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### Electronic reference

Habibou Ibrahim, Marc Mormont and Boubacar Yamba, « Local innovations and initiatives in the management of conflicts and health risks in agro-pastoral zones: the SAREL and PASEL projects in the Dakoro, department in Niger », *Field Actions Science Reports* [Online], Special Issue 11 | 2014, Online since 21 March 2014, connection on 05 November 2014. URL : <http://factsreports.revues.org/3517>

Publisher: Institut Veolia  
<http://factsreports.revues.org>  
<http://www.revues.org>

Document available online on: <http://factsreports.revues.org/3517>

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## **Local innovations and initiatives in the management of conflicts and health risks in agro-pastoral zones: the SAREL and PASEL projects in the Dakoro, department in Niger**

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**Abstract.** This article examines two projects concerned with livestock production in the Dakoro region of Niger. It highlights the results obtained in the management of conflicts between livestock producers and crop farmers, and in the reduction of health risks by promoting the involvement and accountability of livestock producer associations in project activities. The collaboration of local stakeholders is an initiative and a local knowledge-sharing opportunity to promote peaceful conflict resolutions in the context of high land pressure and competing agro-pastoral land use. Such institutional, technical and social initiatives improve participatory governance and legitimise decisions at the grassroots level. They have made a significant contribution to prompting social change and to setting the scene for better security for mobile pastoral systems.

**Keywords.** Innovation, Governance, Initiatives, Conflicts, Agro-pastoral, Health risks, Dakoro, Niger

### **1. Introduction**

Securing access to resources and land tenure systems is crucial to the management and resolution of land conflicts (Herrea et al, 2007). In Niger, where land pressure is aggravated by population growth, land conflicts have become a chronic issue, an ongoing reality (Gado, 2000). The plurality of standards and a variety of sources of law add to the complexity of land conflict cases between parties in the Dakoro and Guidan Roumdji regions (M, 2001). The Maradi region serves as a zone of contact for the pastoral North and the agricultural South. The overall dynamic of livestock production systems is determined by the complementarity of agro-pastoral areas. This is threatened by land pressures and leads to organisational changes in central South Niger communities (Yamba, 2000, 2004). This article examines the role of pastoralist associations in Dakoro in

handling conflicts and health risks. Indeed, farmers' organisations in Sub-Saharan Africa – and especially in Niger – play an important role in formulating agricultural policies and are undoubtedly a key element in the success of local initiative promotion (Mercoiret et al, 2004; Deveze & Courade, 2006; Mercoiret, 2006). Two development projects in Dakoro have highlighted the importance of joint initiatives between local stakeholders and projects in reducing the number of conflicts and managing health risks in agro-pastoral areas. This article will expose the significant progress achieved in research into solutions for mobile livestock farming systems through the implementation of participative processes within the PASEL (“Projet d’Appui au Secteur de l’Elevage”: livestock production sector support project) and SAREL (“Sécurité Alimentaire Renforcée par l’Elevage”: food security strengthened through livestock production) projects, and will analyse their

effects on improvements in livestock farmers' access to health services and in conflict management.

## 2. Methodology

The methodology uses an ethnographic approach. The survey instruments used were questionnaires and open interviews with local actors on their perceptions of project activities and associations. The results are also drawn from project works and documents, from NGOs and state technical service reports. To ensure data reliability, meetings were held with community representatives from five territorial authorities to compare information from various sources. In total, twelve pastoral organisations, seventeen pastoral groups in the department, two pastoral group chiefs and four chiefs of sedentary cantons in the zone participated in the survey. The study also included land commission secretaries, prefects, project and Non-Governmental Organisation (NGO) agents and the presiding tribunal judge of the area.

