Institutions for collective action among settled fulani agro-pastoralists in Southwest Nigeria

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Abstract: This study identifies institutions for organizing collective action among settled Fulani agro-pastoralists and examines their activities in fostering collective actions. The justification is that local institutions are avenues through which local society organizes itself. Four Fulani communities were selected purposively in Ekiti State and data were collected from 55 settled pastoralists through informal interviews and focus group discussion. The analysis of data collected is based on qualitative analysis and presentation. Two major forms of local institutions were identified: the Fulani traditional council (FTC) and the Fulani herders' association (FHA). FTC is a leadership institution and has three major levels of influence: the Jawmu saare-the head of the household; Mawdo-camp leader; and Ardo-Community leader. These organize members in a way that set goals for the collective actions are achieved. FHA regulates grazing activities and reduce incidence of conflicts, among other functions. A normalised probability scoring of responses on the effectiveness of collective action in securing access to land reveals a 92% probability through negotiation and 77% probability through conflict management. Formal and informal local meetings were observed as the major activity for fostering most collective actions. The institutions will become more relevant to socioeconomic development of Fulbe communities in the region if their activities can be coordinated towards policy negotiation with local governments, advocacy efforts, and livelihoods support and development.

Keywords: Institutions, collective Action, Fulani, Agro-Pastoralists, southwest Nigeria

Background Information

Pastoralists in southwest Nigeria have come a long way in their social relations among each other and also with their host communities. Historically, the migration of pastoralists to this region, particularly to the southern Guinea area of the region, dated back to the end of 19th century between 1882 and 1890, during the First Franco Dahomean war (Alpern, 1998; Fabusoro, 2006). Over the years, therefore, the pastoralists have become integrated into the socio-cultural system of the region. Although there are several pastoral groups in different parts of the region, with varied years of settlement, Omotayo et al. (2005) reported a changing lifestyle for majority of pastoralists and an evidence of permanent settlement. In Nigeria, as in other places in West and Central Africa, pastoral production is based on grazing animals on natural pastures with seasonal movement of families and animals from one place to another in response to availability of fodder, crop residues and water for stock needs, or as an evasive strategy against threats of animal diseases, pests or personal security (Islam, 2001; Fabusoro, 2006). This mode of livestock production and management is becoming increasingly difficult or nearly impossible for lack of access to land in the wake of degrading grazing resources, conflict as a result of farm encroachment and lack of policy support to protect grazing routes.

The security of livelihoods of Fulani pastoralists hinged mainly on the health and wealth of their cattle. The health and wealth of the cattle herd depends largely on availability of and access to forage pastures and water. In the mean time, the integration of Fulani into the fringes of southern-forest zone has major implications on access to land and pasture for grazing. Overcoming this livelihood challenge under a peaceful environment is a factor for securing pastoral livelihoods and successful social integration. The pastoral Fulanis are not unaware of this challenge and have developed certain mechanism for coping and handling it. Although, pastoralism is highly resilient and

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adaptable to hostile environments, the resiliency of the Fulani in coping with livelihoods challenges has been observed to be associated with collective action among them (Fabusoro et al., 2008). The collective actions utilised in coping with the dynamics of their social environment is a consequence of local institutions governing resource use and negotiating access amidst changing social and political environments.

Institutions are structures and mechanisms of social order and cooperation governing the behaviour of a set of individuals. Institutions are identified with a social purpose and permanence, transcending individual human lives and intentions, and with the making and enforcing of rules governing cooperative human behaviour. The aim of this paper is to highlight local institutions governing the use of land resources among pastoralists and negotiating access to land and grazing resources in the region. This is against the backdrop of the need to understand social mechanisms for constructing peaceful co-existence between the Fulanis and their host communities, which is a significant factor in livelihood security and improvements. This paper is guided by the following specific objectives:

- i. To examine local institutions in pastoral communities in the study locations
- ii. To highlights the institutions' functions in organizing collective actions and tools used in fostering collective action

