favorable cropping systems from a soil fertility point of view, see Adjei-Nsiah et al. 2007b), it is unlikely that the wealthier Walas (i.e., the migrant category that is held most responsible for soil mining by the natives) will voluntarily work with the alternative arrangement on a large scale. In sum, the evaluation of the alternative arrangement in comparison with other arrangements such as sharecropping and land rental indicates that farmers from different ethnic groups have different preferences, depending mainly on their financial position and the quality of their relationships with the native landlords. Other factors, such as willingness and/or capacity to take risks have not been investigated, but may well play a role as well.

An important lesson to be drawn from stage 2, however, is that the contents of the alternative contract are less important than relational issues of various kinds. Even if many people like the new arrangement, it does not seem to work well due to intra-family dynamics and ambiguities. In both cases, the agreements reached between migrants and landowners do not survive due to the circumstance that other family members (in these cases children) contest the agreement arrived at. The children claimed that their access and interests are jeopardized by the contract, and/or that they have not been properly consulted in the negotiations. In both cases, the landowning contract parties initially did not involve their family members in the negotiations, and neither do they inform them about it. The children involved believe that this is to prevent them from sharing in the benefits of the contract.

My own experience as well as further investigations in the community suggests that the problems experienced in the two cases are not isolated incidents. When I rented a piece of land to carry out experiments with the experimental platform, the contract was disputed by a nephew of the landlord who claimed he needed it for farming. This happened despite the fact that there was a written contract. Although, I could have taken action against the landowner, I decided not to do so because of its implications for my subsequent work with the community. Interviews with

tenants and village authorities revealed that younger family members rent out land regularly without the consent of the family head, which resulted in tenants being denied access to the land after having paid rent, or having to leave the land before expiration of the contract. In other cases, contracts were being challenged by family members after the death of the landlord. Similar to what happened in case 1, it is not uncommon for landowners to take back a plot of land before the rent expires, and re-rent it again for a higher price. This is especially when the landowner (or his family) observes that the tenant has had a bumper harvest in the previous season.

At first glance one might interpret the kind of dynamics portrayed simply as cheating both within native families, and between landlords and tenants. However, while self-interest, jealousy, and an apprehension about sharing revenues undoubtedly play a role, such practices must be understood in the context of wider struggles for resources, institutional configurations, and ambiguities. As Berry (1997, 2002) has indicated, access to land in this region of Ghana is closely intertwined with whether one can successfully claim to belong to a particular family or not, which already goes along with considerable ambiguity and space for negotiation. This is further complicated by the fact that different inheritance systems may apply to pieces of land with different histories, which again enlarges the space for contestation. The natives in Wenchi have a matrilineal inheritance system, which implies that children inherit resources acquired from the family through their mother and uncle; respectively those family resources accumulated or invested in by a male native are inherited by the children of his sisters, and not by his own children. Thus, children can only benefit from such resources as long as their fathers are alive. Some males respond to this by acquiring individual lands (e.g., by entering into a share contract or by buying land from other families) as resources generated and/or acquired through this route cannot be claimed back by the family and can be passed on to their own children (Amanor and Diderutuah 2001). All this implies that the question as to who has a legitimate claim to a piece of land depends to a large extent on family history, the history of land-use and land-acquisition, including the history of how resources to buy "individual" lands were generated. Such histories are often not transparent and leave considerable room for interpretation and negotiation, which is why historical narratives play such an important role in land disputes (Berry 1997, 2002).

