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**Land Tenure, Environmental
Degradation and
Desertification in Africa:
Some thoughts based on
the Sahelian example**

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SUMMARY

This document examines the links which exist between land tenure and the fight to combat desertification in Africa, with reference to the Convention on Desertification and the associated National Action Programmes. Bearing in mind the breadth and complexity of the subject, the author has focused particularly on the landholding arrangements which prevail in the Sahelian countries of West Africa, especially Niger, Burkina Faso and Senegal.

Complex and diverse customary tenure regimes which are constantly developing

The first section seeks to draw out the original characteristics of customary tenure regimes in the Sahel. It is noticeable first of all that such regimes apply to a vast range of resources, going far beyond the status of the land itself, encompassing access to surface and underground water, herbaceous and woody vegetation, minerals, wild produce which may be gathered and even wild animals.

Access and usage rights applying to these resources are also remarkable for their diversity. Depending on the local environment and land use practices, there is a vast array of land tenure regimes which result not only from physical, geographical or economic factors, but also from the user communities' forms of social organization. There can be a vast body of rights over a resource, ranging from occasional, seasonal gathering rights through to priority and exclusive rights. In the same way, between the two extremes of access, open to a large number of users and to a restricted community or even one family, one may also find a plurality of users, sometimes of the same resource.

There does, however, seem to be a constant factor in that land retains an eminently social and collective character, whereas formal, modern ownership is more rare. Use of resources thus fits the pattern of exploitation of land as a common good and therefore a multiplicity of land tenure situations may co-exist in the same area and even relate to the same resource. The natural environment has a social dimension rather than being seen as individual property. Despite its apparently public nature, pastoral landholding does not fall outside these rules, having codes of access to water, pasture and various

strategic resources (such as *bas-fonds*, salt licks or flood-retreat pasture).

Land tenure systems seem to be more endogenous than traditional, as they establish particular arrangements according to the problems, potential or constraints encountered. This means that customary land tenure regimes are constantly evolving. Depending on ecological, economic and historical circumstances, different bodies of rights are found, which are sometimes shared between several users and may also affect the same resource.

Modern legislation is often cumbersome, inappropriate and difficult to apply

The second section attempts to bring out the main characteristics of modern tenure legislation. Bearing in mind recent history, such legislative frameworks often appear heavy and complex. Legal texts proliferate, but without getting to grips with the infinite diversity of land tenure situations which exist at local level. Moreover, the space they allow for private property is not insignificant, whereas the principle of exclusive rights and individual appropriation of resources is treated in diverse ways by customary regimes.

This cleavage between a modern view of private property and the complexity of resource access and usage rights makes it difficult to establish legislation within which these two different perceptions could converge. After independence, Sahelian states therefore had to put up with stifling legislative regimes which tended towards centralization, providing a model but no instructions for use.

Modern land tenure laws are therefore still applied with difficulty and in an uneven manner. Modern law is often unknown to communities because legal texts are not very accessible to them and remains very complex to interpret. The legislative apparatus is often beyond the reach of people in rural areas. In the event of conflict, recourse mechanisms are time-consuming, complex and often ignored. Their impact on land management is not, however, neutral, even though customary law remains paramount in settling conflicts. Such legal procedures often bring confusion and ambiguity in the settlement of disputes. Furthermore, legal texts often provide little encouragement for investment in land and vegetation as, in the final analysis, they offer few safeguards.

Land Tenure and Management of Natural Resources: A decisive stumbling-block for work in the field

The third section shows how the ambiguity which surrounds the status of resources may considerably hinder their effective management and hence efforts to combat their degradation. Based on concrete examples drawn from the field, especially experiments in natural resource management undertaken in the Sahel over the last few years, some apparently decisive factors have been identified.

The alternation of favourable and unfavourable climatic periods is one of the first vital elements to have a bearing on the transformation of certain landholding practices. While there is a tendency to abandon certain areas which have become unproductive, other regions have taken on a strategic character, especially in the case of favourable ecosystems which are better protected against climatic hazards (such as for example riverside areas or *bas-fonds*). Demographic growth has also brought greater pressure on land. Finally, human control over resources has also been influenced by the macro-economic management context. Developments in the pastoral environment have also been striking. The pastoral area has shrunk under pressure from increasingly land-hungry agriculture. Moreover, pastoralists' control over land has been seriously affected by failure to recognise established rights and by the perverse effects of modern pastoral water supply projects.