Generally, most grazing lands in the region are under the customary land rights regime, thereby regulating the use of land, causing restrictions to grazing and use of land for crop production (Fabusoro et al., 2008). This limitation makes Fulanis vulnerable to livelihood insecurity and impoverishment. The direct effect of this is the loss of major productive assets (livestock). This affects households' livelihood resource stock and reduces capability for building coping mechanisms, increases pressure on resources, decreases options for collaboration and exchanges, rises raiding, banditry and overall insecurity (Nori et al., 2004). The significance of cattle is evident from the following *Fulbe* proverbs: "If one harms the cattle, one harms the *Fulbe*," "If the cattle die, the *Fulbe* will die," and "Cattle surpass (in the widest sense) everything, they are even greater than one's father and mother" (Hopen, 1958:26).

Conceptual overview: Collective action and the role of local institutions

Olson (1965) and Hardin (1982) have done pioneering work in developing theories of collective action and many others have been building on their work indicating that collective action can be organized for different purposes. Knox et al. (1998) and Place and Swallow (2000), assert that collective action is organised as an incentive for technology adoption; Ostrom (1990) submits that it is for designing and enforcement of institutions; Ngaido and Kirk (2001) posits that it can be useful for improving management of rangeland resources through institutional change. In summary, the scholars agree that the rationality of collective action varies from situation to situation and depends upon the specific functions describing the cost of the good, its value to the individual, the probability that the good will be provided without his contribution and the effect (if any) of group size on the other functions (Frohlich and Oppenheimer, 1970; Frohlich et al., 1975).

Many authors hold a common position in addressing the role of institutions in influencing human organization at different levels for collective action in order to improve societal welfare. The work of Bastiaensen et al. (2005) reveals that local institutions can pave the way to poverty reduction or reproduction by enhancing people's representation in the political process and the way such a process gives guarantee to their resource entitlements. The view of Umar and Kankiya (2004) is that through their local institutions and regulations, local communities can ensure the sustainable management of common property resources and equitable sharing of costs and benefits that is geared towards improving members' livelihoods. Farvar (1997) also affirms that local institutions are always capable of identifying their own problems and need, analysing and categorising them, and identifying priorities.

Institutions are often referred to as "rules of the game" (North, 1995), meaning the social norms and traditions that establish what types of behaviour are normal in society. Similar to it is the definition of Bromley (1989:22): 'institutions are the rules and conventions of society that facilitate

coordination among people regarding their behaviour'. Uphoff (1997) also defines institutions as complexes of norms and behaviours that persist over time by serving some collectively valued purpose. Institutions may be formal or informal: where formal institutions stipulate rules such as constitutions, laws and property rights, while informal institutions are generally agreed upon arrangements or rules of behaviour such as sanctions, taboos, customs, traditions, and codes of conduct (North, 1995). Local organizations and associations or groups, such as women's groups, farmer associations, and savings and credit arrangements are at different stages of "institutionalization".

Local institutions are of concern because of their linkages to household livelihood strategies and outcomes, for instance, in providing access to assets, sources of income, reducing vulnerability, and mitigating adverse consequences of economic policies, civil strife and other external shocks. Institutions are humanly created formal and informal mechanisms that shape social and individual expectations, interactions, and behavior. They can be classified as falling into public (bureaucratic administrative units, and elected local governments), civic (membership and cooperative organizations), and private sectors (service and business organizations) (Uphoff and Buck, 2006).

According to Messer and Townsley (2003), local institutions become over time, the repository of indigenous knowledge systems and the foundation by which local society organizes itself. These rules are continually and dynamically updated, sometimes in diverse and contested ways. Local institutions incorporate many different kinds of indigenous organizations and functions. These include: village level governance; accepted methods of community resource mobilization; social and mutual aid societies; security arrangements; asset management; conflict resolution councils; management committees for infrastructure and sector services; conflict and legal adjudication committees; livestock and agricultural production cooperatives; tontines and savings federations; religious associations; music societies; and lineage organizations, among others.