## 3. Major challenges and issues in the Dakoro region

### 3.1 Localisation and natural potential of the area of study

The Dakoro department is located in the northern extremity of the Maradi region, and has a surface area of 17.670 km<sup>2</sup>. It alone represents 42.28% of the Maradi regions territory. With a population of 606,862 (Institut national de la statistique du Niger, 2011), the area is home to a diverse mixture of communities - Hausas (83%), Peuls (6%), Tuaregs (11%) - combining crop farming and livestock farming. Three agro-ecological zones characterise the Dakoro department: the agricultural (crop farming) zone in the south (187,000 Ha), the agro-pastoral zone (978,000 Ha), and the pastoral zone in the north which covers an area of 460,000 Ha (SDDRM, 1997). The latter two represent strategic areas for the development of livestock production and regional and cross-border transhumance (55.8%) (KRB Ingénieurs Conseils, 2003). The agricultural zone stretching over the south and the north of the Goulbin Kaba valley is characterised by a land occupation rate of over 60%. The intermediary zone abounds with natural pastoral enclaves which are essential to mobile livestock production (Tarka Valley) and the pastoral area in the north representing 36% of the department is occupied by 5% of the population. Due to the progressive decrease in crop-lands and increasing land-grabbing in livestock farming zones, pastoral systems have become vulnerable and the state has failed to protect the northern crop farming boundary (law 61-5 of 26 May 1961) in Niger. To combat rangeland degradation (20%) and control animal disease (67.3% of animal species threatened by disease linked to transhumance; KBR Ingénieurs Conseils., 2003) in Dakoro, the PASEL I and VI projects intervened to protect the 64 pastoral enclaves (18,349 km<sup>2</sup>) and create transhumance corridors, to improve the natural resource governance and strengthen pastoral organisations.



Figure 1: Transhumant herders staying in the Tarka Valley (Dakoro, 2012)

Concerning the animal health aspect of the SAREL project, the aim is to reinforce the defensive capacities of vulnerable households and to protect livestock operations in the region. The emergence of pastoral associations over the last two decades in the sociopolitical arena represents a decisive turning point in the management and prevention of conflicts and use of natural resources. They have imposed themselves as key players alongside other pre-existing institutions in the political arena. They work to justify forms of territorial anchorage and identity claims of pastoral territories. Thus these associations compensate for the disengagement of the state from these socioeconomic issues.

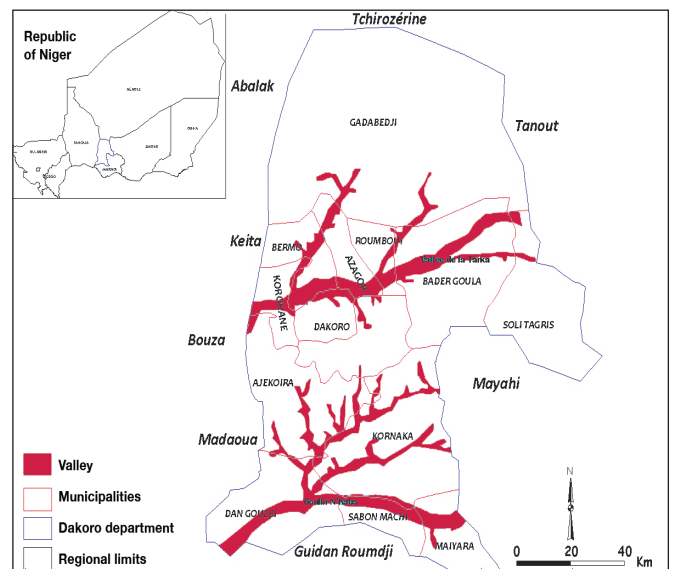


Figure 2. Map indicating the zone of intervention of the two projects

### 3.2 Issues and challenges of agro-pastoral systems

The socioeconomic and ecological changes of the last 40 years have resulted in land saturation and high pressure on uncultivated areas (Mortimore *et al.*, 2001; Raynaud, 2001; Yamba, 2000; Genguant *et al.*, 2003; Yamba, 2004).

Demographic growth and household vulnerability lead to land insecurity for small family farms and increases in land transactions (Lawali, 2011). Droughts and famines modify agricultural and pastoral practices in this part of Niger. Land saturation in the south of the department as a result of population growth (3.5%) and the expansion of the agricultural front towards the pastoral area 20 km north (law 61-5 of 26 May 1961) has led to land-grabbing and land cultivation by sedentary populations. In response to this agricultural encroachment in the area, livestock farmers anarchically create water sources for their herds in order to secure exclusive pastoral land tenure. These actions give rise to local conflicts which are often taken to the highest state level to ministries of agriculture and livestock. Certain dominant groups and politicians fuel these tensions for land and population control to strengthen their electorate in the light of decentralisation. They take over communal resources and impose new access systems and adaptation demands on transhumant livestock farmers (exclusive appropriation of public borewells, concrete wells, monetarised third-party access).



