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Local People's Strategies to Cope with Land Degradation: The Case of Yassa-Munene Village in the Democratic Republic of the Congo

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Local People's Strategies to Cope with Land Degradation: The Case of Yassa–Munene Village in the Democratic Republic of the Congo

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Abstract

Recently the interest in local people's strategies to cope with land degradation has grown among scholars and policy-makers. However, most of the studies have only examined the degradation process and described farmers' strategies' without placing attention on understanding the factors influencing farmers' decisions and reasons to choose innovative strategies. This article, while examining local farmers' strategies in Yassa–Munene village, analyzes why farmers choose the strategies they apply. A body of literature has argued that farmers' decisions are often based on the land user's interest in direct and indirect cost and benefits of the undertaken strategies, in term of yield, time and cash. Using the 'framework for traditional local institution analysis in land management', this study argues that farmers' decisions to adopt or reject innovative strategies are mostly based on local traditional leaders' will and approach to implement the strategies. Leaders play a central role as custodians, resources controllers, mediators and advisors. But, they are also exemplars, key actors, risk takers and 'servants' or helpers of the community in implementing innovations. Because, they are the 'well informed' and 'well educated' in resources management than ordinary farmers. This study shows that all the major past innovations have successfully been adopted with and through leaders' involvement and decisions; rather than through the farmers' own initiatives or that of the external actors.

Keywords: Local People, Strategies, Land Degradation, Traditional Authorities

1. Context of Local People Land Management and Strategies

1.1. Introduction

Recently, interest and recognition on local people's resources management and strategies to cope with land degradation has grown among scholars and policy-makers (Kronik and Verner 2010b: 152). Local strategies intend to bring to forefront the role that the adaptation or integration of indigenous knowledge can play in planning resource management and development; it enables farmers to sustain their natural resources and improve their livelihood (Berkes 1999: 34).

The terms "local knowledge" (LK) and "indigenous knowledge" (IK) are interchangeably used here to mean "the knowledge which has been acquired over the years through experience, and passed on from generation to generation through oral tradition and by practices" (Nkansa Buabeng 2004: 14).

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Land degradation refers to "the aggregate diminution of the productive potential of the land, including its major uses, its farming systems and its value as economic resources" (Alemneh and Niamh 2001: 9). The term "strategies" in relation to climate change refer to "a process whereby societies improve their ability to manage climate risks and climate fluctuations" (Rasmus et al. 2010: 259).

This article examines local farmers' strategies to cope with land degradation in Yassa-Munene village. It particularly analyzes farmers' reasons and decisions in the adoption of management solutions; and tries to understand the role played by local traditional leaders or authorities[1] in people's choice for adaptive solutions. Thus, to fulfill this objective, the study answers questions on 'how local farmers manage their land (what are the management practices and strategies used to cope with land degradation?); what benefits do they obtain from managing land in the traditional way? What influences farmers' decisions to adopt or not some of the alternative solutions? And what specific role do the traditional leaders play in land management decisions?

This study is important because Yassa-Munene village and its leaders have a long history and have been influential and significant for most of the Ambuun people. It is the only village in the region where the reforestation program initiated in the 1990s and 2000s was not applied. Besides, contrary to the other villages, this village received very little attention from governments or NGOs. In spite of that, it is surviving without proper external support; thus, this case study can be presented as a case where the role of the traditional leaders in land management and adaptation have proved to be more than a merely control, mediation or stewardship. Rather, their role was more important than farmers' or external actors' initiatives in the village.

In spite of growing researches, scientists have criticized indigenous knowledge and see only very limited impacts of the knowledge in dealing with land degradation. Some scientists still describe it as 'primitive', 'unproductive' and 'irrelevant' in contributing to the problems that farmers face (Rajasekaran 1993: 6). Others argue that indigenous strategies have been undermined by indigenous people's own internal contradictions and insufficiencies. And that indigenous strategies often fail because they are constrained by lack of capital assets (Stocking and Niamh 2001). Or that indigenous incapacity to be adapted limits its use and promotion in the modern context (Hanna 2010: 43–45).

Despite the above critiques, many argue that local people have a wealth of knowledge and a valuable contribution to make (Warren 1991). It is from this view point that governments, International Agencies and NGOs have tried to support communities' development efforts.

Most of the previous studies and efforts on local land management have limited their investigation on the degradation process or on the mechanisms adopted by farmers to deal with it (Gyasi and Uitto 1997). Less attention has been put on understanding the decisions and reasons leading to farmers' adopted strategies. A summary of indigenous strategies has been provided bellow (section 2.1). But, here various authors' explanations on farmers' actions and decisions can broadly be grouped into following categories:

—*Farmers' behavior*: This refers to laziness, mistrust, 'culture in community', risk, lack of/ insufficient knowledge transfer, indigenous incapacity to be adapted' (Stocking and Niamh 2001: 119; Hanna 2010).

—*Costs/Economy*: refers to cost of herbicide, pesticide or labor; low investment for equipment, land size and tenure system; market system and price, gender or planning (Hanna, 2010). Stocking and Niamh (2001: 119) referred to household size, income and cultivated area; land user's interest in the direct and indirect cost and benefits of the undertaken measures. Scott (1976: 13) referred to farmers' own decisions that can play major role. Their choices are based on "safety-first" or the 'economic subsistence' (the necessity to 'meet people minimal need in reliable and stable way').

—*Work load*: labor load, lack of labor, age or health, lack of equipment, migration, weeding, were identified by Hanna (2010) or Agrawal (2010);

—*Yield/benefits*: referring to grant dependency, yield decrease, lack of evaluation, end of subsidies, conflict (Hanna 2010); or to decisions on production, consumption, and social control (Nuwagaba-Manzi and Tumuhairwe 2003: 189). Clement (2007: 542) particularly found that in Vietnam the end of annual crop cultivation in 1990s was due to the yields decrease; and the reforestation was encouraged by government's subsidies.

—*Tradition*: referring to farming tradition, habit or rules. Clement (2007: 542) found that the end of annual cultivation in 1990s in Vietnam was also due to the need for a natural fallow and because informal rules had changed, in turn affected costs and benefits of annual cropping systems.

—*Biophysical conditions* include soil properties (Hanna 2010). Nuwagaba-Manzi and Tumuhairwe (2003: 197) found that farmers' reasons for using introduced practices could be the typical topography of the area. In Clement (2007: 542), the end of annual cultivation in 1990s in Vietnam was in part due to soil poor condition.