Based on Olson's Logic of Collective Action, as long as individuals stay unorganised, they cannot achieve a joint return as high as they could have received if they had organised in some ways to undertake collective action (Ostrom, 1990). Collective action therefore is one of organising, through institutions, by which individuals adopt coordinated strategies to obtain higher joint benefits or reduce their joint harm. This provides a basis for this study that Fulanis will be more organised and gain more access to grazing land in their host Yoruba communities in southwest Nigeria with effective institutions for organising collective action. Ostrom (2008) reports that she has repeatedly found that resource users, who have relative autonomy to design their own rules for governing and managing common-pool resources, tend to achieve better outcomes.

Research Design

Of the six states in southwest Nigeria, Ekiti State was selected purposively for the study due to higher level of restrictions placed on Fulanis for grazing and land use (Fabusoro, et al 2008). One of the 16 local governments, Oye local government area was selected for the study based on the higher number of settled pastoralists than other locations (Fabusoro, 2006). Four communities, namely, Ayede, Ootunja, Itaji and Oye were selected purposively. A complete census of settled pastoralists in the communities was targeted but 55 of the 102 identified households heads were available at the time of the interviews. The 55, representing 53.9% of the population were therefore selected purposively. Focus group discussions (FGD) and structured checklists were used to collect data. The FGDs provided rich opportunities for cross validating of data and obtaining qualitative information. The FGDs were held in all the communities, with community leaders (Ardo/Seriki), household heads and other community members. The analysis of data collected is based mainly on qualitative analysis and presentation. Table 1 below shows the distribution of pastoral households identified and selected for interview.

Table 1. Number of identified and selected household heads for interview

Community	Identified number of pastoral	Number selected for the	
	households	study	
Ayede	36	24	
Ootunja	12	4	
Itaji	22	15	
Oye Total	32	12	
Total	102	55	

Results and Discussion

Local institutions in pastoral communities

Information obtained through the FGD reveals that there are two major forms of local institutions in the study locations. These are the Fulani traditional council (FTC) and the Fulani herders' association (FHA), which is a branch of *Miyetti* Allah Cattle Breeders Association (MACBAN).

FTC is a form of leadership institution in the study areas, regulating behaviours and setting rules and regulations among pastoralists on grazing, farming and social relations. These institutions are in different level of influence as shown in Fig. 1 below.

- i. Jawmu saare, the head of the family household, also interpreted as Megida in Hausa language. The family structure in Fulani community is the extended family type and the family head is the eldest of a number of siblings living together. As observed in the study locations, the number of households under each Jawmu saare depends on the size of the extended family. It was however found that the average number of families under the Jawmu saare is higher in Ayede (8) than other locations: Oye (5), Itaji (4), Ootunja (3). The reason adduced for this is the level of restrictions imposed on land use by host communities.
- ii. Mawdo (the big one), controlling the camp, wuro. Wuro consists of a number of households that have chosen to reside together and who recognize a common leader, often called the Mawdo. In the study location visited, the Mawdo has a higher level of influence than Jawmu saare. The number of Jawmu saare in each camp (wuro) also depends on the land access. Therefore, more wuro was identified in Ayede (5); four was identified in Oye; two in Itaji and only one at Ootunja.
- iii. Ardo (leader, interpreted as Seriki in Hausa language). The Ardo is the leader of a lineage group or a community. He is expected to be the spokesman of the group in their dealings with the sedentary Yoruba population. His major duty is to coordinate local activities and lead in most community functions and meetings. He relies on information obtained from Jawmu saare and Mawdo in the community. Information gathered during the FGD indicates that there are several layers of Ardo as groups of pastoral communities within the same local government or state have alliance with each other and then produce higher levels of authorities and influence.