Figure 3. Territorialisation process and marking of pastoral areas by farmers (2012)

This dynamic has a significant effect on farmers and pastoralists seeking a land base, and increasing numbers of actors are being excluded from the system (i.e., deprived of land). There are, then, in the Dakoro region, problems of planning land development and protecting land for pastoral use. The difficulties of access to pastoral resources, and the inaccessibility of transhumance corridors and rest areas for livestock during transhumance lead to increasing concentrations of livestock producers on pastoral lands, which accelerates the degradation of these pastoral resources and overgrazing, exacerbated by inappropriate burning and straw harvesting. The multiplicity of stakeholders, political interventionism, the non-implementation of rural code regulations, and the weakness of formal conflict management and land security institutions constitute a challenge for the governance of pastoral resources. These new dynamics bring into question the pastoral designation of these areas for transhumant

livestock farmers and those excluded from the system. The vulnerability of pastoral systems is further exacerbated by a large-scale land-grabbing process which is growing in the neighbouring regions of Abalak and Agadez in the form of private ranches (6000 Ha of pastoral lands fenced off by traders: 2012 land survey). These phenomena, seen in other areas of Africa (Bourbouze, 2002; Niori, 1999; Niori et al, 2008), penalise mobile livestock producers and small pastoralists having lost their production capital as a result of droughts in 1970, 1984, and 2009, prompting them to seek out a land base. *“I have two wells in Gadabedji, and I also sunk another well alongside the Gadabedji reserve. Livestock farmers from Abalak and Tchintabaraden in the Tahoua region wanted to buy one of my wells for 6,000,000 FCFA. I refused because I realised that behind them was a whole community of fifty families of livestock farmers wanting to establish themselves in Gadabedji.”* (AT, 22/09/2012)

### 3.3 Changes in agro-pastoral systems and conflicts

One cannot understand these practices and the conflicts arising from them without briefly describing the diversity of these agro-pastoral systems. At one extreme, livestock producers with herds of predominantly sheep travel great distances from Northern Niger to Nigeria and try to preserve family ties or exchange links with the areas they pass through to fulfil their water, fodder, or crop residue needs. At the other extreme, sedentary communities combine diversified livestock production with cereal crop farming, to adapt to changing climatic conditions. Nowadays they tend to store fodder and crop residues for periods of shortage. In between these two extremes, groups of livestock producers migrate short distances while others, particularly Tuaregs and Arabs, also migrate longer distances with their camel trains. Around the town areas, we also see the development of communities who lost large parts of their herds as a result of droughts and who are trying to combine small-scale livestock farming with paid jobs or commercial activities. These different groups compete for access to resources (fodder, crop residues, well water) and only gain access if they are able to assert their land rights or make exchanges with sedentary populations through family networks or by monetary offerings, or even via links with local authorities: all these factors enter into the notion of a fixed land base for the different populations. The complexity of these relationships, exacerbated by ethnic diversity (although this never exactly matches the diversity of systems), leads to intense and multifaceted conflict.

Conflicts related to access to natural resources arise between different actors in Dakoro. The majority (46%) of disputes between crop farmers listed by the land commission from 2000 to 2011 relate to land matters. Disagreements between crop farmers and livestock producers in the department account for 44.66% of disputes. Conflicts between different livestock producers over water sources and grazing areas account for 6.6%, and 2.2% of conflicts involving livestock farmers and other rural operators. Disputes are mainly related to land tenure claims, access to water sources, transhumance corridors, and grazing land (Commission foncière départementale de Dakoro, 2012). These conflicts can be severe:

13.33% of conflicts are fatal in Dakoro. Each year, conflicts between livestock producers and crop farmers result in death, reigniting tensions between communities. In 1991, “a conflict between livestock producers and crop farmers in Toda (Guidan Roumdji) caused the death of 101 individuals which affected us greatly” (AM, 27/11/2011). Attempts at legal and institutional resolutions via land commissions have confirmed their inefficacy, and conciliation by traditional leaders has lost its legitimacy due to the coexistence of three legal systems (traditional, Islamic, and modern) (Gado, 2000; M, 2001; Lavigne Delville, 2006). This failing system of conflict prevention and management has encouraged local actors (NGOs, projects, local elected officials, traditional chiefs, livestock producer associations, decentralised state services) to launch an innovative participative process on a local scale to resolve conflicts and make decisions about pastoral developments and the protection of community spaces.

#### 4. Animal health initiative

The vulnerability of pastoral systems and their protection are the core issues targeted by the SAREL and PASEL projects in the Dakoro department. This vulnerability in Dakoro is linked to weak defensive capacities and the lack of social opportunities for livestock producers (Vias Franck *et al.*, 2004).

