

Analysis of indigenous institutions for collective action in fostering co-operation for sustainable land use among pastoral communities of Ogun State, Nigeria

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Abstract

Indigenous institutions have been perceived as the nested structures crafted to regulate access of natural resources among different rural users. Therefore, there is a need to bring to the fore the contribution of indigenous institutions in promoting collective action in the effort at fostering co-operation and collaboration among settled Fulani Agro-pastoralists in Ogun State, Nigeria. The leadership institutions in pastoral communities were found to be involved in the process of making authoritative decisions in respect of land access and sustainable use of natural resources in pastoral communities. This form of collective action becomes important as it fosters a good relationship between the pastoral groups and their hosts. Securing sustainable land resources access and use for cattle and crop production in pastoral communities is dependent on the prevalence of strong local institutions for collective action (co-operation and collaboration). Purposive sampling technique was used to select 435 respondents. Data were collected using a Semi-structured Interview Guide. Fulani respondents maintained that some of the challenges facing them were loose collaboration/contradiction between statutory and indigenous institutions, intrusion of migratory pastoralists (*Bororo*), illegal entry of new herders, lack of policy support by government to settle Fulani agro-pastoralists. The Spearman-rho correlation analysis revealed that there were significant relationships ($p < 0.01$) between local rules ($r=0.252$), leadership institution ($r=0.234$) and conflict management. The study concludes that negotiation and self-regulation are important collective action processes in promoting co-operation in the pursuit of mutually benefitting goals for gaining access to land and as well as ensuring sustainable use of biophysical environment for food security and poverty reduction. Therefore it is recommended that the leadership institutions should be strengthened and indigenous rules be formalized among different users to enhance their effectiveness in fostering co-operation and reducing biophysical deterioration.

Keywords: Fulani agro-pastoralists; indigenous institutions, collective action; co-operative; sustainable land use.

A. Introduction

In recent years much attention has been focused on the need for wise use of land which connotes sustainable land use of land in rural society especially in the unique crop-livestock mixed production system where the increased demand for land is occasioned by the need to make available food of crop and animal origins to ensure food security and generate income on sustainable basis. In many parts of the world, particularly in Ogun State, Nigeria where agricultural land is used for mixed crop-livestock production, there appears to occur intense competition for and an intensification of land use necessitating co-operation, collaboration and sustainable land use among settled agro pastoralists' and their host Yoruba communities (Omotayo, 2003, Fabusoro *et al.*, 2008). Consequently, a key concern in the long run is the

sustainability of the land resources in this mixed crop-livestock productions system without compromising peaceful coexistence of land resource users.

Indigenous Institutions are locally developed rules, regulations, values and informal arrangements such as (leadership) that are regarded as adaptive solutions to resource management problems at the grass-root level. In various ways, leadership institutions, collective action and land use interact to affect the operation of rural households in developing countries. Leadership in local communities is about governance and governance involves the process of making authoritative decisions in relation to who gets what, when, where and how. Since land resources are the dominant factors of production in crop-livestock production system, leadership primarily revolves around management of land use. Therefore, when local leadership is weak, such weakness may not permit co-operation that can foster sustainable land use. Ostrom (2000) affirms that the propensity of groups to act in their collective or joint interest in promoting co-operation and collaboration is dependent to a large extent on the development and growth of local leadership institutions. These indigenous institutions promote mutual trust, reciprocity and fairness on which collective action is based in rural communities for sustainable land use.

Environmental sustainability connotes that natural resource users should be concerned about the impacts their activities today will exert on environment without compromising the ability of the future generations to meet their own needs (Stockholm Environmental Institute, SEI, 2001). A sustainable environment is the one that has the capacity to secure a better quality of life for everyone, now and for generations to come. This is because such an environment has the capacity to cope with and recover from stress and shocks and provide opportunities for the next generation. Therefore, environmental sustainability is achieved when the productivity of life supporting natural resources is conserved or enhanced for use by future generations. This can be accomplished through collective action fostered by local institutions and governance structure for the management of natural resources; which is the focus of this study. One way of doing this is for societies to create leadership institutions that can regulate household livelihood strategies and outcomes, by providing orderly access and use of natural resources, streamlining expectations, sources of income, promoting peaceful co-existence, reducing vulnerability and mitigating adverse consequences of biophysical degradation and social relations. In Ogun State Nigeria, as population in the state continues to grow and pressure on land resources increases, lack of co-operation in land use is common in pastoral communities.