While customary tenure regimes are still strong and play a decisive part in controlling access to resources, their room for manoeuvre is increasingly restricted. Localized or more extensive crises over land may arise in various forms, but often have perverse effects on the ways in which resources are managed. Migration increases insecurity with regard to land, as well as pressure on key resources, such as *bas-fonds*, but also on ligneous resources. Relationships between communities are often strained and the dynamics of land tenure now have to take in new private or public interests, especially those of traders and private investors who often come from the urban environment.

In some cases, the institutional context may increase insecurity in respect of land tenure where the lack of clear legislation gives rise to speculation and a race to acquire land. This means that fear of losing land makes it impossible in some regions to practice fallowing and hence to move back towards agro-pastoral techniques which have a beneficial effect on soil fertility and protect against erosion. In other cases, rehabilitating degraded areas raises complex problems with regard to their subsequent exploitation.

Future prospects: The importance of an institutional framework which is responsive to local conditions and relies on participation and decentralization

The last section considers future prospects in combatting environmental degradation, with reference to the land tenure issue. The conclusions and recommendations which are put forward within the framework of National Action Plans are based on two major findings. On the one hand, it is difficult to reconcile the application of complex, centralizing, cumbersome land tenure legislation with the diversity of customary practices which are based on different views of land and resources. On the other hand, the interaction between modern legislative provisions and existing customary regimes frequently leads to insecurity over land tenure which jeopardises considerate management of resources. Making tenure secure is thus an essential future concern.

Bearing in mind the diversity of the situations encountered, land tenure arrangements must be strictly local and appropriate not only to the physical environment but also to economic and social conditions. However, while management must in the first instance be controlled by the rural communities which use the resources, the state retains a vital role. The macro-economic framework needs to provide a policy environment (in respect of agriculture, pastoralism and energy) which fosters such control.

In the same way, it is vital that institutions should provide national policy guidelines in respect of land tenure, especially to protect collective interests. In such a context, one cannot get around the need to recognise the principle of co-management of resources by the state and local people, which is by no means unrealistic: while retaining final control over the land itself, the state may delegate the function of sustainable management to the user communities.

Consequently, land tenure and natural resource management issues have become indissociable from the decentralization processes which are ongoing in some Sahelian countries. Natural resource management provides a strategic meeting point between communities and between them and the political authorities and technical services.

However, while it is an essential pre-condition for a secure land tenure situation, decentralizing decision-making power over natural or developed resources is not an easy exercise. Preparation, training and information are vital. In rural areas, the share of all groups in the allocation of such resources is not always guaranteed, especially in the case of groups which only have

temporary or precarious rights, such as women, caste groups or transhumant pastoralists. Land tenure, decentralization and participation thus become inseparable.

Finally, the status of jointly managed resources, such as fisheries and pasture, is still a live issue. The overly restrictive notion of "productive use" does not make tenure sufficiently secure. Moreover, consideration must be given to revising the status of certain strategic resources, especially in the field of pastoral water supply which is often the keystone of land use management systems.

Conversely, systematic land privatization is not necessarily the solution nor a vital prerequisite for better management of such land. There is an infinite range of possibilities, from open pastoral areas which are nevertheless subject to controlled access through to the individual ownership of certain resources. In view of this diversity, modern, inalienable land ownership must be seen as only one option amongst others and be approached with care. In addition, experience shows that holding private, individual, inalienable rights over a resource definitely does not guarantee that it will be managed properly.

In conclusion, the document stresses that tackling the land tenure issue also means redefining the relationship between the state and user communities. Such an exercise is bound to raise questions, at a time in the history of development when the gradual withdrawal of the state at different levels is seen as an inevitable long-term trend. However, between the extremes of an absent state or one which takes no responsibility for resource management and communities holding full power, viable compromises must be sought through consultative processes at all levels. One of the immediate tasks of the Convention on Desertification should surely be to encourage such a dialogue around such a basic issue.

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INTRODUCTION

Land tenure bears directly on access rights, usage rights and, in the final analysis, man's mastery over the environment, be it natural or developed. In African societies for whom agriculture and animal husbandry are the main source of food and income, human relationships with the environment are necessarily strategic.

In regions characterized by aridity, where the instability of annual rainfall is added to demographic pressure, landholding practices can constitute a serious stumbling block with regard to land management and therefore to effective efforts to combat degradation. Amongst other things, resource management programmes implemented in West Africa since the beginning of the 1980s have shown that the ambiguity surrounding the status of land, water and vegetation may considerably restrict the effectiveness of work in the field.