SAREL targets technical improvements to livestock production and works with pastoralist organisations. “The objectives assigned to these organisations are: to combat food insecurity, to protect animal health, to manage natural resources and land conflicts, to broker and mediate between projects, NGOs, and local authorities and administrations, to represent livestock producers during decision-making processes, to support the capacities of their representatives and local elected official” (Survey, 2011). These pastoral organisations are structured according to the scale of villages and pastoralist settlements, across female or male groups, comprising livestock producers and crop farmers. From 1993 to the present day, fifteen pastoralist associations and over 200 women’s or mixed pastoralist groups have been established (Surveys, 2012). They are now emerging actors on the local sociopolitical scene. Pastoralist organisations are “the keystone of the maintenance and protection of pastoral production and the livestock producer’s lifestyle” (Marty, 1990). The economic and political context of the 1990s enabled the emergence of these pastoral organisations. While these pastoral movements are recognised in Niger, their role takes on most significance in their manner of highlighting pastoral issues in light of the state’s disengagement from livestock production issues. Indeed, their struggle on local, national, and international scales brings us to examine the deeper meaning of their activity, the path they will take, their functions and their characteristics. They target the root causes of obstacles to the development of livestock production and producers: conflict prevention, resource management, as well as the issue of poor governance through the better integration of livestock producers in decision-making processes. Pastoral associations are the backbone of collaboration between all stakeholders (livestock producers, crop farmers, projects and NGOs, traditional authorities and

administration, local elected officials and rural police forces, rural land commissions, and mixed - women and men’s- pastoralist groups). For projects and NGOs, pastoral associations and their base groups constitute the ideal gateway.



Source: Our field survey, Dakoro 2012

Figure 4. The main reasons for creating pastoral organisations

The figure above shows the deeply-rooted motivations for the founding of twelve pastoral organisations studied in Dakoro. The responses highlight how animal health, and in particular animal mortality resulting from health hazards, the struggle for literacy among livestock producers, the lack of communication between livestock producers and crop farmers, and the mounting number of conflicts are major concerns for pastoral organisations in Dakoro. Their main purpose is to compensate for the vulnerability of pastoral systems in central South Niger.

In the first phase of the SAREL project in 2003, an innovative system for the management of animal health was established in Dakoro in Niger. It comprises local veterinary services (LVS) and networks of community animal health workers according to gender (AE for men and AVAPR for women); “...focussing on local animal health, with the installation of veterinary surgeries built around networks of community animal health workers; these workers are livestock farmers and crop-livestock farmers scattered throughout the department who have been trained in basic animal health and who intervene directly at the request of livestock producers; there is currently a network of 60 workers; this year, to give an example, this veterinary surgery was entrusted by the state with running the vaccination campaign (BA 10/12/2011). The institutional bodies of pastoral organisations become local intermediaries for the community veterinary services. This innovative system establishes collaboration between the project supervisor, LVSs, livestock producer associations (AE and AVAPR), traditional authorities, local elected officials and livestock production services, working in synergy to improve health conditions for livestock producers. “The SAREL project works with livestock production services, private para-veterinary agents, and traditional authorities in monitoring, training and supervising livestock farmers in the

department. We are gradually seeing significant improvements in the behaviour of livestock producers” (MM, 28/09/2012). In demonstrating three innovative practices, the project helps improve techniques of herd management and limits the risk of livestock loss:

- food storage using fodder and millet stalk conservation methods;
- strategic use of weaker animals for domestic functions;
- vaccination of animals by community veterinary workers

These operations help protect herds against epizootic disease and drought, “but by raising awareness of the AREN and SAREL projects, we train livestock producers to combine crop and livestock farming, namely to preserve millet stalks using chemical treatment, i.e. urea; using 5kg of urea diluted in 100 litres of water, stalks are bundled and sprayed with 100 litres of water before being left to dry in a shaded pit for a week. This product is fed to adult grazing animals rather than suckling animals. Concerning the dose: for the first week the animal is given two thirds what it is used to eating and the one third of the treated stalks which it is not used to eating, for the second week it is given equal parts, in the third week it’s the opposite of the first week. We target animals; the old ones, the studs, oxen used for water withdrawal, gestating females, etc.” (AA 19/12/2011).