The broad objective of this study is to analyse the relevance of indigenous institutions (locally crafted rules, regulations and informal social control mechanism such as leadership in various pastoral communities) for collective action in fostering co-operation for sustainable land use among pastoral communities in Ogun State. The specific objectives of the study are to:

- i. identify the personal characteristics of the respondents (agro-pastoralists and host communities);
- ii. investigate local institutions and collective action functions in the study area;
- iii. identify the forms of collective action in fostering co-operation for sustainable land use among pastoral communities;
- iv. examine processes and tools for building collective action by leadership institutions in pastoral communities.
- v. identify collection action problems and institutional challenges.

B. Materials and Methods

Ogun State was created in 1976 and lies within the southern part of the country neighbored by Oyo, Ondo and Lagos. The State which has Abeokuta as its headquarters lies between longitude 2° 2' and 3° 55' E and latitudes 7° 01' and 7° 18' N with an annual growth rate of 3 percent per annum. The land area is 1,640,926 square kilometres. The Ogun State projected population as at year 2006 was 4,054,272 (National Population Commission, 2006). The vegetation in Ogun State ranges from derived savannah to rain forests. Its land area consists of natural resources such as forest reserves, rivers, rocks mineral deposits and an ocean front, as well as extensive fertile soil suitable for the cultivation of a wide range of equatorial, tropical and savannah crops.

A multi-stage sampling technique was used to select the respondents (household heads) for this study. Purposive sampling technique was used to select four Local Government Areas (Imeko-Afon, Yewa North, Odeda and Abeokuta North). Fourteen pastoral Fulani communities were purposively selected within the four Local Government Areas. In addition, Three hundred and twenty Fulani pastoralists and 115 Yoruba host farmers were selected by simple random sampling from the 14 communities.

I. Data collection procedure

Primary data for the study were collected through the use of a semi-structured interview schedule. Focus Group Discussions were conducted in all the communities to elicit information on indigenous institution, leadership structure, land-use management and collective action. Secondary data from literature were also sourced. Data were analysed using descriptive statistics such as frequency count, percentage, and mean.

C. RESULTS AND DISCUSSION

I. Personal and Background Information of Respondents

The result of the analysis in Table 1 shows the distribution of respondents according to personal characteristics. Using Fabusoro (2009) age classification, 68.2% and 66.7% of the Fulani household heads and Yoruba farmers respectively were between the ages 31–60 years, Farmers within this age bracket constitute the majority of people engaging in agricultural production in developing countries (FAO, 1997). The result shows that 20.9% of Fulani pastoralists and 27.8% of the host Yoruba farmers were above 60 years of age. The results also revealed that 10.9% of Fulani heads of household were less than 30 years of age while 5.2% of the population of Yoruba farmers' head of household were less than 30 years of age. The mean age of the Fulani household heads was 51.57 years as compared with the mean age of the Yoruba Farmers which was 56 years. The findings in Table 1 indicate that 83.7% and 94.8% of settled Fulani agro-pastoralists and host Yoruba farmers respectively were married. It was found that being married as a status is a crucial socio-economic factor determining whether the man could be allocated land for farming and grazing and the roles he could be assigned to play especially among the settled Fulani agro-pastoralists (Desalegn, *et al.*, 2007). It was observed that 35.9% of Fulani agro-pastoralists and 47.0% of Yoruba farmers' population respectively had no formal education. Almost half (49.4%) of the members of Fulani agro-pastoralists respondents had Quranic Education while majority (85.3%) of Fulani agro-pastoral household heads had no western education. Only 14.7 percent of the members of the Fulani respondents had western education while only 53.0% of Yoruba farmers' had western education. The mean household sizes for settled Fulani agro-pastoralist and Yoruba farmers' head of households was found to be 9.80 and 7.62 respectively. The need for this large household size is occasioned by their livelihoods which is the main income generating activity among the Fulani. The respondents engaged in different occupations.

Figure 1a and 1b indicate that 95.6% and 92.2% of the Fulani and host communities members engaged in pastoralism and farming respectively, while very few were involved in both non-farm and off-farm activities. These findings indicate that the two major occupations prevalent in the study area were pastoralism and farming.