Returning to the experiment with new land-tenure arrangement contracts, we can conclude that these efforts failed largely due to the fact that it is simply not clear and transparent with whom such contracts should be made in the first place. This situation suggests that when there is ambiguity in tenure, it becomes difficult for people to experiment with new contractual arrangements. Ambiguities in tenure are complicated further by another source of uncertainty that is inherent to agricultural production, namely the variable climate and ecological conditions that influence production levels. In one of the experiments (case 1), dissatisfaction on the side of the (family of the) landlady arose in particular when the tenant was observed to have a particularly good harvest. A weakness of the contract arrangement was that—unlike sharecropping—it did not have an inbuilt provision to adjust payment to the revenue obtained. It would be interesting to explore whether more flexible contracts could help to ameliorate disputes around rented land. Such an arrangement would be somewhere in between conventional sharecropping and conventional land renting, and seek to combine favorable aspects of share-cropping (e.g., adapting payment to revenue, ex-post payment, agreement about cropping systems) with those of land renting (e.g., clarity about payment, allowing continuous harvesting, ease of preventing post-harvest losses, less liable to cheating) while avoiding associated weaknesses.

Stage 3: Exploring institutional arrangements to deal with ambiguity

Research approach and methods in stage 3

The findings in stage 2 led again to a shift in efforts. It became clear that a better understanding was needed of how people deal with ambiguities in land-tenure, which institutions exist to reduce uncertainties and risks surrounding tenure arrangements, and how such institutions could be strengthened. I conducted informal interviews with key informants such as community leaders and so-called "letter writers" and "commissioners of oaths" who were found to play a role in formalizing contracts. Two community leaders, three letter writers, and one commissioner of oaths were interviewed. Subsequently, a survey was conducted among 33 tenants to find out how many tenants had written contracts. This was done by first using snowball technique to make a complete list of all migrants in the three communities and their tenancy status. From the list, all tenant farmers who rent land were interviewed to find out whether they had written contracts or not.

Results in stage 3: Increased use of written contracts

The key informants all signaled that, as a response to the numerous land disputes occurring, many tenants are now interested in written contracts as a means of formalizing and securing their agreements with landlords. The survey

carried out subsequently among tenant farmers indicated that in 2005, 13 out of 33 had written contracts. Key informants claimed that this figure is considerably higher than in previous years. Tenants indicated that they resort to written contracts especially when the contract exceeds one year and/or involves a large sum of money. When trust develops gradually between the landlord and tenant after two contract terms or so, subsequent contracts are sometimes made without documentation. It is relevant to note that in the research area written contracts are only drawn up for land renting, and not for sharecropping or other tenure arrangements.

Contracts are made between the landowner and the tenant farmer and, according to respondents, should be witnessed by at least two people provided by each of the parties. Preferably the witness of the landowner should be a close relative of the landowner who would be in a position to challenge the validity of the contract. Such a person could be the eldest son or daughter of the landowner in the case of private land, or a nephew, a sibling or a family head in the case of family land. However, as one of the earlier cases demonstrates, this does not always happen as landowners may well be reluctant to let close relatives know of contracts made. Instead, some landowners solicit the assistance of people outside the family with no right in the land to witness the contract.

Typically, written contracts indicate the land area, the location of the land, and the duration of the contract; the documents include names and thumbprints or signatures of landowner, tenant, and their witnesses. Both the tenant and landowner receive a copy. The documents are kept at a secure place and produced before an arbitration authority when the contract is disputed.

In Wenchi, written contracts are not validated by public officials or local authorities (as reported elsewhere by Lavigne Delville 2003). Institutions that do play an important role in preparing and documenting contracts in Wenchi are so-called letter writers and commissioners of oaths. Commissioners of oaths are normally retired civil servants (e.g. police officers, teachers, court registrars, etc.) who are licensed or registered to prepare official written documents (such as contracts and wills) for individuals for a fee, and are usually located in larger towns. Letter writers tend to be individuals who operate secretarial businesses in smaller communities for a fee. Contracts prepared by commissioners of oaths have official legal backing while contracts prepared by letter writers normally do not, unless the letter writer is licensed to perform specific tasks. Two commissioners of oaths are located in Wenchi district, while several letter writers are located in the communities. Reportedly, their number has grown in recent years; in Beposo village alone there are three letter writers. As the commissioners of oaths charge higher fees and are only located in Wenchi, most people prefer the services of the letter writers. It is usual that the party who receives money pays for the preparation of the contract, which simultaneously serves as a kind of "receipt" for the paying party. Thus, the cost of putting the contract on paper is borne by the landowner only, which sometimes deters them from engaging in written contracts. Some tenant farmers are, however, willing to pay for the cost when the landowner is unwilling to do so.