Contrary to early studies, the present study argues on crucial role played by local traditional leaders on farmers' decisions and strategies to deal with land degradation. This factor appears in the interviews, but is not clearly mentioned in literature. The reason why this is the case, might lie in the very nature, culture and history of each society examined; or mostly on the definitions and roles of personalities identified as 'leaders' in those societies. Some of these studies do not clearly distinguish traditional leaders (customary leaders, who have obligations for their subjects) from people 'appointed leaders' (internal or external actors, who act as patrons, and wait for rewards). Most of studies have also over-estimated the capacity of colonial and modern political and economical power to transform traditional societies; but under-estimated the fact that there are things in the indigenous communities that may have not changed. Thus, for them all decisions are measured in terms of what the authority (patron) and peasants would gain immediately. The description of the traditional leaders in West and East Africa (Mowo 2013; Nuwagaba-Manzi and Tumuhairwe 2003) in particular, identified them as almighty, great, sacred, powerful and resource controllers; but failed to see them as 'servants'

or 'land users' models. In the present study, some of the leader's customary position and role have been preserved. Leaders don't have official role and don't have wealth to lend to others; and farmers don't pay taxes or corvee in turn for the services done by the leaders or the state, as in the societies described in Scott (1976). While this study acknowledges the literature's reasons influencing farmers' decisions, it argues that these reasons are secondary.

Having emphasized the adaptive role of the traditional leaders in Yassa-Munene community, farmers should not be seen as passive actors waiting for leaders to decide for everything. But, this should be looked as a cultural task sharing practice and sign of solidarity. There are initiatives that farmers undertake at the farm and community levels that do not require, in advance, leaders' involvement. But since in this community, the most important and historical strategies have been related to 'adopting new crops and new crops combinations', and 'the re-focus on the traditional practices' (see table 2), leaders were always the key actors. Any sincere analysis of the African traditional communities must reveal that leaders play this role in all other domains. For instance, missionaries' registration of new baptized will always reveals that: 'leaders and people, the head of clans and households were baptized' on a certain day, after that leaders have gone through. Or, that the entire village disobeyed colonial power just because leaders disobeyed.

This case study shows that most of the past adaptive strategies in the village were successful only with and through the leaders. They act not simply as mediators, permission providers, advisors or rules controllers. Their role is more than simple 'mediators' through whom the external interventions and initiatives reach local community, as suggested by Agrawal (2010: 178). But they are models, experts-farmers or exemplars that other should imitate. They take the lead and act before advising others; since they are the 'most informed' and 'educated' in land management. They had received valuable information from the previous generation of leaders. They know more land's history, story, problems and potentialities than any individual or external actors. This study shows that external actors and individual's initiatives have failed to initiate solutions and improve the land use practices. The failure was not due to the lack of people participation or insufficient subsidies, but rather because the role of the hierarchy was not clearly defined by actors.

In order to understand local farmers' decisions and customary authorities influence on farmers, this study relies on the *framework for traditional local institution analysis in land management* (Bonye 2008; Mowo 2013). The framework has been adapted and modified to fit the Ambuun societies. The examination of the situation was coupled with a historical perspective that thoroughly explores farmers' perceptions of their environment and decision-making processes.

1.2. Research Method

The study was mainly qualitative. To collect data, it used Participatory Rural Appraisal (PRA) methodology's techniques like cultural mapping, transect walking, observation, historical calendar,

discussion, interviews and questionnaires (Grenier 1998; Berkes 1999). PRA was chosen because it facilitates the learning of rural life and conditions; and helps understand local decision-making processes from local people perspective. This 'people-centered' model focuses on process whereby individuals and societies build their capacity to meet their own needs to improve the quality of their lives (Grenier 1998: 41–42). It involves people in the identification of their assets, issues such as land degradation, assessment of its impact on their livelihoods and the selection of the most appropriate mean to address the problem. It also discovers factors of land user which impinge on their decisions (Stocking and Niamh 2001: 35).

The fieldwork was conducted from March to September 2014. The interviews and discussions were conducted in local language, *kimbunda*. Men and women, the chiefs and the subjects were interviewed separately. Interviews took place in houses or on farms, with individuals or groups. The study first gathered information on socio-economic, cultural, historical and natural condition of the village and land. Then, gathered data on conservation options, the role of famers and the one of the leaders. The forty people interviewed on this subject were chosen by the help of the three key informants. Before entering the field, a review of the history and social organization of the *Ambuun* people were conducted through reading different sources (Awak 1976). However, no significant information on Ambuun ecology, or land degradation issue was found. The information, the map or statistics, population on resources of the village are inexistent.

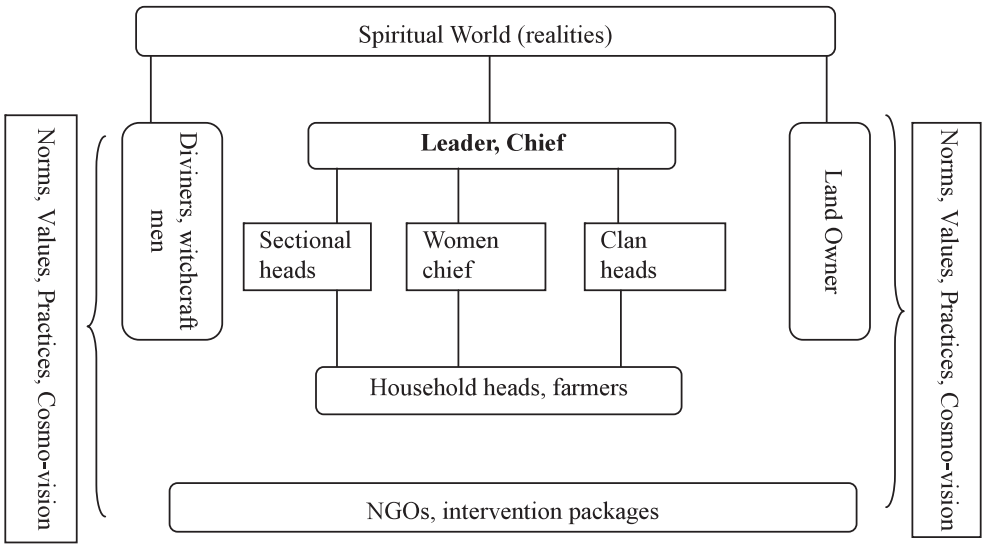
1.3. Analytical Framework

The analysis in this study relies on *traditional institutional structure for natural resource management* framework (Bonye 2008, Mowo et al. 2013). The framework was used in some of the studies to understand the role of the traditional institutions in natural resources management in the Sub-Saharan Africa. It portrays different interactions between leaders' institutions and the other institutions in order to ensure a sustainable land management (Womo et al. 2013). Institutions have controlling effects on the individual resource utilization and management. They help in the process of internalization, maintenance of the group structures and relations as they affect everyday interaction in a group (Bonye 2008: 16–17).

The framework has been modified and adapted in this study, since it presents many structural similarities with most of other African local communities. However, the village presents particularities, especially regarding the crucial role of the leaders in shaping farmers' decisions and responses to land degradation. Unlike the other societies, the leader does not only command, but is expected to involve personally and take the risk for the sake of farmers. Because, he holds more potentialities and responsibility than ordinary people.