The Fulani herders association as revealed by the pastoralists during the survey is organised mainly by younger members of the communities who are still actively involved in herding of cattle. Although, all household heads are members of the association, the older members do not participate in day-to-day running of FHA. The respondents informed that the association is a lower level of institution that gives some leadership responsibilities to the younger members of the communities while the community leaders (*Mawdo* and *Ardo*) serve as patrons. The roles of Fulani herders association are to regulate grazing activities in such a way that it will reduce incidence of conflicts, and investigate and intervene in cases of arrest, farm encroachment, raiding and banditry in local communities. They also provide information to members on market opportunities as well as grazing restrictions in communities and grazing rules within and outside communities to forestall conflicts. They work under the bigger umbrella of Miyetti Allah Cattle Breeders Association of Nigeria (MACBAN), which is the earliest and most renowned and widespread pastoralists organisation in Nigeria. Figure 1 shows the levels of authority and sphere of influence of the pastoral institutions.

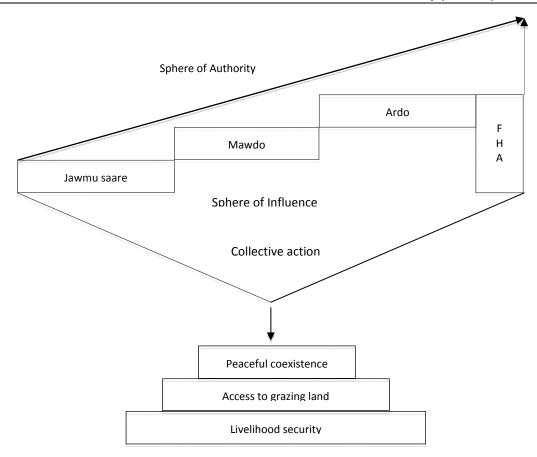


Figure 1. Conceptual representation of Fulani Pastoral Institutions showing spheres of authority and influence.

As shown, the *Jawmu saare* has the lowest level of authority and as well smaller sphere of influence. Within the sphere of influence, the institutions interact to produce collective action, which is used in achieving three major outcomes: peaceful coexistence with host communities, access to grazing resources and livelihoods security. In my observation, FHA operates at all the three levels because every household head in the communities constitutes its membership.

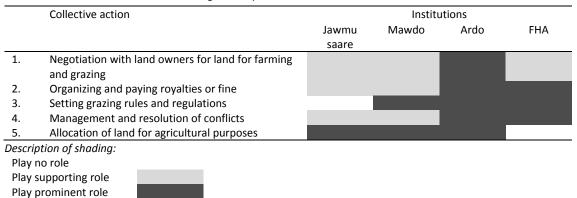
The activities of these two institutions (FTC and FHA) are interwoven but have different functions and goals. While FTC work at each household, camp and community to keep day-to-day living peaceful and as well sustain commitment towards negotiation with host communities and coordinate overall behaviour and livelihoods activities towards peaceful co-existence, FHA focuses mainly on grazing issues such as gaining access to grazing locations, participating in markets, intervening in conflict and responding to livestock health.

Functions of local institutions in collective action

The functions of the identified local institutions in fostering collective action were investigated. Information on this was collected through the FGD and personal interviews. Based on the conceptual overview given, the need for organizing collective action is due to the need for coordinated activities towards the common goal of land accessibility and livelihood security. In the four communities, five forms of collective actions were identified. Table 2 shows the collective action and the institutions involved. *Ardo*, having the highest level of influence and authority (Fig. 1), plays prominent roles in fostering collective action. Being a leadership institution, it is expected to organize members in a way that set goals for the collective actions are achieved. *Jawmu saare* plays supporting roles in most cases because of its low sphere of authority and influence, except in use of land for agriculture where he leads as the household head. Areas where FHA plays prominent roles are directly related to its functions in the pastoral communities.

As we observed in the four locations, host communities allocated land for agricultural purposes collectively for members of *wuro* and the land are re-allocated to each *Jawmu saare* level where agricultural activities are done collectively. Criteria for land allocation to each *Jawmu saare* is based on the number of nuclear families under each. We found that the land allocation to *Jawmu saare* is very subjective but based on principle of fairness and equity.

Table 2. Collective action identified among settled pastoralists.