Figure 5: Interview with pastoral group of AREN Bokologi (Dakoro, 2012)

The project also arranges study tours with pastoral organisations in the sub-region, on the preservation of fresh grass for a transfer of technology in fodder management. Local veterinary services have helped increase the number of vaccinated animals. “In my area of expertise on animal health, I know that there has been a lot of progress in that from 2003 to today, SAREL stimulated the privatisation of veterinary services. Looking at the evolution of veterinary services, livestock farmers were reluctant, but if my memory serves me correctly, thanks to awareness campaigns, the number of vaccinated animals did not exceed 9000 heads per year whereas today they number over 50,000 heads per year; which means

that livestock farmers no longer need to travel dozens of kilometres to find an animal health worker; they have one at hand or in a neighbouring community. As I was saying, a lot of that is thanks to traditional chiefs and pastoral associations” (BA, 10/12/2011). These initiatives improve livestock yield, change habits among livestock farmers, and reduce the risk of spreading epizootic disease in the area. The health information system is developing and the sources of outbreaks are more rapidly identified. Furthermore, livestock farmers are learning to administer animal health treatments under the supervision of professionals and field technicians, and have access to community veterinary surgeries close at hand. “The introduction of village animal health workers is an effective way not only to extend preventive animal health services to less densely populated areas, but also to provide care and preventive measures for non-epidemic illnesses, on a cost recovery basis” (Rass, 2004). In order to curb other factors of livestock producer vulnerability, SAREL has set up zootechnical supply stores and grain banks in pastoral villages and settlements, of which the management is entrusted to committees established by the project.

## 5. Land tenure security initiatives

The PASEL initiative aims to improve security for communal land, to intensify agro-pastoral production and to strengthen pastoral organisations. Accordingly, the project works with structures created by pastoral associations (groups) and administrative and traditional authorities to install security and avoid conflict. The local system of land tenure regulation defines itself as “all public or private actors, individuals or groups, that play an effective role in decisions involving land tenure (allocation or confirmation of rights, registration, arbitration) without predicting their legal status in their relations of complementarity, competition or synergies” (Lavigne Delville, 2002). In the Dakoro department, a framework for cooperation has existed since 2005, born of the difficulties experienced by formal institutions in managing conflicts between crop farmers and livestock producers and in undertaking undisputed initiatives in matters of development and public decisions. Representatives of the different technical services, crop farmers, livestock farmers, traditional chiefs, mayors and pastoral associations work together to identify, create and manage water sources and transhumance routes on the basis of local knowledge and consensus between stakeholders. Traditional chiefs, key partners in the prevention and management of conflicts, work alongside the projects to install lasting peace (Sidikou, 2003). “Similarly, pastoral associations can play a role in perpetuating the actions of projects under local government supervision” (ML, 20/10/2012); “With PASEL, we have worked closely with the departmental land commission to mark out transhumance corridors along the north-south axis as far as Nigeria. I was the representative of these 10 canton chiefs in the Maradi region, on the west coast; we marked out transhumance corridors from the Tarka Valley to Nigeria” (LD, 26/11/2011). This network contributes to the regulation of pastoral uses and practices in management. It proceeds by defining the problem collectively, incorporating different skills, mobilising objects, actors,

negotiations and role definitions. Land tenure security relies on a participative process. On the basis of the discourse of the actors and their perceptions of the initiatives and innovations of the projects, our analysis brings to light the impact of these actions in the Dakoro department. This process has enabled the resolution of conflicts concerning access to and control of resources. The pastoral and institutional stakeholders are gradually taking account of social values in the definition of actions concerned with the preservation of territory and the consolidation of peace. In total, there have been 800 km of corridors created by PASEL and 47 pastoral enclaves demarcated out of the 64 existing in the department (Cofodep, 2012) and over 71 intercommunity forums and workshops and 128 committees to monitor transhumance corridor set up.



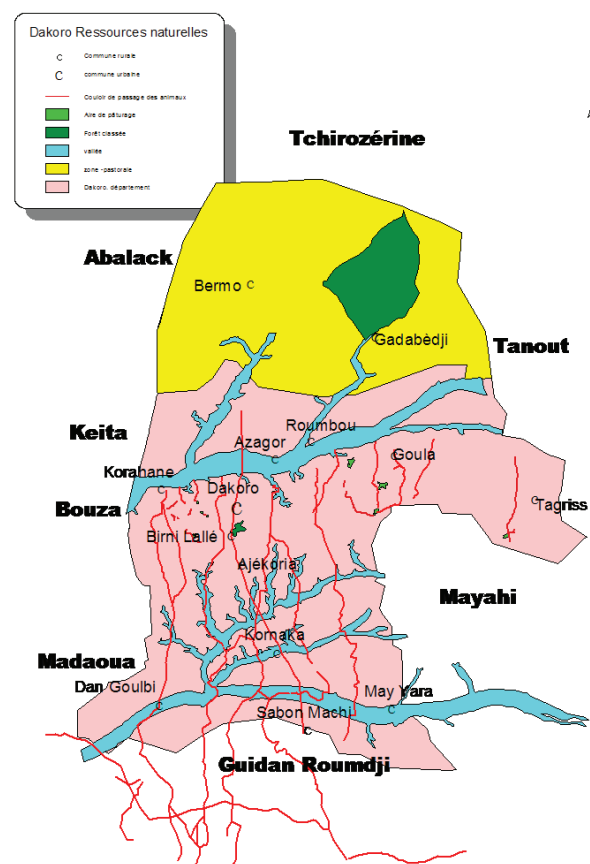
**Figure 6.** Intercommunity forum in pastoral zone (breeders, customary chief, technical services, local elected officials, farmers associations, local NGOs and development projects)