This is why the National Action Programmes, within the overall text of the Convention and the Annexe for Africa, have recognized the need for an institutional and regulatory framework relevant to national resource management, which guarantees greater security of tenure for user communities.

The aim of this document is therefore to consider the links which may exist in Africa between land tenure and efforts to combat desertification, analysis of which must, however, put up with obvious limitations here. Experience in this field is as varied as the physical, social and economic conditions in the regions involved. Furthermore, land rights are very complex and rules governing water, fields, trees, pasture and mineral resources may differ considerably from one zone or group to another. It must also be recognized that changes in land

use which lead to the emergence of conflicts over land are often poorly defined. Settlement of such conflicts is very often hard to spot, especially if this occurs at the level of villages and customary authorities.

Bearing such limitations in mind, particular attention will be paid to the Sahel and, more precisely, Niger, Burkina Faso and Senegal in the western part. From time to time, reference will also be made to other regions. In the first part, we shall consider the so-called traditional land tenure regimes in Sahelian rural areas in order to determine their particular and original characteristics. In the presence of these endogenous patterns of resource sharing between the various users, we shall then examine the general principles around which modern legislative frameworks have been built, as well as their interaction with customary land tenure. Thirdly, we shall show how the status of land can have a direct influence on the way in which it is managed by communities and what constraints this places on outside interventions. Finally, in a fourth and final part, we shall look into future prospects in this field, especially with regard to the decentralization process being undertaken by some countries.

1. TRADITIONAL TENURE REGIMES

Land tenure in the African Sahel: systems covering an extensive range of natural or developed resources.

The fact that ancient, customary rules governing the occupation and distribution of land generally exist in Africa between communities is usually considered to be a commonplace. However, it is difficult to establish an exact definition of tenure there.

In fact, these rules usually apply to a vast range of resources going far beyond the soil and the land alone. This includes surface water and systems of access to underground water (shallow wells, hand-dug or modern deep water points), crops and their by-products, minerals

(such as natron), wild-gathered produce, fauna and herbaceous or ligneous vegetation. Rights over trees take many forms and can lead to a form of control over the land. The rights may refer to planting or possessing trees, to inherit or pass them on to third parties. There can also be various usage rights, for instance to pick the tree's produce, to cut down, thin out, loan or fell trees.¹

There is an infinite number of possible combinations between these various natural or developed resources. The farmer's or herder's perception of the environment encompasses natural phenomena as well as what is useable. This perception is also dynamic in both time and space: forms of use may change as a result of various influences such as climate, drought and developments in the production system.²

Many researchers have therefore looked into the perceptions which rural African communities have of the environment and have shown that geographical units are identified by physical characteristics, a particular set of dynamics, use and practices.³ For instance, amongst herders on the Adamawa plateau in Cameroon, plant formations have different names according to the nature of the herbaceous stratum and the modifications it undergoes through the seasons.⁴

During the UNESCO programme on Man and the Biosphere (MAB), a study conducted in the north of Burkina Faso showed that agro-pastoralists split territory into segments spreading from the rocky summits to the drainage lines, which each corresponded to a soil-

¹ Emile Le Bris, Étienne Le Roy, Paul Mathieu, *L'appropriation de la terre en Afrique Noire: Manuel d'analyse, de décision et de gestion foncières*, Karthala, Paris.

² Chantal Blanc-Pamard, 1988, *Lecture du paysage, une proposition méthodologique in La Dégénération des Paysages en Afrique de l'ouest*, edited by J-F Richard, Dakar Seminar, 21st to 26th November 1988, 310 pages, pp. 269-280.

³ Amongst others, we should mention the research work of C. Blanc-Pamard (1986), J. Bougere (1981), J. Gallais (1984), J. Hurault (1975), D. Kintz (1981), J-Y. Marchal (1984), J-F. Richard (1995) and G. Sautter (1983).