II. Local institutions and collective action functions

At various pastoral communities in the study locations, investigation reveals that through meetings with various stakeholders (Yoruba farmers and Migrant *Bororos*), and the establishment of monitoring team, pastoral leadership institutions were able to build collective action for land use and natural resource management. The investigative teams usually consist of members of pastoral group who are well versed in regulations for grazing as well as those who could speak the host community language. According to information obtained from the pastoralists in the study locations, the leadership institutions (Fulani Traditional Council, FTC, headed by *Sarkin Fulani/Seriki*) consisting of the foremost elders of the community, such as the Imam, *Mawdo*, engaged in other collective action issues such as funds generation through the payment of dues, levies and other sundry payments.

Based on the FGDs held with the pastoralists, it was observed that *Ardo/Seriki/Sarkin* Fulani and its council members play significant role in the establishment of lay down regulations for grazing and access to water. The authority held by the leadership institutions in playing the role in pastoral communities is derived from their position in the FTC and indigenous systems of *doka* (law), *sharia* (justice) and *aldu* (custom). The leadership institutions in pastoral communities were found to be involved in the process of making authoritative decisions in respect of who gets what, when, where and how. Specific regulations identified to have been enacted by FTC which are collective action tools for building collective action in the management of co-operation for sustainable land use among pastoral communities are as follows:

- i. Farming activities were discouraged along designated cattle routes
- ii. Under age pastoralists were not allowed to graze cattle without being subjected to watch and supervision by their parents or family heads or elderly pastoralists
- iii. Herdsmen were not to drink alcohol or use any hard drug or stimulant while grazing cattle on field.
- iv. In the course of negotiating for compensations for crop damage, whatever amount the farmer mentions, the Fulani is obliged to pay especially if the negotiation is being conducted on the very farm that was destroyed by the encroached cattle.
- v. Pastoralists were not to graze any field under cultivation.
- vi. Even after harvesting, permission of the field owner was required before grazing such land.
- vii. In communities where water was relatively scarce during dry season like Iwoye ketu, Afon, Otapele, Oloka, Imala Tibo, Atokun and Olodo, pastoralists were encouraged to use water from open sources during raining season in order to preserve the one in excavated ponds.
- viii. There exist rules restricting cattle from directly entering the water sources (ponds) by fencing off the ponds and making them drink water hauled into troughs made from clay and wood.
- ix. During the dry season pastoralists were directed by FTC to shift their herds to more distant water sources in order to preserve water near the homestead for human use.
- x. Rights to gain access to and use water in the pond are given by FTC to the pastoralists only if they have participated in tasks linked with excavation, cleaning, maintenance

and rehabilitation of the water source (pond). Usually, *Jawmu saare* coordinated the regulations that determined rights to use the pond in each pastoral camp.

It was observed that all these regulations were established in pastoral communities by the leadership institutions to build collective action for the purpose of achieving peaceful coexistence between Fulani pastoralists and host farmers as well as to ensure sustainable environment in rural communities where crop and livestock productions coexist.

III. Forms of collective action in fostering co-operation for sustainable land use among pastoral communities.

Analysis of indigenous institutions for collective action in land use and natural resource management among settled Fulani agro-pastoralists in Ogun State follows similar pattern and the forms of collective action identified bare some resemblance with ones identified by Runge (1992), Gebremedhin *et al.*, (2004), German *et al.* (2006) and Fabusoro and Sodiya (2011). Results revealed the identified forms of collective action used for fostering co-operation were presented in Table 3. The Table shows that the existence of investigation teams for land use and natural resource management attracts the highest affirmation as a form of collective action for the promotion of sustainable natural resources and peace in pastoral communities. A close examination of the various forms of collective action indicates that more than 60% of settled Fulani agro-pastoralists interviewed in the study locations affirmed the existence of each of the eight forms of collective action as coordinated strategies resulting from unified efforts of pastoralists to reduce joint harm or obtain high benefits (Fabusoro and Sodiya, 2011). Also, other forms of collective action were confirmed by pastoralists as existing in pastoral communities such as financial contribution for payment of dues and royalties to land owners (92.5%), participation of settled Fulani agro-pastoralists in host communities' socio-economic events (94.1%), Fulani pastoralists involvement in collective execution of community projects like schools, roads (81.6%) and Fulani networking with other pastoralists (83.4%). Networking with other pastoral communities as an identified form of collective action was affirmed by 83.4% of pastoralists in the study location. Personal interview indicates that this form of collective action was necessary to seek support for grazing activities during the peak of dry season. It was observed that this practice was common in the study area in which pastoralists from Iwoye Ketu, Afon, Otapele, Imala, Atokun, Oko-rori and others, usually network with pastoralists in Eggua during the dry season because of the permanent presence of water and pasture in this agro-ecological area.