The elements of the framework are institutions named: Spiritual realities, land, livestock, labor, mutual assistance, health, traditional beliefs, traditional leaders/authorities, woman chief, land owner,

Figure 1 Framework for Traditional Local Institution Analysis in Land Management



Sources: Adapted and modified from Bonye (2008).

recreation. In this case study, traditional leaders' institution is the center of analysis in the decisions making and resource management. "Leaders" here refer to Chief (chief of *groupement*), *chef de terre* or also members of the chief's family, from the *Oluum* clan. They provide the necessary leadership which ensures that customs and values are respected.

The analysis focuses on the historical trends and how traditional institutions have contributed to effective solutions. Figure 1 shows the structural relationships of the institutions in natural resources management. In the structure, the *Spiritual World* is the driving force that indigenous people consider as regulators of the other institutions in the management of natural resources (Bonye 2008: 64). The *Chief*, placed at the highest level of the structure, is the traditional political figure who performs administrative and judiciary functions in relation to natural resource issues. He oversees the management of all resources in their land. In the frame, the *Spiritual World* has a strong link with *Land Owners* (*chef de terre*, in this study), diviners and witchcraft men institutions, play a spiritual role, but do not directly depend on the chief. Land owners representing the first settlers, function as the custodians of land and the related natural resources, and therefore perform religious functions in the communities. *Woman Chief* institution regulates activities in distributing farming land. It depends on leaders' decisions. The *Clan* and *Sectional heads* perform sacrifices, manage sacred grove, allocate household lands to individuals and families and hold land and resources at the household level. The *Family/Household heads* are empowered by the support of their family members. Families/individuals hold the customary free hold interests in land (Bonye 2008: 66). *Governmental and non-governmental institutions* can provide other institutions with advice and assets for resource management.

2. Local People Land Management Strategies and the Role of Traditional Institutions: Literature Review

2.1. Local People Land Management and Strategies

Local people have experienced land degradation and have methods to cope with it (Suneetha 2010: 228). They still have a wealth of knowledge to offer to the national and international development efforts (Warren 1991: 28). This acknowledgement comes as result of the efforts to find alternatives to the land degradation issue.

In spite of the gravity of the degradation, indigenous people are adapting to the situation. Scott (1976: 104–225) in Southeast Asian societies, roughly distinguished four different and interlinked sorts of peasants' strategies:

—Reliance on *local form of self-help*, which refers to the solution that family or individual have at hand, that they can take in troubles or as subsistence alternatives. These solutions include petty trade, small crafts, casual labor, mutual assistance, migration;

—*Non-peasant economy*, that is initiatives to seek income from outside sources and the shift to high yielding crops;

—*State's patronage and assistance* in form of subsidies, structural reforms, tenancy, credits, and employment may act as shock absorbers during economic crisis;

—*Religious or oppositionist structure of protection and assistance* that can provide physical security, employment and material assistance.

On the same line, many others described in details, peasants' strategies such as multi-activity (Kronik and Verner 2010a: 37). In their study in Tanzania, Stocking and Niamh (2001: 19–25) describes local conservation measures such as: cultivation contour, terracing, intercropping, inorganic fertilizers, compost and manure. In parts of Ghana, incorporation of new crops, crop rotation and compound farms were practiced (Gyasi 1997: 85–88). In the Upper West region of Ghana, local strategies identified include: agricultural adjustment, migration, sale of livestock, borrowing grain and money from kinsmen, use of famine foods, purchase of food from market, the sale of domestic assets (Nsiah-Gyabaah 1994: 162–168). He believes that these strategies are widespread in Africa and continue to be the "only viable alternatives capable of sustaining agriculture and maintaining ecological balance without external assistance."

Most of the studies agree that indigenous land management strategies always evolve in a particular local context. But, that, there are always external factors of socio-economic and political resources, and traditional informal institutions that influence local strategies. Factors considered are accessibility and use of land capital (farm size/households), food security, market, population, off-farm opportunities or eco-geographical conditions. They influence agrodiversity through creating opportunity to diversify, inflicting constraints on farm investments, and forcing farmers into strategies that minimize household

risk (Mwalukasa et al., 2003: 130; Kronik and Verner 2010b: 162). Agrawal (2010: 177) considers that indigenous capacity to adapt depend mainly on the ways local institutions regulate and structure their interactions, both among themselves and with external actors. And that all adaptive efforts depend on their success on specific institutional arrangement because adaptations never occur in an institutional vaccum.

To illustrate the relationship between local people, external formal institutions and traditional institutions, studies found that in local contexts:

(1) *Formal local institutions and organizations* in particular, may promote informal process; these interactions can be vital to adaptation. Very often governmental agencies also seek to manage resources more effectively by partnering with civic bodies (Agrawal 2010: 179). In colonial Southeast Asia, the states robbed, controlled and transformed peasants' land and labor into commodities for sale. Later on, farmers faced and resisted to the class of landowners ('new freedmen') who added burden on them. Both states and landowners claimed peasants' resources (Scott 1976: 7; 8). There exists links between external development agencies and service providers such as banks, and others social structures (Kendies and Guri 2010: 64). In Southeast Asia peasants had the obligation to pay taxes and participate in the corvee required by the states. The state provided minimum income, welfare programs, social medicine, employment (Scott 1976: 10; 54; 91);

(2) *Traditional institutions* can work with other actors in the community (Agrawal 2010: 188; 179). Kendies and Guri (2010: 64) studies in Northern Ghana identified that working relationships between different hierarchies of traditional authorities were cordial; there were loyalty and obedience on governance and spiritual-related issues. Likewise Kronik and Verner (2010b: 160) found that cultural institutions have the potential to play an important role for instance in forest protection. In Southeast Asia there existed the relation of dependency of peasants with patrons and landlords who 'will help in crisis', in lending them livings expenses or to ensure them the minimum level of livelihood, sponsoring religious activities and weddings. This dependency exists in some of the communities where: "[...] the peasant preferred a system of tenancy or dependency in which the landlord/patron protected his tenant/client against ruin in bad years and an officialdom which, at the very least, made allowances in periods of dearth". But it was observed that landlords here only exploited the clients (Scott 1976: 37; 41; 158). There existed also a rule of reciprocity in the exchanges between villagers, although tensions between the better-off and the poor were frequent. Nevertheless, village mutuality existed to ensure the 'survival of the weakest'. The village had the moral obligation to protect and feed its inhabitants (Scott 1976: 43; 44). Scott observed also that all these institutions have ambivalent roles on peasants'. They may provide vital social insurance during hard crisis, but may also make claims on peasants' resources.

Having described literature on indigenous' strategies (and the relationship between external structure, informal institutions and local community), the next discussion focuses on the role of

traditional leaders institutions.