⁴ Jean Hurault, 1975, *Surpâturage et transformation du milieu physique. L'exemple des Hauts Plateaux de l'Adamaoua (Cameroun)*, *Études de Photo-Interprétation*, no 7, IGN, Paris, 218 pages.

vegetation complex with a particular use⁵. The "ferro", for example, is found to the South East of Dori, meaning the high plateau where the trees provide browse in the dry season. In the rainy season, grassy pasture grows there but only in patches, making it of limited interest for the herds. The "tiekol", found downstream, is the clayey *bas-fonds* with its heavy soils which is a favoured area for growing cereals. Between these two extremes, almost ten other types of landscape are identified.⁶

Complex and diversified resource access and use systems

In this context, the establishment of resource access and usage rights can only be complex. Since environmental conditions and land use practices may vary considerably from one place to another, customary tenure is first of all striking in its diversity: there are a host of land tenure regimes resulting not only from physical, geographical or economic factors, but also from the forms of social organization of the communities involved. A group's relationship with the land is in fact closely linked to the way it functions in social, political and economic terms and its cultural foundations.⁷

In Niger, Sidikou⁸ identifies four major tenure regimes:

- The Saharan highland or lowland tenure system which

⁵ Danièle Kintz, 1981, *La perception de leur environnement par les populations sahélicennes. Une étude de cas : Sainnibo Na'i, Haute Volta, Projet MAB 13, Paris, UNESCO, 106 pages.*

⁶ Programme Sahel Burkinabè, 1992 situation socio-économique du Département de Sebba (province du Seno), *Projet de Développement Intégré de la province du Seno (UNSO/BKF/90/01), Dori, Burkina Faso.*

⁷ CILSS/Club du Sahel, 1994, *Le foncier et la gestion des ressources naturelles au Sahel, Synthèse régionale pour la Conférence Régionale sur la Problématique Foncière et la Décentralisation au Sahel, Praia (Cap-Vert), document prepared by Gerti Hesseling and Boubakar Moussa BA, with the co-operation of Paul Mathieu, Mark S. Freudenberg and Samba Soumaré.*

⁸ Sidikou A. Hamidou, 1982, *Evaluation des politiques foncières en Afrique Noire, Niger, Texte préparé à l'intention du Laboratoire de Géographie Africaine de l'École des Hautes Etudes en Sciences Sociales, Paris.*

particularly covers oasis systems containing land which may be irrigated and on which the date palm may be grown;

- The north Sahelian pastoral tenure regime made up of rangeland areas which are subject to specific rules of access worked out between pastoral communities but which have been seriously disturbed by open access modern water point development;
- The south Sahelian agro-pastoral tenure regime where agriculture (whether or not combined with animal husbandry) constitutes the main activity;
- The lakeside and riverside tenure regime where ancestral rights and modern regulations put in place at the time of major development schemes usually overlap.

In agro-pastoral areas, the codes governing the use of land are different depending on the community concerned. In the west, amongst the Sonrai-Zarma, land tenure depends to a large extent on topographical position (heavy clayey soils, clayey sandy soils in basins). Land constitutes indivisible property belonging to the community. Its distribution amongst families depends on ancient rights linked to the precedence of the first clearance and the time when the lineages settled in specific places, as well as to privileges based on social or religious position. Systems in which rents or tithes are levied by landowners on tenants are also found.

Amongst the Hausa of central Niger, land is also under community control and usufruct is of more importance than the physical asset embodied by land. Contrary to the Sonrai system, rights to land are lost if it is not worked for ten years and it comes back into the common domain. Finally, in eastern Niger, amongst the Kanouri, land appropriation is on an ancestral basis whereas salt licks (of which there are many in the region) are the property of customary chiefs.

Customary law relating to land in the Sahel is thus based on an impressive range of rules and codes which may vary depending on

region, ethnic group and environmental conditions. However, one constant factor seems to be that agricultural land has a primarily social and collective character, whereas modern, formal ownership is more rare. Land belongs to the community, the lineage and the family, its individual use fitting into a pattern of joint exploitation of a common asset. Any rights which one may hold over land are based directly on the work put in. Thus in Senegal, tenure could be based on "the right to burn", the "right to cut" and the "right to cultivate".⁹ In the same way, land allocation mechanisms may take many forms. In some societies, there are real land chieftaincies which are sometimes morally responsible for the success of the agricultural production which is undertaken on that land. There can therefore be many different tenure situations, which may co-exist in the same area and sometimes relate to the same resource. Based on an analysis of African landholding practices, Le Roy thus identified 20 possible mechanisms for regulating human relationships with land, depending on the degree of control over the resource and the way it was used.¹⁰

From the individual to a group of communities: a multiplicity of users

Because of the multiplicity of users, which can sometimes be disconcerting for modern law, there is a vast range of possibilities. At the first level, users of the same resource may be different depending on circumstances, seasons or the nature of the resource itself. At one extreme, annual pasture in a pastoral area is, in principle, accessible to a large number of users who may come from different directions and remain for indeterminate periods. This resource is thus subject to relatively open access rules. At the other extreme, control of a resource may be restricted to a limited number of individuals, as in the case of a family field. Sometimes, the tenure "footprint" may be tailored to very individual requirements, as in the

⁹ Ndiaye O.K., 1993, Protection et Gestion des Ressources naturelles au Sénégal : étude du cadre juridique et législatif réalisée pour la GTZ (German bi-lateral co-operation).