IV. Process and tools for building collective action by leadership institutions

Among the Settled Fulani agro-pastoralists, there existed traditionally established (accepted and expected) proceedings for building united efforts (collective action). These traditionally established proceedings, for collective action were called processes as indicated in Table 4. Although there were slight differences among the pastoral communities with respect to the functions of local institutions as shown in Table 2, the study found that Fulani pastoralists usually resorted to negotiation and self-regulation processes through collective action as a way of gaining confidence and access to land, bringing people together and fostering peaceful coexistence as well as ensuring sustainable land use. In organising or building collective action in pastoral communities in the study locations, findings revealed that the hierarchical nature of the structure of the local leadership institution prevalent among the settled Fulani agro-pastoralists influenced the processes of negotiation, consultation, collection of dues and many others. The structure starts from the lowest level of *Jawmu saare* (household), to *Mawdo* (Camp) and *Ardo/Sarkin* Fulani or *Seriki* (pastoral area or community level). The finding indicates that leadership institutions place high emphasis in ensuring that the process of negotiation and consultation for land access participatory and democratic. Irrespective of

the level at which the collective action emerges, the negotiation could end at any level of the local institution depending on the magnitude.

V. Collection action problems and institutional challenges

Collective action is largely based on mutual trust and reciprocity and these two issues are promoted by prevailing social norms, values, laws and belief with which leadership institutions are encapsulated. There exists a range of factors that could render collective action problematic and vulnerable to threats thereby challenging their viability (Ostrom, 2000). These factors affected the strength of the norms of trust and reciprocity held by participants and incapacitate the possibility of unified efforts produced. When individuals stay unorganised and adopt coordinated strategies to yield higher benefits or reduce joint harm. It is in the light of this discussion that a number of factors that has the capacity to make collective action ineffective were identified. These are listed in Tables 5 and 6. Information in Table 5 indicates that 86.6% of the respondents identified the issue of lack of policy support by government to settled Fulani agro-pastoralists as one of the factors that make collective action vulnerable to threats in their joint pursuit of livelihood activities. Over 60.0% of the Fulani respondents maintained that loose collaboration/contradiction between statutory and indigenous institutions (68.1%), intrusion of migratory pastoralists (*Bororo*) into settled Fulani agro-pastoralists communities (63.5%) and entrance of new herders into settled Fulani agro-pastoralist communities (64.4%) constitutes collective action problems.

The collective action problems relating to loose collaboration/contradiction between statutory and indigenous institutions was observed at Opeji in which the investigation, monitoring and enforcement team put in place by the community was accused by the police of taking over its (police) statutory responsibility and threatened to arrest any vigilante member that refused to stop investigating cases whether civil or criminal in nature in the area. This position, of the pastoralists, was corroborated by our observations of the cases in which most of their places of settlement were not officially recognised as either towns or villages; and they lacked access roads, and permanent supply of water. Table 6 shows that this collective action problem is very challenging in Yewa North Local Government Area (Eggua and Atokun). Figure 2 further explains the role played by leadership institutions in building collective action for co-operation and sustainable land use among settled Fulani agro-pastoral groups. The figure also explains what will be the outcome of integration (in the event of existence of strong collective action fostered by institutional arrangement which promote cooperation, collaboration and self regulated access and use of natural resources) or non-integration (in the events of unregulated access and use of natural resources, competition and suspicion) with the host community members (Yoruba farmers) in some cases.

VI. Conclusion

Drawing from the findings of the study, the nature and intensity of co-operation and land use vary from one study location to other. Fulani pastoralists and host farmers have variously responded by evolving leadership institution for fostering collective action to address the interlinked challenges of co-operation, collaboration, sustainable land use and welfare. Evidence from the study, shows that local institutions for building collective action in the management of sustainable land use were *Sarkin Fulani*, *Mawdo* and *Jawmu saare* embedded with tradition (*aldu*), laws (*doka*) and justice (*sharia*) are important for the maintenance of peace and sustainable land resources among the Fulani pastoralists. It was discovered that local leadership institutions used processes and tools to achieve collective action functions. Some of these tools were; payment of bails or court bills, appeals, meetings, investigation,

enforcement, monitoring, financial contributions, breaking of Kolanut, networking with other Fulani groups and governments.