2.2. The Role of Traditional Leaders' Institutions

In order to understand the role of indigenous leadership or authority in natural resource management, there is a need to define first, the term "institution." Institution is defined as formal and informal rules about who makes decisions, according to which procedures, and what is permitted, what information must be provided, and what payoffs will be assigned to individuals? (Mowo et al. 2013: 155). It could also mean "the rule, roles and structures developed by people to organize their joint activities" (Sunetha 2010: 53). Formal institutions refer to the written or codified rules such as constitutions, judiciary laws, organized markets, and property rights. Informal institutions are instead, the rules governed by behavioral norms in society, family, or community and include sanctions, taboos, traditions, and codes of conduct. They represent established local systems of authority and other phenomena derived from the socio-cultural and historical processes of a given society (Mowo 2013). 'Local institutions' can refer to both the local institutions representing the national institution at the local level; and also to the traditional institutions that have evolved in particular community.

The present section focuses on informal institutions. These institutions continue to play important role in natural resources management such as in defining access to natural resources, mobilizing resources and regulating their use in order to maintain a long-term base product activity, sanctioning trespassers, or in mobilizing rural communities towards improved management of natural resources (Mowo et al. 2013: 1; 8).

Studies on indigenous people have discovered that rural communities live in well-organized set-ups structures, made of activities and interactions with the environment. Households, kin groups, hamlets and villages are the main actors through which local communities are organized. Such structures are local institutions through which community aspirations are fulfilled. They are highly path-dependent, dynamic, and develop with society according to the needs (Mowo et al. 2013: 8).

There exist numerous traditional institutions in African society. Traditional institutions in Ghana for instance include: traditional leadership, traditional healers, ritual forests, traditional midwives; and taboos, sacred sites and practices. These institutions play key role in natural resources management (Kangalawe et al., 2014: 471). In Tanzania, family/clan, traditional leaders, chieftainship, are the main indigenous institutions dealing with land management. In Ethiopia, as also in Tanzania, local institutions related to natural resource are: land institution, livestock institutions, labor institutions, mutual sharing institutions, health institutions, traditional beliefs, traditional leaders, recreation institutions, conflict resolution institutions. Clans' leaders control lands. They own sacred forests that are used for ritual or other functions (Kangalawe, et al. 2014: 484; Mowo et al. 2013: 14). Traditional authorities' institutions (chiefs, clan heads, family heads and diviners), indigenous groups, and organizations as well as the societal norms, also ensure resource management.

Traditional leaders are part of the indigenous informal institutions. At the same time, they are "living institutions themselves" (Mowo et al. 2013: 162). 'Indigenous institutions' are also referred to "the leadership structures within the community (chief, queen mother or clan heads) and their functional roles, which ensure that the norms and values of the community are respected" (Sunetha 2010: 54). In Africa these institutions have developed over many hundreds of years. They served African people during wars, slavery, famine, freedom struggles, economic and political restructuring, and in natural resource management and during colonial periods. They embody historical and lineage alliance with their territory that empowers them with important rights and obligations. Their primary functions are to ensure peace and harmony in the rural communities (Bonye 2008: 21). Thus, "indigenous institutions play a significant role in the adaptation to climate change and variability. As regularized practices, they are important in shaping natural resources management" (Kronik and Verner 2010b: 160).

Traditional indigenous authorities concretely play the roles of: regulating access to land, mediating disputes over land, thefts of crops, misconduct, and ensure ceremonies and sacrifices; mobilizing people for community activities. In some villages, traditional authorities are local administrators. In Ghana, for instance, they embody social norms, values and practices that may be antithetical to the development of the community (Bonye 2008: 21). In Kilimanjaro Region (Tanzania), they are wise men and women who have earned respect due to their involvement in solving existing problems in the society. They were integrated in the village government through Village Land Councils, which deal with land-use conflict resolution and raising awareness about tree planting for soil conservation and border demarcation. Leaders share their experiences while the rest rely on trainings offered by the government and civil society organizations (Kangalawe, et al. 2014: 484).

The overview of the local communities' strategies to cope and deal with land degradation has shown that local people have mainly depended on traditional practices and adaptive solutions. It has also shown the significant role played by traditional institutions, versus traditional leaders' institution, in the community and activities. Generally, leaders act as mediators between farmers, with other actors, or with the spiritual realities. They are controllers and advisors of the land and community. In the early societies in Southeast Asian countries (Scott 1976: 11; 51), leaders acted as "patrons", "protectors" or "landowners" and money lenders, who also claimed the peasants' lands. They used their surplus to provide crisis subsistence insurance to their clients. Still, form this, many questions could be raised on consequences resulting from new initiatives or decisions. Some like Scott mentioned rebellions, deaths, revolts or production decline, even leaders 'claiming of farmers' resources (Scott 1976: 194–201). However, Scott's argument does not necessary apply to most of the African contexts. Since in some societies land is kept by clans; land owners institutions and chiefs do not own land for themselves. The case study will provide more insight on it.

3. Local People's Strategies Shaped by Traditional Leaders: Case Study Evidence in Yassa-Munene Village

3.1. Overview of the Yassa-Munene Village

Yassa-Munene village belongs to the Ambuun ethnic group, located in the central-west part of the Democratic Republic of Congo. It is specifically situated in these administrative entities: Kwilu *Province, Territoire* of Idiofa, *Secteur* of Yassa-Lokwa and *Groupement* of Thsim-Angung. The Ambuun population is estimated between 800,000 and 1,000,000 people (Awak 1976).

The Ambuun is one of the ancient ethnic groups to occupy the region since the 14th century. They are established on the land lying between the Kwilu River and the Lubwe River (Awak 1976). Yassa-Munene village is situated 700 km away from the capital city, Kinshasa. It is one of the ancient Ambuun settlements in the region. Until the 1960s, the village had large influence over one third of the Ambuun region, as it was the chiefdom of the chieftaincy (*chefferie* or *groupement*). Until the 1970s the chief of *chefferie* governed more than 80 villages. Most of the Ambuun living in the eastern part of the region originated from Yassa region. The village's population is about 820 people.

The village is administrated by the chief of the village, appointed by the formal authority. He ensures security and enforces rules, besides traditional institutions. The village traditional institutions are: the chief, land owner or *chef de terre*, elders, clan and witchcraft men, households, norms, dancing organizations and working organization.

The chieftaincy institution while being local, was introduced by the colonial powers. The first chiefs in Yassa region were chosen from Yassa-Munene village, from the leading clan of *Oluum*. After administrative reform, they kept only land ownership (*chef de terre*) institutions. The *chefs de terre*, from *Oluum* clan, are the most legitimate governing institutions. They are sacred. They still play important role in natural resource management. No important decision is taken without their implication. Besides the leader institution, there is a woman institution, *ngaa mpio* (woman in charges of land and blessings). She is from the clan *Oluum*, works with women, and decides on the location for activities. Witchcraft men's institution instead works as mediators between the divinities and the leaders, and with people. Along with these larger institutions, the village is divided into smaller institutions like clan and household heads. The heads of clans hold direct power over people and land. However, they leave important decisions on resource management to the *chef de terre* (the minor decisions are left to farmers on the fields). This village is divided into eight clans (*mbil*), sub-clans (*ikaan/iyor*), families (*ndzo*). The principal clans are *Oluum* (*Ongaa*), *Ampur, O'luum, Ekong, Inyey, Isaal, Iliop and Akang*. The leading clan is *Ongaa*. In spite of the changes and distortions that occurred in society and culture due to colonization, dictatorship, and Christianization, some of the village institutions have survived.