The main function of the institutions in organizing collective action is negotiating with local landowners. This is done for most of the issues relating to land for grazing or farming, land for erecting huts, during cases of encroachments among many others. Depending on the scale of the issue and the group it affects, usually *Mardo* and *Ardo* carry out the function and their council members among which are the *Jawmu saare*. In the study locations, a number of factors were found responsible for some successes achieved by the local institutions. These are:

- i. The presence of shared values and norms that regulate behaviours and pastoral activities;
- ii. High hierarchical structure with interactive leadership and adequate cohesion both within clan and community members and between them and the leadership;
- iii. The critical dependence of Fulani livelihoods on livestock health and wealth which in turn depends on ability to gain access to grazing resources

According to Campbell and Shackleton (2002), for community institutions to function successfully, several conditions must be met among which are: the group must address a felt need and a common interest (such as land accessibility for cattle grazing); the benefits of participating in activities of the community for individuals must outweigh the costs; the institution must have the capacity, leadership, knowledge and skills to manage the task; and must own or enforce its own regulations.

Although there were differences among the communities with respect to their functions in organizing collective action, the institutions in each community have primary responsibilities of bringing the people together and fostering harmonious living in each camp. In the day-to-day decisions and management of resources, the traditional council functions in the community. According to information obtained from the pastoralists, the collective action becomes important to foster good relationship between them and their hosts and as well organise themselves in a way that will portray good neighbourliness.

Effectiveness of collective action in securing land access

Table 3 indicates the effectiveness of collective action in securing land access for the settled Fulani pastoralists. The effectiveness was measured as an ordinal variable against pastoralists' perception of reduction and/or removal of land access restriction through the collective action. The normal distribution scores were converted to Z-scores for standardization. The probability values indicate the probability that a certain percentage of respondents will select the respective collective action as effective in securing land access. The Table reveals therefore that negotiation with landowners had the highest probability to secure more access to land for grazing and farming purposes.

Table 3. Percentage distribution of settled pastoralists on effectiveness of collective action for securing land access (N=55).

	%		
Collective Action	*Effective	Z score	Probability
Negotiation with land owners for land for farming and grazing	82.5	1.42	0.92
Organizing and paying royalties or fine	50.8	(0.33)	0.37
Setting grazing rules and regulations	55.8	(0.06)	0.48
Management and resolution of conflicts	70.0	0.73	0.77
Use of land for agricultural purposes	25.0	(1.76)	0.04

The values in parentheses indicate negative z values;

The result implies that there is a 92% probability that Fulani pastoralists will gain more access to land in the State through negotiation and a 77% probability through conflict management. With grazing being important to livelihood security of the Fulani (Fabusoro et al., 2008), negotiation as a form of social relations becomes an important collective action for securing land access. Hampshire (2002) found among the pastoralists in the Sahel region that long-term livelihood security is very dependent on social networks. Social networks are an important way of spreading risk and coping with vulnerability. An account of one of the pastoralists informed that if they become more organized in dealing with issues relating to grazing and conflict, they would gain more confidence on the part of the hosts and possibly have more access to land.

Activities for fostering collective action by the institutions in the study locations

Table 4 shows some activities that are required for fostering collective action among the settled pastoralists. These activities are not mutually exclusive and a particular activity can be used to achieve more than one collective action. Meetings were found to be common activities in pastoral communities. It was observed that while there were formal meetings of the leadership council (FTC), there were also many informal meetings for sharing information, seek opinions and take decisions. We observed that every time the elders sit together either to eat or chat, it is always an avenue for discussing an important matter. We also observed that every time a first time visitor comes into the camp, a meeting of the elders or household heads would be convened immediately. The meetings serve as avenue for discussing issues, sharing information, taking positions, giving instructions, contributing money, breaking kola¹, delegating authorities, establishing necessary contacts among many others.

For all these activities, the institutions identified play significant role in organizing these activities in order to foster collective action. The activities serve as an avenue for the institutions' influence and authority to be asserted. Some, such as bailing a member of the camp in case of police arrest is to showcase their ability to support members. In cases of conflict², we observed that Fulani conduct independent investigations through the *Mawdo* and the FHA and their any intervention is carried out through these institutions except it is major issue that will involve the *Ardo*.