VII. Recommendations

The achievement of peace and sustainable land resources management is dependent on viable collective action processes and efforts by natural resource user groups to deal with the threats of collective action problems and challenges. These can be achieved through the following:

- i. Capacity building and advisory services on leadership and institutional building;
- ii. Development of designated areas for Fulani agro-pastoralists to settle with provision of infrastructure and demarcation of grazing routes as well as formulation of land use policy for pastoral areas in the four LGAs in Ogun State;
- iii. Fulani pastoralists should be supported by government to develop mini-earth dams into which water would be collected during the raining season and made available to pastoralists for their herds during the dry season.
- iv. Government should provide portable water in all pastoral areas to prevent both Fulani pastoralists and host Yoruba farmers drinking polluted water which has been alleged to be the cause of reported cases of cholera outbreak especially during dry season.

Table 1: Background and Production characteristic of respondents

Variables	Fulani		Farmer	
	Frequency	Percentage	Frequency	Percentage
Age (years)				
Older (>60)	67	20.9	32	27.8
Old (51-60)	117	36.6	25	21.2
Mid age (31-50)	101	31.6	52	45.5
Young (<30)	35	10.9	6	5.2
Mean	51.57		Mean	56.00
Marital status				
Single	21	6.6	4	3.5
Married	268	83.8	109	94.8
Divorced	16	5.0	1	0.9
Separated	15	4.7	1	0.9
Education attainment				
No formal education	115	35.9	54	47.0
Quranic education	138	49.4	-	-
Adult education	17	5.3	18	15.7
Primary education	23	7.2	19	16.5
Secondary education	5	1.6	17	14.8
Tertiary education	2	0.6	7	6.1
Household size				
Large (>10)	170	53.2	21	18.3
Medium (6-10)	100	31.3	67	58.3
Small (<6)	50	15.6	27	23.5
Mean	9.80		Mean	7.62

Source: Field Survey, (2013)