The village is situated on the savanna plateau. The subsistence activities are mainly small scale

agriculture, hunting, gathering, fishing, and animal domestication. The products are mainly destined to household consumption although they are also used to commercialization. The major crops include millet, cassava, peanut, maize, rice, squash and beans. To maintain fertility and enhance productivity, they practice agro-forestry, intercropping, use the manure and mulch. The tools are hoes or machetes. The village land tenure system is customary system. Land is owned by clans. At the same time, land belongs to the state according to the 1973 General Property Law (Law No. 73–021), that acknowledges to the state the ownership of all land (Raeymaekers and Koen, 2004).

The major threat in the village is land degradation. Before the 1600s, most of the forest-savanna areas were considered as virtually uninhabited virgin land owned by the Ambuun people (Awak 1976). Until the 1970s, land around Yassa-Munene supplied food and other services. However, pressure on the land has been increased by the number of clans that migrated into the village, increase activities, economic and political problems in the 1960s and 80s. Political and religious ideologies based on colonization, dictatorship and Christianization, have aggravated the situation and weakened traditional institutions. Currently, the major degradation problems are: Production constraints, deforestation, decline in soil fertility, and soil erosion. These problems in turn have caused shortage of fertile land, food insecurity, conflicts, loss of biodiversity, and others. The next lines present indigenous responses to the degradations.

3.2. Local People Strategies in Yassa-Munene Village: Indigenous, Introduced and Innovative Practices

In order to deal and cope with the degradation, farmers in Yassa-Munene village rely on a variety of strategies that are mainly indigenous, introduced or evolved. The practices consist of agronomic, non-agronomic strategies and other social life adaptations. The major agronomic practices are:

—*Intensification* practice exists for centuries. It consists of using intensively the same unit of the land, then leaving it to regenerate and moving somewhere else;

—*Agroforestry* and *fallow* are also ancient practices used to increase productivity and repair land. Ambuun people plant trees in the forests, village or in the farms; or they just leave the plant standing on the farm for ecological, meteorological, aesthetical, and medical purposes. When land is reforested, it enables the development of biodiversity;

—*Intercropping*, *rotation* and *mix cropping* are also old practices being used. The combination of diverse plants in the same plot increases productivity and reduces plants vulnerability to diseases. Squash, peanut, cassava, sorrel or other are often grown together;

—*Introduction of new crops and new crop combinations* as strategies is also ancient practices in use. To the historical crops (millet and Ambuun peanuts, *Ndzu Ambuun*), new crops were added: cassava, new peanuts variety, maize, rice, beans and squash. With the decline in peanut yield, in 2012, 2013 and 2014, the village adopted beans (*Niebe*) and hemp;

Table 1 Farmer's Reasons and Advantages of Using Traditional Farming Managements

Local solutions	Reasons
Intercropping, mix- cropping	Food, medicine, shelter, less labor, soil fertility, cheap, prestige, dignity, time and energy saving, maintain diversity, space; weed and pest control
Manure	Weed control, soil fertility, local materials, less expensive
Mulching	Weed control, less labor, no input, local materials, less expensive
Agro-forestry	Sacred site, preserves history, dignity, shelter, less labor, soil fertility
Crop rotation	Good yield, less labor, not expensive
Fallow	Fertility, plant maturity, good yield, no input, sacred sites, historical means

Source: Author's fieldwork

—Farmers also use *manure* in farming. The use of chicken and goats' manure has longer history than the use of manure from cows. Likewise, the *mulch* is used in the farms. Before, farmers used herbs cleared in farms as mulch; recently the leaves of a plant called '*sekoper*' is used;

—The use of *furrows and mounds* is also an ancient practice. The Ambuun farmers use furrows in farming to avoid or stop soil erosion across the field. Furrows are mostly constructed within farms situated on slopes. However, for farms situated in flat land, they make mounds.

The major reasons for the above agronomic practices are summarized in Table 1.
Mechanisms and reasons for adopting these practices can be applied to individual farmer. For each mechanism, the leaders' role has been capital.

Besides the above agronomic mechanisms, other farming related adaptations were:

—*Construction of fences around farms:* Some of the failures in crop yield were attributed to livestock left in divagation, that destroyed the farms and crops; thus to protect plants against livestock or wild animal, farmers constructed stick fences;

—*Extending farm size and diversification of plot parcels*: Traditionally, the Ambuun practiced intensification. Extending the farm size was not the priority. With the recent declines in major crops and wild biodiversity, farmers extended the size of their farm. Many multiplied farm parcels for the same crops, in order to increase productivity. Women cultivated diverse bush land parcels of the same crops in different areas (in *Nto-Lankoon* region, 8 km away; and in *Lankaam* region, 17 km away). In 2013, each owned two parcels of cassava;

—*Abandonment of traditional crop and activities*: Due to failure in peanuts in 2012 and 2013, more than 60% of women did not cultivate peanuts in 2014. Likewise, men did not cultivate rice. In 2014, only 3 women cultivated Ambuun peanuts variety. The crop variety was abandoned because it is time and labor demanding; and it is not well accepted on the market;

—*Killing, selling and destocking* livestock were the other life strategies in the village. Between 1990 and 2010, disputes were reported between livestock owners and farmers over the destruction of

Table 2 Farmers' Strategies to Cope with Land Degradation

	Farmers' responses to land degradation	% (n)
1.	Constructing fences	90 (36)
2.	Building on furrows, enlarging furrows intervals	80 (32)
3.	New crops adoption and New crops combinations	90 (36)
4.	Extending and diversification of farm parcels	90 (36)
5.	Abandon of traditional crops	90 (36)
6.	Killing, selling or destocking livestock	80 (32)
7.	Diversification of sources of income	2 (0.8)
8.	Other traditional farming mechanisms	70 (28)

Source: Author's fieldwork data, 2014.

crops by the animals. The destruction caused yield declines. In order to reduce pressure on the farms and avoid conflicts with farmers, for example, Mr. Yongo, a village cow owner, decided to destock his cows to Inyekongo village in 2010. Likewise, Mr. Kayong, another cow owner, decided to kill some of his cows in a single day and later sold all the remaining;

—*Diversifying sources of income*: From the 1980s, farmers already begun diversifying activities and sources of income in non-agricultural and in petit commodity production. Adding to local historical livestock, two cows were brought in by chief Ndandula, as he had introduced rice cultivation. The Other activity chosen has been commercializing of *raphia* craft products in cities. Another activity is traditional fish pond making along streams. In 2014, six people involved in.

Beside the practical resource management solutions described above, the Ambuun people hold a body of symbolical knowledge that support and play an important role in land management (but not discussed here). This refers to traditional institutions, rules, ceremonies and rituals.