^{*}Multiple responses obtained

¹ Kolanut breaking is a significant event among Fulani pastoralists as it signifies a seal on important decision. While Kolanut breaking is for occasions such as weddings and naming ceremonies among other tribes in Nigeria, kolanut breaking among Fulani, based on my observation, is a seal of decision taken for or against a person, matter or place. If someone is barred from the community, a kolanut breaking will be performed representing a seal on the decision and a strict warning that no one in the community should relate with the person until another kolanut breaking is performed to invalidate the decision earlier made. It can also be done to mark an end to a controversy or seal an agreement to commence a relationship.

² I must provide information that the incidence and severity of conflict among pastoralists and sedentary farmers in this State is low. Most cases of conflicts are resolved amicably among Fulanis and host communities. Only few cases of police intervention have been recorded in the last 5 years since I have been conducting field survey in the State.

Table 4. Activities for Collective action.

S/n	Collective action	Collective activities
1.	Negotiation with landowners for land for farming	Local meetings
	and grazing	 Information sourcing and sharing
		 Participation in local markets
		 Participation in local events of host communities
		 Networking among other Fulani groups
2.	Organizing and paying royalties or fine	 Meetings
		 Financial contribution through payment of dues
		• Levies
3.	Setting grazing rules and regulations	 Meetings
		Breaking of kolanut
4.	Management and resolution of conflicts	 Investigations
		Meetings
		Appeal
		Bail in case of police arrest
5.	Use of land for agricultural purposes	Collective farm

Conclusion and Recommendations

This study has shown the relevance of institutions for building collective action among pastoral households, useful for securing access to land and ultimately for livelihood security. The institutions have been found to have contributed to land access through negotiation with host communities. Although there were differences among the institutions with respect to their functions in organizing collective action, the institutions in each community have primary responsibilities of bringing the people together and fostering harmonious living in each camp. Also, formal and informal meetings have been used as a major activity for fostering the collective actions. The meetings serve as avenue for discussing issues, sharing information, taking positions, giving instructions, contributing money, breaking kola, delegating authorities, establishing necessary contacts among many others. The institutions will become more relevant to socioeconomic development of Fulbe communities in the region if their activities can be coordinated towards policy negotiation with local governments, advocacy efforts, and livelihoods support and development. The organised efforts of the institutions for peaceful coexistence will further reduce incidence of internal conflict. It is therefore recommended that settled pastoralists invest more on these institutions for collective action that are related to building social coherence, peaceful coexistence with host communities, promote livelihood development and improved socio-political networking

References

- Alpern, S.B. (1998) *Amazons of black Sparta: the women warriors of Dahomey.* New York: New York University Press, 280pp
- Bastiaensen, J., T. De Herdt, and B. D'Exelle, (2005) Poverty reduction as a local institutional process. *World Development* 33(6): 979-993.
- Bromley, D.W. (1989) Institutional change and economic efficiency. *Journal of Economic Issues*, XXIII (3): 735-759
- Campbell, B. and S. Shackleton (2002) The organisational structures for community-based natural resources management in southern Africa. *African Studies Quarterly*, 5(3): (online), URL: http://web.africa.ufl.edu/asq/v5/v5i3a6.htm
- Fabusoro, E. (2006) *Property rights, access to natural resources and livelihoods security among settled Fulani agro-pastoralists in south western Nigeria.* Technical Research Report Submitted to International Foundation for Science, Stockholm, December 2006

- Fabusoro, E., T. Matsumoto and M. Taeb (2008) Land rights regimes in southwest Nigeria: Implications for land access and livelihoods security of settled Fulani agro-pastoralists. *Land Degradation and Development* 19(1): 91-103
- Farvar, M.T. (1997) Decentralisation and natural resource management: Issues in rural development.