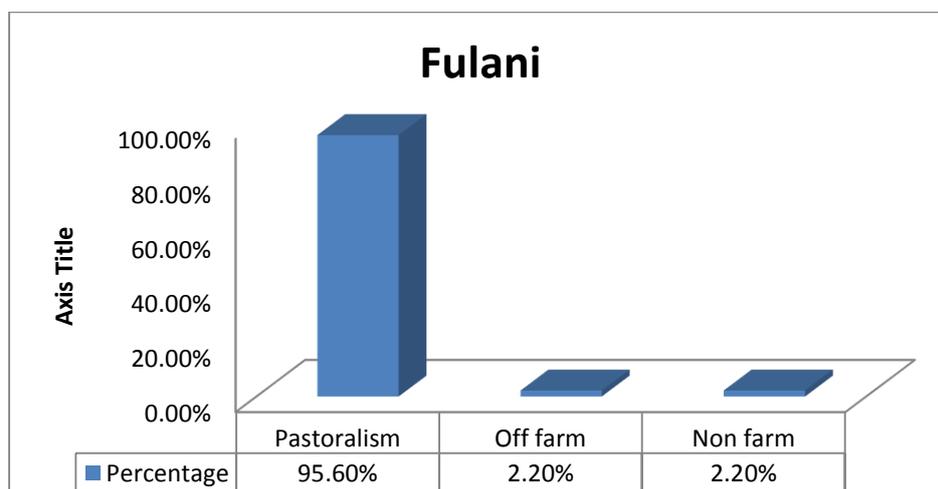


Figure 1a: Livelihood Patterns of settled agro pastoralists

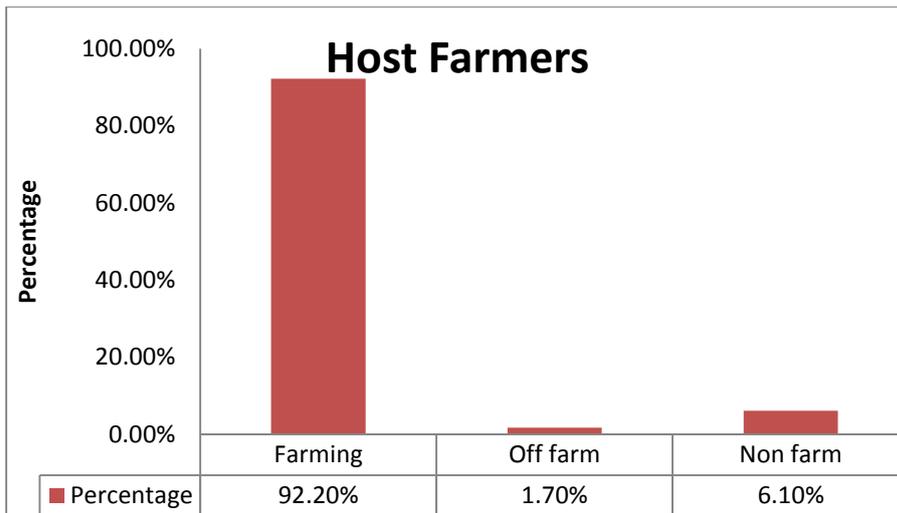


Figure 1b: Livelihood Patterns of Host Farmers

Table 2: Pastoral areas, local institutions and collective action functions

s/n	Collective action	Pastoral area and local institutions																							
		Eggua				Atokun				Iwoye				Afon				Alabata				Allah Dey Branch			
		FTC				FTC				FTC				FTC				FTC				FTC			
SF	M	J	AF	SF	M	J	AF	SF	M	J	AF	SF	M	J	AF	SF	M	J	AF	SF	M	J	AF		
1.	Negotiation with host communities for reception and approval especially for new entrants to build pastoral camp																								
2.	Demarcation of pastoral and forest land for grazing field and orbit restriction rules as well as taking decisions on period for free grazing on agricultural lands.																								
3.	Participation in host communities social and economic activities like markets, community development projects and social events.																								
4.	Negotiation with local government authorities on essential amenities such as schools, water, road as well as security issues																								
5.	Payment of required royalties and dues on land																								
6.	Conflict management																								
7.	Linkage with local extension and veterinary officers																								

LEGEND

- SF - Sarkin Fulani
- M - Mawdo
- J - Jamu Saare
- AF - AFCON (Association of Fulani Traditional Chiefs of Nigeria)

Table 3: Distribution of respondents to the existence of forms of collective action in land use and natural resources management among settled Fulani Agro-pastoralists

Collective action	Yes	
	Frequency	Percentage
Demarcation and negotiation to secure sustainable access to land, water and pasture as well as to promote peaceful coexistence	248	77.5
Investigation teams for land use and natural resource management	315	98.4
Enforcement and monitoring activities	214	66.9
Existence of elders council (FTC)	255	79.7
Financial contribution for payment of dues and royalties	296	92.5
Participation of settled Fulani agro-pastoralists in host communities socio-economic events	301	94.1
Fulani agro-pastoralists' networking with other pastoralists	267	83.4
Fulani pastoralists involvement in collective execution of community projects like schools, road and many others.	277	81.6

Source: Field survey, (2013)

*Multiple

responses

Table 4: Collective action, processes, tools and outcomes identified among pastoralists

S/ N	Collective actions	Process	Tools	Outcomes
1	Negotiation with host communities and land owners for reception and approval, especially new entrants seeking for land allocation to build pastoral camp	Negotiation, Consultation, Collection of dues and royalties	Meeting, attendance of host community meeting, attendance of host communities socio cultural events and financial contributions	Access to and use of Natural resources by Fulani pastoralists for grazing and farming. Livelihood security
2	Demarcation of pasture and forest land for the establishment of grazing routes, field and orbits restriction rules	Making or enactment of rules and regulation	Breaking of kolanut to seal the decision, meetings and monitoring, investigation and enforcement	Reduction in conflict, farm encroachment by cattle, water pollution and farmers' food and cash crop destruction
3	Participation in host communities social and economic activities.	Participation and Coordination	Meetings, information sourcing and sharing, attending host community meeting, market and socio-cultural event and financial contributions	Conflict transformation as market host community meetings and socio-cultural events attendance by Fulani pastoralists, provides potential avenues for developing constructive dialogues culture and practice of tolerance and re-balancing of interest
4	Payment of required royalties and dues for land allocation	Collection of dues and royalties	Fulani pastoral meeting, breaking of kolanut and financial contribution	Establishment of community project, for instance bore hole, normadic school and many others, conflict resolution, access to and use of natural resources and hosting of meetings
5	Negotiation with local government authorities on essential amenities such as schools, water supply and road	Negotiation and Consultation	Financial contribution, appeal, Fulani pastoral meetings, attending host community meeting and socio-cultural events	Establishment of school, grading of roads, construction of culvert or bridges and water supply
6	Linkage with local extension and veterinary officers	Linkages	Networking with other Fulani groups and extension and veterinary officers.	Veterinary and extension practices which promotes healthy livestock, good family life and market opportunity.
7	Conflict and natural resources management.	Negotiation, Resolution, self regulation, constitution of investigation, enforcement and monitoring team	Appeal, payment of bills or court bills, Fulani pastoral meetings, investigation, monitoring and sanctioning, attending of host community meeting, market and socio-cultural event, breaking of kolanut and financial contribution	Peaceful co-existence between host farmers and Fulani pastoralists, sustainable natural resources use and sustainable livelihood.