This section has given evidence on farmers' land management strategies to deal with land degradation. Table 2 has shown that farmers' higher interest to improve the situation has been placed on adopting new crops and new crops combinations, traditional practices or suppressing some, and changing activities. The next section instead shed light on the farmers' reasons and decisions to adopt these strategies in the village based on the particular role of the traditional leaders.

3.3. Understanding Farmer's Strategies, Decisions and Emergence in Yassa-Munene Village

The analysis in this study relies on the *Traditional institutional structure for natural resource management* framework (Figure 1), used in some African countries. The analysis focuses on the role played by the traditional leaders' institution. It operates at all levels of local institutions and affects all the categories of framework. Leaders influence and condition land users' decisions on land management. Besides the role of mediators or rule enforcers played by traditional authorities in natural resources management (Agrawal 2010; Bonye 2008), they have a more special role. Leaders,

in this study, are required to take the lead, act as models and try the innovations before advising innovations to others. Because local land users often adopt easily practices that leaders have applied personally.

The above arrangement may contrast with common image of African traditional authorities that only command and let other do. But, in this case study, the nature of the situation and cultural attachment require full involvement of the chiefs, who take risks for people's survival. Since leaders are intellectually and culturally well equipped than others. From their younger age, they are prepared to govern and control land. They have been taught local history, story, norms, geographic situation, and past problems and solutions concerning land. From previous generations they have received the *Ntsim*, oral information about past leaders, events, calamities, successes and dreams of the village. Leaders have also developed important relations with neighboring chieftaincy, villages or clans. This 'potentiality' placed leaders in a better position to initiate innovations.

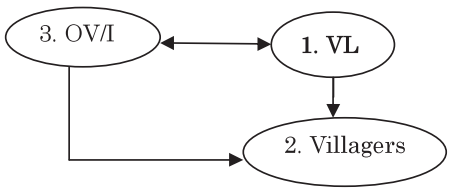
In spite of all these potentialities, past land degradation situation and diverse solutions proposed have attempted to ignore indigenous people and leaders' role. So, the examination of the data from a chronological, historical, and institutional perspective adopted here, on one hand brings forefront the role of traditional leaders in the local strategies. On the other hand, examines the reasons behind farmers' decisions to adopt the strategies during different periods. The figures in each section of the analysis show the role played by different actors, in order to point out the special role played by the traditional authorities in enabling adaptive solutions. The analysis (in following sub-sections) focuses on three periods: from the village initial situation, the changing situation, and during recent initiatives undertaken by different actors.

3.4. Different Actions and Decisions Prior to External Interventions

This first period broadly includes the time between the 1920s and the 1980s, corresponding to what the informants designated globally as *'good epoch'*. It is considered so, in spite of changes and troubles that disrupted the indigenous political, cultural and ecological heritage. This period can be portrayed as a moment when the Ambuun people continued to enjoy harmony within their environment. The land was productive in some degree. The major solutions often chosen by farmers to deal with problems they faced, have focused on the indigenous mechanisms such as agroforestry, crop rotation, intensification or others. They also relied on life strategies such as community solidarity to borrow or lend services. The destructive process was prior to this epoch and continued even after. Some of the cultural elements sustaining resource management had survived. The traditional authority continued to play a central role in society and in resources management.

During this period, no serious initiative for development was undertaken by government or external actors to improve life and encounter land degradation. Development efforts in this village were limited in education, which served colonial interests and objectives. However, their attempts in 1930s to

Figure 2 Different Actions and Decisions in Yassa-Munene: Period 1



Note: VL (Village Leader), OV/I (Other Villages/Individuals)

establish a small school and a catechumenal center, failed.

While there was confusion, farmers continued with the traditional way; and simultaneously, some of the adaptations and innovations were taking place. For instance, to the Ambuun traditional crops (Ambuun peanuts or *Ndzu Ambuun* and millet), sorrel, cassava, maize or rice were added. The adaptation procedure was always through the leader who tried the crops first, before allowing the community to adopt them. When a solution was identified, the chief sent his envoy to buy, borrow, or steal the new practice. He adopted and tried the practice on behalf of the community.

Most of the successful adaptation that occurred during this period were possible through the leaders rather than by the formal authority or the individuals' initiative (see Figure 2). Rice cultivation and domestication of cows were introduced by the chief Ndandula. When the practices proved successful, other people were then allowed to adopt them.

Evidence in this section has shown that traditional and adopted practices in the 'first period' have continued or have been possible because the leaders themselves promoted them to their subjects. Although the government has limited local leaders' influence, it did not succeed to suppress totally their influence on land management. Local leaders continued to enjoy people's support. Their mutual trust allowed people to survive in a declining environment. The successful adaptations strategies mentioned above indicate a clear participation and initiative by the chief rather than by outsiders or by the individual subjects.

In Figure 2, the authority (VL) has a comfortable position to implement decisions over villagers. He is the center, keeps the relation with external actors in other villages (OV/I) that can influence individual community members. The leader's relation and exchanges with OV/I is represented by double arrow. But the one direction arrow explains the influence of the VL on villagers; the other one direction arrow used between OV/I and villagers, represents the minor relation between individuals. Actors such as government agencies are not represented in the figure because of their antagonisms and insignificance investment in the village during this period. The outcome was that during this period, what the leaders enforced had been adopted almost by all farmers (100%). For instance, the ancient variety of peanuts and cassava had been adopted by all farmers. The figure shows also that

some village individuals developed private relations with OV/I, although their influence was limited.

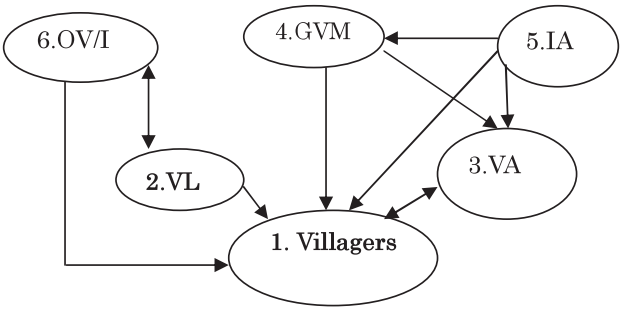
3.5. Different Actions and Decisions during the External Interventions

Contrary to the previous period, during this period Yassa-Munene village experienced some interventions and initiatives from diverse actors: the government, international organizations, NGOs, and local associations. The period considered is broadly situated from the 1980s to the 2013s. The interventions were intended to respond to the ongoing past political, economical and environmental problems in the country. During this period, poverty and land degradation were identified as major issues to tackle by national government. Funding, subsidies, seeds, tools were provided to farmers. Creation of local associations, and cooperatives were encouraged. The lines below provide the names, goals, actions and outcomes of some of external or local associations in the village:

- *DALU* (1990): An extension of a local association created in Bwal-Lakwa village; aimed to reforest the land with raphia palm trees; there was very poor adherence and no work was undertaken.
- *CPCO 30th members* (2005): Church members' organization to support community activities; raising chickens. Activities discontinued.
- *ACDR* (2007): Supported by UNOPS; to help local agriculture, provide subsidies, cassava, peanuts and maize seeds, and working tools. Very low adherence; very low harvest; disputes between UNOPS coordinators and the local farmers at the harvesting stage.
- *Mam-sangol* (2010): Extension of an association based in Idiofa town; for farming activities; Only 4 women participated.
- *Association of cow owners* (2011): to keep animals in a common kraal, to avoid animal roaring; to use the kraal's surroundings for gardening. The initiative failed.
- *Com-a-sol* (2013): Initiated by PALU (political party); to reinforce farming activities by lending tractors; but disputes between coordinators and farmers on working location. Enthusiasm at the beginning, but dropped later.
- *Village agricole* (2013): Initiated by provincial government to support farmers working capacity with lending the tractor and seeds; farmers in turn paid 30% of the crops harvest. High adherence. Good crop result, but no follow up. Project was abandoned.
- *Women association* (2014): For communal activities and keeping cash together. In progress.
- *Fish pond association* (2014): to diversify the sources of fish production. In progress.

Local associations described above involved directly people in community, rather than letting traditional authorities take the lead. These initiatives considered the community as homogenous unit. The social class distinctions were not taken into account. They just looked at the traditional hierarchy as an additional burden to local community, which they needed to break. This caricature was so strong

Figure 3 Different Actions and Decisions in Yassa-Munene: Period 2.



Note: VL (Village Leaders), VA (Village Associations), GVM (Government), IA (International Agencies), OV/I (Other Villages/Individuals).

that traditional leaders were kicked out of any development initiatives. Thus, most of the outsiders' initiatives failed.

While outsiders' initiatives and innovations were being tried, local people were still using the traditional practices such as agro-forestry, mix cropping or others. Leaders in the village were still playing a role in the choice of working sites and activities. Their role proved also to be important in the innovations that occurred. Local farmers rejected most of the seeds proposed by outsiders; they adopted instead, squash crops and new variety of peanut (*ndzu omboom*) in the 1980s, brought from a neighboring village by a female leader (Eyen). Back into the village, she tried the crop for the first year. When the result was successful, she recommended the crops to all community members. Likewise, during this period the domestication of sheep was also introduced by chief Kalata in 1985.

Farmers' strategies adopted during this period coincided with the aggravation of land degradation and with the different actors' attempts to promote development. There was a temptation to conclude that, these were main factors in farmers' decisions to adopt new solutions. However, the analysis demonstrates that reasons of the adoption of innovative solutions are as in the above period. Farmers followed what the leaders advised and had tried themselves. The examination shows that the adoption of squash and new variety of peanut in this period (by 100% of farmers) was not due to the government or its partners' campaign to improve the situation. But, because the leaders had brought the crops into the village for all and had tried them before advising to others. Culturally, it was through him that new practices were supposed to be introduced, but not by ordinary farmers.

Similarly, it would be tempting to believe that the rejection of new solutions occurred because the actors failed in promoting properly new solutions or because the cash and subsidies were insufficient. The reality was that it is because the procedure was wrong. The indigenous way of transmitting decisions and implementing them was not followed. The external actors approached directly the community, but ignored the community leaders.

Figure 3 shows the relation between the actors that operated in the village during this period.

Villagers are considered as focus of the actions; but the decision for actions is taken by the external actors (IA, VA, GVM). The local leader (VL) is isolated, although he still keeps some relations with the community and with the neighbors (OV/I). The 'one direction' arrows demonstrate the influence and supports of all the actors on villagers. They show also the influence and support of the GVM and IA on VA. The figure shows then that there is collaboration between the GVM, IA and local villagers, since the local associations were created or received support of the external actors. However, the actors' actions in the community were not coordinated. Consequently, the adaptations failed. The 'double arrow' explains the mutual collaboration and influences between the OV/I and VL, and between the villagers with the VA.

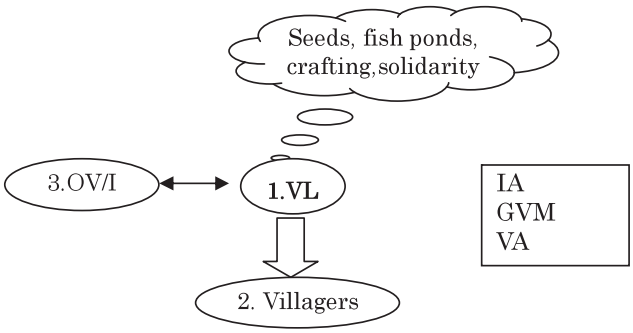
3.6. Actions after the Initiatives: Development of New Practices

This period can be situated between 2007 and 2013, and after. It intervenes immediately after that the village experienced failures of the past internal and external development initiatives. Just as in the past, here the role of leaders in land management is still not fully acknowledged. However, contrary to the previous period, this role is been recalled back. The decline of the local knowledge and practices did not mean the end of the indigenous wisdom. There have emerged numerous innovations involving local strategies. In spite of the lack of serious investment in the village, local solutions worked with the help of the traditional institutions, through the leaders.

Recently, more than six men have been trying to make fish ponds, as out-farming activity. Since 2012, several of them were involved in the cultivation of hemp and beans. When the harvest proved successful, other people joined the activities. The examination shows that the activities were successfully adopted because chief was involved, through his nephew and son (considered as 'chiefs'). Because the chief decided on the working sites and on new species of plants and fish to be introduced.

The above explanation confirms the importance of the village leaders' (VL) involvement in the adoption of new activities and practices during this period (seeds, plants, fish ponds, crafting and solidarity), as shown by the 'cloud callout' in the figure (Figure 4). The 'big arrow' used in the figure shows concretely how the role of the VL has been central, in spite that the external actors were not involved (as in the previous period). Figure 4 has not identified serous actions initiated by the IA, GVM or VA in the village. During the last 5 years actions and impacts of these actors towards villagers have been insufficient that in the figure no arrow portrays the relation between them. The figure does not either present the little knowledge transactions between OV/I and villagers. Since most of the recent innovative attempts are not yet being adopted. For instance in neighboring Kimpata-Lokwa village, farmers were using a solution made of goats' urine and waste to protect plants (raphia) against livestock destruction. Since, none of the leaders has tried it in the village, farmers have not either adopted it. Instead, using a 'double arrow', the figure shows mutual exchanges between the leaders and other villagers.

Figure 4 Successful Innovations in Yassa-Munene: Period 3



Note: VL (Village Leaders), VA (Village Associations), GVM (Government), IA (International Agencies), OV/I (Other Villages/Individuals); Cloud callout represent VL' strategies and options.

The analysis reveals that the reasons why individual farmers do not take the initiatives themselves is because they believe that new attempts may lead to adverse consequences such as crops collapse, disease or 'ancestors' fury'. Thus, the chief had to take the risk for all. Since he is considered as 'well informed', 'educated', 'expert', 'sacred', and because he has been trained in land management more than ordinary farmers. He knows land and crop history; and has been taught about past problems by the ancestors.