 Presentation made at the Food and Agriculture Organization (FAO) Technical Consultation on Decentralisation, Rome, 16-18 December 1997
- Frohlich, N. and J.A. Oppenheimer (1970) I get by with a little help from my friends. *World Politics* 23(October): 104-120
- Frohlich, N., T. Hunt, J. Oppenheimer and R.H. Wagner (1975) Individual contributions for collective goods: alternative models. *Journal of Conflict Resolution* 19(June): 310-329
- Hampshire, K. (2002) Networks of nomads: negotiating access to health resources among pastoralist women in Chad, Social Science a Medicine 54 (2002) 1025–1037
- Hardin, R. (1982) Collective action. Baltimore: The Johns Hopkins University Press, 264pp.
- Hopen, C.E. (1958) The pastoral Fulbe family in Gwandu. London: Oxford University Press
- Islam, I. (2001) From nomadism to sedentarism: An analysis of development constraints and public policy issues in the socioeconomic transformation of the pastoral Fulani of Nigeria. http://www.gamji.com/fulani1.htm last access on 16/12/2009
- Knox, A., R. Meinzen-Dick and P. Hazell (1998). *Property rights, collective action and technologies for natural resource management*. SP-PRCA Working Paper No. 1, International Food Policy Research Institute (IFPRI), Washington DC, USA.
- Messer, N. and P. Townsley, (2003) *Local institutions and livelihoods: guidelines for analysis.* Rome, Rural Development Division, Food and Agriculture Organisation of the United Nations
- Ngaido, T. and M. Kirk (2001) Collective action, property rights and devolution of rangeland management: selected examples from Africa and Asia. In: R. Meinzen-Dick, A. Knox, and M.D. Gregorio (eds.) *Collective action, property rights and devolution of natural resource management: Exchange of knowledge and implications for policy.* International Policy Workshop on Property Rights, Collective Action and Devolution of Natural Resource Management, June 21-25, 1999, in Puerto Azul, the Philippines.
- Nori, M., J. Switzer and A. Crawford (2004) *Herding on the brink: Towards a global survey of pastoral communities and conflict.* An occasional working paper from IUCN Commission on Environment Economic and Social Policy
- North, D.C. (1995) The new institutional economics and third world development. In J. Harris, J. Hunter and C.M. Lewis, (eds.) *The new institutional economics and third world development.* London: Routledge, pp. 17-26
- Olson, M. (1965) *The logic of collective action: Public goods and the theory of groups.* Harvard: Harvard University Press, 186 pp.
- Omotayo, A. M., M. A. Dipeolu, and U. F. Ekpo, (2005) *Health consequeses of lifestyle changes among pastoralists is southwest Nigeria*. A Research Report submitted to the Wellcome Trust and the University of Agriculture, Abeokuta, April 2005
- Ostrom, E. (1990) *Governing the commons: The evolution of institution for collective action,* New York: Cambridge University Press, 302pp
- Ostrom, E. (2008) *How do institutions for collective action evolve?* Annual Neale Wheeler Watson Lecture presented at the Nobel Museum in Stockholm, Sweden, April 12, 2008.
- Place, F. and B. Swallow, (2000) Assessing the relationships between property rights and technology adoption in smallholder agriculture: A review of issues and empirical methods. CAPRi Working Paper 2. IFPRI.
- Umar, B. and H. Kankiya, (2004) Beyond the poverty alleviation programmes: Towards a new framework for managing natural resources in Nigeria. Presentation made at the Annual Conference on Tropical and Subtropical Agricultural and Natural Resource Management (TROPENTAG), 5-7 October 2004, Agricultural and Horticultural Faculty, Humboldt-Universität zu Berlin.

- Uphoff, N. (1997) *Institutional capacity and decentralization for rural development*. Presentation made at the Food and Agriculture Organization (FAO) Technical Consultation on Decentralisation, Rome, 16-18 December 1997
- Uphoof, N. and L. Buck (2006) Strengthening rural local institutional capacities for sustainable livelihoods and equitable development. Paper prepared for the Social Development Department of the World Bank, Washington, DC, Cornell, Cornell International Institute for Food, Agriculture and Development (CIIFAD)