In addition to preparing the contracts, commissioners of oaths and letter writers frequently serve as principal witnesses during land disputes. Such disputes are often brought before unit committees and/or community elders. The unit committees are local government structures which operate at the community level. The community elders who constitute the traditional authority are made up of the chief and his elders. An aggrieved individual in a land dispute may decide to send the case to any of the two bodies, depending on where she or he thinks the case may receive a fair hearing. These two bodies serve as the main arbitration bodies in the communities who settle land disputes at the local level. Despite the important roles that they play, their decisions are never binding. A person who does not trust the fairness of the two bodies or feels aggrieved by a decision may decide to seek redress at a district magistrate court or even at a higher court.

Analysis and discussion of findings in stage 3

The increased use of written documents to secure and formalize contracts has also been reported by others and elsewhere in Africa (Lavigne Delville 2003; Lavigne Delville et al. 2001; Amanor and Diderutuah 2001). The emergence of this alternative way of dealing with land tenure agreements can be interpreted as a local response to changing socio-economic circumstances, including increased pressure on the land as well as frequent tension between natives and migrants concerning land tenure. It shows that local actors engage actively in solving problems, in this case by developing institutional innovations (Lavigne Delville 2003) in the form of written contracts for land renting and associated rules and procedures, as well as the growth in the numbers of service providers. These developments demonstrate the self-organizational capacity of local actors in bringing about institutional innovations in land tenure systems where current arrangements for managing conflict are no longer sufficient (see also Le Meur 2002).

However, the current institutional innovation that we have observed did not solve all problems around land tenure in Wenchi. As we have seen, written contracts in Wenchi are only used for land renting and tend to be restricted to contracts that involve money. For example, they do not cover sharecropping even if such share crop arrangements

go along with considerable tensions as well, especially regarding the sharing of produce. Written sharecrop contracts are reportedly common in the citrus and oil palm belt of the Eastern region of Ghana (Amanor and Diderutuah 2001). In addition, a written contract alone is not an absolute guarantee of tenure security. When not witnessed by the right persons, the contract can be successfully challenged. With the situation that I experienced (see stage 2), neither of the two witnesses to the contract was a close relative of the landowner. Even if written contracts may enhance transparency on what is agreed upon and may contribute to relevant family members being informed about them (as witnesses or otherwise), the ambiguities around land tenure are such that disputes still arise easily. And when such disputes arise, tenants often hesitate to strain their relationships with their communities of residence by engaging them in legal battles which may be expensive, time consuming, and sometimes run into years. Finally, the securing of a written contract requires the consent of all parties, and tenants in particular are not always in a position to persuade native landlords to co-operate.

In all, we see that local actors have already worked towards new institutional arrangements that may contribute to reduction of uncertainties and conflict around land tenure. However, there is still considerable scope for the further development of such innovations. Possibilities in this respect may include (1) the development of written contracts that somehow make sharecropping less vulnerable; (2) contractual provisions for renting that create a link between the level of rent and the level of revenue obtained; (3) clear and agreed upon rules as to who can contract out what land and who should be involved as witnesses to make a contract valid; (4) mechanisms for parties to find out what the status of particular lands and landlords is vis-à-vis such rules; (5) increased involvement of local authorities in validating contracts; (6) better licensing and/or certification of letter writers; and (7) strengthening customary and local institutions to manage land related conflicts at the local level. These are just examples of possible strategies that may be pursued.