The tradition authority' position in Figure 4 indicates that he remains opened to adaptation and cooperation with external actors.

4. Conclusion

This article has examined local farmers' strategies to cope with land degradation in Yassa-Munene village. It has particularly analyzed farmers' reasons and decisions to adopt land management practices; and has tried to understand the role played by local traditional leader on farmers' choice of adaptive solutions.

In order to understand how local farmers manage their land, what strategies are used to cope with land degradation, and what benefits do farmers obtain from managing land in the traditional way, the findings and documentation have shown that the major strategies included: agroforestry, mix-cropping, mulching, rotation, manure; extending and diversification of plots, abandoning of traditional crops, new crop adoptions, fencing; destocking, adoption of new crops and practices, and off-farm activities. However, to understand what influences farmers' decisions, the analysis demonstrated that farmers' reasons and decisions rely on the role of 'key actors', 'risk takers' played by traditional leaders.

In respect to the analysis of farmers' strategies and factors influencing their decisions, previous studies have often associated indigenous practices and decisions to various purposes such as: farmers'

need in assets, cost and benefits of the solutions applied, habit, behavior, tradition, biophysical condition or formal and informal institutions' influence. The role of the leaders in indigenous communities has often been limited to the simple mediators and advisors, and controllers of resources. And in other situations they have behaved as "patrons" who claim peasant resources. However, this study argues that basing the analysis by looking only at the availability of assets, the cost and benefits, rule, participatory capacity of the local community; or basing the analysis only on farmers' own decisions, may ignore the decisive role played by traditional leaders themselves in the effort to cope with land degradation.

Thus, through using the *framework for traditional local institution analysis in land management* (Bonye 2008; Mowo et al. 2013), this study argues that in the village, the role of traditional leaders has been crucial. In difference with other societies, leaders here do not only control or mediate things. They are rather key players, exemplars, risk takers, models and first to try innovations before advising others. They are the only people to introduce innovations like new crops and new practices; because they are the 'well-informed' and 'most educated' in land management. From their younger age, leaders have been taught and transmitted local story, history, location and past problems, and solutions on land. They have developed ties with neighboring villages' leaders than any ordinary farmers. They were expected to try innovation before others, and to take risk on behalf of all. Because, innovations can always turn into adverse consequences like failure, diseases or famine. However, individual farmers should not be seen as passive actors who merely wait for leaders' decisions. This should be seen rather as part of their cultural task sharing, solidarity and way to enable trust. There exist initiatives that farmers take at the farm or community levels that do not require in advance, leaders' decisions. Recently, the most important adaptive strategies (among several), have been 'adopting new crops and new crops combinations' (90%); and 'the re-focus on the traditional practices' (see Table 2). Leaders have always enabled these adoptions. This shows that each social class played its role without regret or suspicion. To understand this role, there is a need to refer to the role that leaders played in the past, when religious conversion or the conquest of the community in Africa were done through leaders, then followed by their subjects.

In order to illustrate particularly the leaders' role, the analysis showed how within three periods the leaders have remained key figures in adapting solutions. Although this global agreement, it can be noted in each period, different aspects of the leaders' role:

First, the analysis showed that prior to external development initiatives, peasants relied only on local knowledge and practice (although progressively they adopted new practices). Leaders' role was more central than the role of the external actors or the individual villagers. Traditional and adopted practices in this 'first period' continued or have been possible because the leaders themselves promoted and applied them before farmers. However, in contrast to the two other periods that followed, here the leaders still enjoyed larger political, social and spiritual authority on people and their decisions; and

faced very little internal contradictions. The colonial power and missionaries' major goal was to convert peasants into Christianity and appoint formal authorities. When the colonialists established the *chefferie/groupement* and *secteur* entities, the traditional leaders were chosen to become first chiefs. Thus, the chief hold both formal and informal authority. In exchange, they kept secret some of the traditional practices. However, when removed from the official positions, these leaders still continued most of the practices in secret.

Second, while external initiatives and innovations were being tried during the second period, local people still used traditional practices, and the traditional authorities were still playing a role in the choice of activities and innovations. The reasons of the adoption of new crops and practices in this period are actually as in the other two periods. Farmers follow what leaders advised and practiced themselves. The adoption of squash and new variety of peanut in this period was not due to government or its partners' campaign to improve the situation. But it was attributed to leaders who personally had introduced the crops into the village for all. Similarly, it would be tempting to believe that rejection of some of the solutions were necessary because the external actors failed to promote properly new solutions or because the cash and subsidies were insufficient. But, in reality it was because the procedure was wrong. The external actors approached directly the community, but ignored the leaders. However, unlike in the above periods, here traditional leaders were not associated into formal leadership; and they were challenged by national authorities who suspected them of encouraging rebellions. Thus, all meetings became suspicious; their role was limited in mediating land disputes exacerbated by state's absenteeism and economical crisis.

Third, recently (in the last period) there have been numerous innovative strategies that evolved in the community. In spite of the lack of proper investment, local solutions continued working with the help of the traditional institutions and leaders. Presently the leaders' role is once again becoming capital in the strategies and adoptions of crops as evidenced by examples. However, unlike in the two previous periods, they play very limited political role. Still, they remained symbols of unity, informal guardians of the customs and the land. They are incorporating Christian and traditional rituals and practices in cultural practices. Leaders are being given enormous responsibility than before. Since, the past political, social and spiritual reform have not improved local situation; the state and the Church failed to provide basic services, and they are almost absent in the locality. This fact has called traditional leaders to more responsibility: 'to educate', organize and resume traditional medicines provision, and mediating conflicts.

From this case study some lessons can be learned:

First, the occurrence of land degradation, assets limitation, deficit of external support did not stop local initiatives to evolve. The degradation has actually been an opportunity to understand traditional practices' values, and also an opportunity for new practices to evolve. Thus, this study far from being a romanticization of traditional society and a mere call for return to ancient practices, it is rather a call

for ‘rediscovery’ of indigenous wisdom.

Second, this study provides insight on the role of traditional leaders in implementing adaptive strategies within the community. Beyond the mostly known role of (African) traditional leaders in natural resource management (sacred, controller, almighty), leaders are also the major actors, models farmers, risk takers, exemplars, or even ‘servants’.

While this study acknowledges that leaders’ role can provide vital social insurance during crisis and encourages trust in the new attempts, it also acknowledges that in the future this role can become an obstacle for peasants to voluntary take initiatives without depending on the leaders. Besides that, the weakening of traditional institutions, the changing socio-political and ecological situation, and the inaccessibility to various assets, may not enable leaders to be up-dated and continue to play their historical role in the modern context. This could result into adverse consequences such as land degradation, poverty, famine or conflicts.

Notes

1 *Traditional leader*/authority refers to land owner (*chef de terre*) or to closer family members of the chief, from *Oluum* clan.

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