Source

: Field survey, 2012/2013

Table 5: Responses in relation to problems of and institutional challenges towards building collective action

S/N	Problems/Institutional Challenges	Yes
1	Settled Fulani agro-pastoralists refusal to make financial contributions in their various communities.	173 (34.1%)
2	Non participation by settled Fulani agro-pastoralists in host communities social ceremonies and market.	127 (39.7%)
3	Non Involvement in the execution of community projects	128 (40.1%)
4	Investigation teams failure in the performance of their duties	143 (44.7%)
5	Regulation, monitoring and enforcement teams failure in the performance of their duties	175 (54.7%)
6	Entrance of new herders into settled Fulani agro-pastoralists communities	206(64.4%)
7	Intrusion of migratory pastoralists (<i>Bororo</i>) into settled Fulani agro-pastoralists communities	203(63.5%)
8	Demonstration of unwillingness by host communities in granting permission to settled Fulani agro-pastoralists to use natural resources	257(76.6%)
9	Lack or policy support by government to settled Fulani agro-pastoralists in the pursuit of their livelihood activities.	277(86.6%)
10	Loose collaboration/contradiction between statutory and indigenous institutions.	191(68.1%)
11	Refusal to abide by rules and regulations.	237(74.1%)
12	Deviations from customs/non-observance of religious beliefs by settled Fulani	232 (72.5%)

Source: Field survey, (2013)

*Multiple responses

Table 6: Responses in relation to problems of and institutional challenges towards building collective action

S/N	Institutional Challenges	Abeokuta	Yewa North		Imeko Afon		Odeda
		Rounda	Eggua	Atokun	Iwoye ketu	Afon	Alabata
1	Settled Fulani agro-pastoralists refusal to make financial contributions in their various communities.	13(16.5)	23(31.0)	18(42.4)	17(25.3)	19(29.8)	36(67.9)
2	Non participation by settled Fulani agro-pastoralists in host communities social ceremonies and market.	2(2.5)	20(27.0)	13(17.6)	7(10.4)	9(13.4)	29(54.7)
3	Non Involvement in the execution of community projects	9(11.5)	26(35.1)	20(27.4)	10(14.9)	14(20.8)	4(7.5)
4	Investigation teams failure in the performance of their duties	11(13.5)	36(48.6)	10(4.0)	9(13.4)	15(8.9)	26(49.1)
5	Regulation, monitoring and enforcement teams failure in the performance of their duties	12(15.2)	33(44.6)	9(12.1)	20(29.8)	24(35.8)	25(47.2)
6	Entrance of new herders into settled Fulani agro-pastoralists communities	1(1.3)	35(47.2)	6(8.1)	44(65.6)	20(29.8)	47(88.7)
7	Intrusion of migratory pastoralists (<i>Bororo</i>) into settled Fulani agro-pastoralists communities	2(2.5)	44(59.4)	44(65.6)	30(44.7)	27(40.3)	30(56.6)
8	Demonstration of unwillingness by host communities in granting permission to settled Fulani agro-pastoralists to use natural resources	59(74.7)	46(62.1)	30(44.7)	20(29.8)	38(56.7)	27(50.9)
9	Lack or policy support by government to settled Fulani agro-pastoralists in the pursuit of their livelihood activities.	69(87.3)	56(75.6)	10(13.5)	41(77.3)	20(13.7)	24(45.3)
10	Loose collaboration/contradiction between statutory and indigenou institutions.	14(17.7)	53(71.5)	12(16.2)	26(38.8)	20(29.8)	31(58.5)
11	Refusal to abide by rules and regulations.	58(73.4)	38(51.3)	11(14.8)	25(37.3)	21(31.3)	33(60.2.3)
12	Deviations from customs/non-observance of religious beliefs by settled Fulani	39(49.4)	32(43.2)	10(13.5)	12(17.9)	30(44.7)	51(96.2)