This work has contributed significantly to reducing conflicts between livestock producers and crop farmers. *“Thank God and from 1998 to today 2012, there have been fewer conflicts over transhumance corridors and conflicts between crop farmers and livestock producers, with PASEL, we have conducted studies recently on the situation of conflicts over transhumance corridors, we have reached the result of zero conflict over demarcated transhumance corridors”* (HM 25/09/2012)

Before the creation of these international and secondary corridors in the Dakoro department, transhumant livestock producers experienced many difficulties moving to the North in the pastoral zone during the wet season. The transhumance routes were being encroached upon by crop farmers and access to waterholes and pastoral enclaves was completely blocked.

These local conflict management initiatives in Dakoro, despite operational progress in the field, function in the Sahelian context of dwindling resources and multiple stakeholders with conflicting interests. Reconciling these outlooks and resolving the problem of pastoral resource management in the long term requires the mastering of methods of coordination and other strategies developed by actors during the process of implementing collective actions (Kebir and Crevoisier,

2002). Dakoro’s agro-pastoral zone is in the throes of environmental, social and political change. The interference of new stakeholders and the failure to conform to traditional or modern legislation lead on one hand to capitalist strategies (ranching) and on the other to the disorganisation of traditional control and management systems for these resources. Today we are witnessing a sort of duality in the resolution of conflicts from the highest to the lowest levels, between the Ministry of Agriculture and Livestock, the chiefs of sedentary cantons and the chiefs of livestock producer groups; and between livestock producers and crop farmers. This serves to crystallise the social relations between the actors and reignite land tenure conflicts in Dakoro, where institutional and organisational innovations are striving to reduce the environmental risks and socio-economic uncertainties of the agro-pastoral populations.



**Figure 7.** Map of the transhumance corridors demarcated by PASEL (Commission foncière départementale de Dakoro, 2011)

## 6. Conclusion

The processes initiated by the two development projects in Dakoro promote the participation of local stakeholders and pastoral land tenure governance. They demonstrate how taking social values into consideration and making livestock farmer associations and traditional land management institutions accountable offer better chances of bringing development projects and consensual, negotiated local initiatives to a successful conclusion. The disengagement of the state and

privatisation of animal health services in recent years have encouraged the emergence of local initiatives operating in synergy with the actions of development projects and pastoral organisations. However, these initiatives remain dependent on local authorities. With little transparency in their choice of members, they are difficult to sustain beyond the completion of the projects, because their role is not firmly established and their functions are poorly institutionalised. These local innovations therefore deserve to be studied more closely to gain an understanding of the forms of engagement of pastoral organisations alongside these projects and their identity on a local scale for the sustainable governance of resources, representativeness and the accountability of all stakeholders. These emerging associations are now recognised as legitimate intermediaries by projects and NGOs in the implementation of operational actions in the field. Their authoritative position is indisputable proof of their ability to influence public decisions. Their importance also leads to conflicts of power between traditional and administrative authorities at the local level. Nevertheless, the discourse of pastoral associations must not conceal certain truths in their modes of operation, the internal organisation of livestock farmers and constitution of groups. On one hand, these associations do not appear to be wholly representative of stakeholders according to their ethnic makeup and are a reflection of social affinities. On the other hand, conflicts of interest between the pastoral associations themselves restrict the margins of manoeuvre and their scope of action given their limited capacities in terms of funding and social mobilisation. Will they become instruments of public policy alongside development projects or actual instigators of development themselves? This article does not claim to answer these questions but simply aims to highlight the dynamics of the actions between local stakeholders and local institutions in land tenure security and animal health.

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