Conclusion

We have reported on a long action research journey in the social realm that began when our 2002–2003 diagnostic study (Adjei-Nsiah et al. 2004) suggested that we needed to work on alternative land tenure arrangements if we wanted to contribute to the creation of better conditions for soil fertility improvement. Our initial approach was to bring stakeholders together in a platform to engage in the collaborative design of new arrangements. These efforts were stranded mainly because conditions conducive for learning and negotiation appeared to be lacking. We then proceeded with supporting experimentation with new kinds of tenure arrangements between individual landlords and tenants. Although the type of arrangement experimented with was appreciated in principle by some groups of farmers, many problems occurred during the implementation. While we had worked on the contents of the contracts, more pressing problems appeared to be associated with ambiguities regarding who is to be involved in contracts in the first place. In the final stage of the journey, we set out to gain a better understanding on how such ambiguities could be tackled and found that local actors themselves had already made some progress in working towards institutional innovations without us noticing initially. Specifically, we discovered that local actors had established institutions that tend to reduce uncertainties and risks associated with land tenure arrangements. These include increased use of written contracts and mechanisms for dealing with land tenure conflicts such as the setting up of bodies at the local level to arbitrate in land issues. However, these institutional innovations only covered land tenure arrangements involving money transfers (and not sharecropping) and were still affected negatively by ambiguities in entitlement to land, resulting in lack of clarity about who would be legitimate witnesses and unavailability of licensed officials to validate contracts. This suggested that we might have better oriented our action research to developing solutions for such problems.

One could say that, in a sense, we have "missed the point" repeatedly during our action research, despite the fact that we—and the program of which we were part—deliberately invested considerable time and effort in so-called "diagnostic studies" (see Röling et al. 2004). In other words, we made several assumptions and/or "pre-analytical choices" (see Röling et al. 2004) that proved misguided in retrospect. It must be acknowledged that some of these problems could have been avoided if we had delved earlier into the existing social science literature on, for example, ethnic diversity, migration patterns, ambiguity in land tenure, and multi-stakeholder platforms, and if we had integrated such insights in the design of alternative arrangements beforehand. To allow for such a more intensive and prolonged social science exploration and diagnosis, it would have been better if we had worked with an inter-disciplinary team of researchers in the field, instead of with an individual (and mainly technically trained) PhD student with an inter-disciplinarily group of supervisors "at a distance." Moreover, we feel that our diagnostic activities at the field level should have been more geared towards identifying local initiatives and responses to problems, rather than to getting a better understanding of different problem perspectives only. Such a way of carrying out the research would probably have led

to a quicker understanding of the complexity of the situation. However, we want to argue still that "missing the point" at times is inevitable when engaging in (action) research, and that the recognition of it is in fact a sign of learning and progress. If researchers want to contribute to change and development and to engage with communities, they need to start somewhere and find an entry point on which local actors are willing and motivated to work. In this case, the initial entry point was "optimizing locally developed technical strategies for dealing with soil fertility." Sustained critical reflection and diagnosis during collaborative technical experimentation with farmers led to progressive insight and greater attention for the social realm. Although unanticipated problems and even conflicts occurred in the effort to address social issues, these were functional in that they led to sharper problem definitions and new courses of action, not only on the side of the researcher, but also on the side of societal stakeholders.

Change and innovation processes eventually depend on action, and action is a critical condition for and component of learning (Kolb 1984; Leeuwis and Van Den Ban 2004). In complex situations, it is fundamentally impossible for a researcher to come in with a full understanding of the situation, and even if we had come in better prepared (and/or with a team) and started the action research differently, we would have discovered flaws in our thinking, and faced the need to adapt to the entry points of local actors as well as to the unpredictable outcomes of social (inter)action. An important conclusion to be drawn is that action research requires continuous "diagnosis" and critical reflection on assumptions and outcomes in order to flexibly steer research into relevant directions. This requires the deliberate organization of moments where stakeholders and scholars with different disciplinary orientations can give feedback on preliminary findings, assumptions, and proposed ways forward.

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