Source: Field survey, (2013)

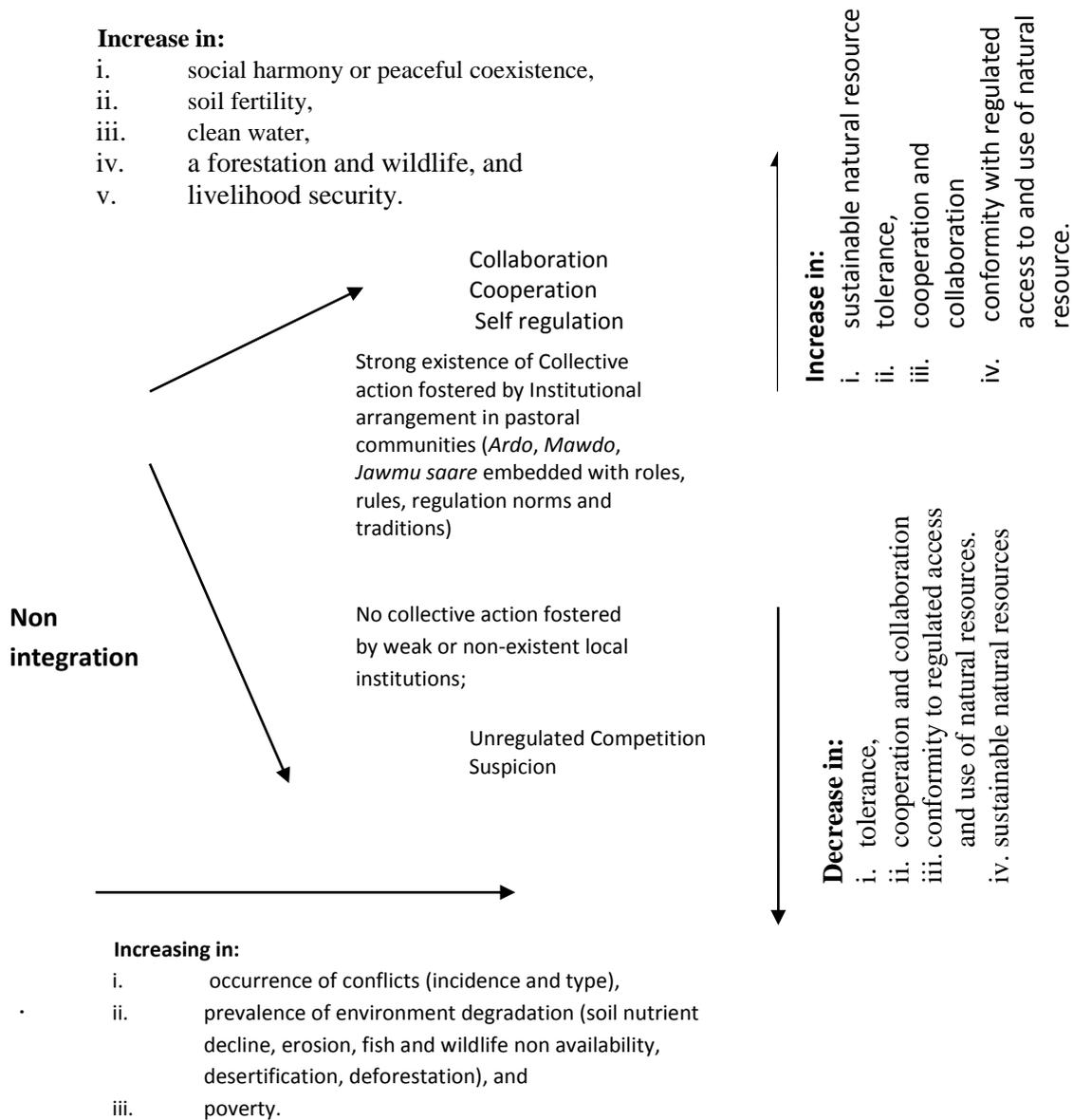


Figure 2: A conceptual model of factors influencing Fulani pastoralists' integration or differentiation and changes in peaceful coexistence with host communities and sustainability of environment.

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