¹⁰ Le Roy E., 1992, La mobilisation de la terre dans les stratégies de développement rural en Afrique Noire, Paris, APREFA-Laboratoire d'Anthropologie Juridique.

case of the complex system of access to certain *bourgou* pastures. Various intermediate situations may be found between these two extremes. In this way, a plain, a valley or *bas-fonds* may be exploited simultaneously by several communities who then share control of it. This is also sometimes the case in agro-pastoral areas, with pasture being used by several village communities who bring their herds. In other cases, a resource will be accessible to a smaller number of users and access will be dependent on belonging to the social group which holds rights to it, as in the case of *bas-fonds* within which there will be individual family fields.

From seasonal gathering to priority or exclusive access: a vast body of rights over resources

At the second level, the nature and extent of the rights which may be exercised over a resource also vary. In certain situations, the right may only involve gathering or taking from a resource, as in the case of trees, pastures or wild grasses. This is where tacit rules come into their own, to prevent degradation of such resources. In other situations, rights over the same resource may be more diversified, as in the case of a field which is alternately cultivated and left fallow, offering both agricultural usufruct and grazing and gathering rights.

Priority usage rights may also exist, without being exclusive. This means that control over access to a traditional water point in some pastoral regions of the Sahel can be a matter for a very restricted group, or even a family, who have priority in using the water. However, access may also be offered to passing herds, in accordance with precise rules which are designed to control the rate of consumption of the surrounding pasture by the animals.

In rarer cases, rights over the resource may have a more exclusive nature, especially if this resource is strategic and if it is the subject of very personalized investment. This applies, *inter alia*, to the gum trees (*acacia senegal*) in the north of Senegal, the monetary value of whose produce can be high. This notion of exclusivity is also found

in relation to the date palms in the Kavar palm groves in northern Niger, where rights to trees are highly individual. Less frequently, the extent of these rights is such that it comes close to the modern notion of ownership. This may be the case for irrigation schemes when the plot allocation system makes provision for marking out associated with full, formal and inalienable property title.

Infinite combinations of rights and users: the example of pastoral land tenure

Amongst this plethora of resources, users and rights over resources, there is thus an infinite diversity of combinations which often do not fit within any strict classification. Thus, a family field to which access is heavily controlled may be opened during certain periods of the year to other users, such as passing herders with whom manuring contracts are made.

In the same way, despite appearances, a pastoral territory which is open to a large number of users may be the subject of controlled access systems, which means that it is not a public resource.¹¹ Amongst other things, the distribution of resources between pastoral communities becomes crucial in the dry season. Pasture represents a stock of mediocre quality food to which animals can only have access within a fixed radius around a restricted number of deep wells. The water point is then no longer an asset in itself, but rather a means of gaining access to the real asset constituted by pasture.¹² As a result, managing access to water may become a favoured way of regulating the flow of animals and controlling the rate of consumption of pasture. The network of deep water points habitually frequented in the dry season thus provides an obvious frame for the organization

¹¹ Thébaud B., 1994 *Le foncier dans le Sahel pastoral : situation et perspectives* (en cours de publication, École des Hautes Etudes en Sciences Sociales, Paris).

¹² Benoit Michel, 1984, *Le Sého Mangô ne doit pas mourir : pastoralisme, vie sauvage et protection au Sahel*, Paris, Office de la Recherche Scientifique et Technique d'Outre Mer (ORSTOM), 143 pages.

of tenure rights, even in arid pastoral regions where the human and animal population is very widely spaced; as in the north of Niger and Chad: the large amount of space required for camel rearing may contribute towards providing a structure for socially controlled rangelands.¹³

Such a pattern may just as well emerge in pastoral regions where surface water predominates. For instance, in the north of Burkina Faso, a string of permanent water holes with very open access criss-crosses the Oudalan region. Barral¹⁴ coined the term pastoral "endodromy"¹⁵ to designate pastoral areas within which, following an annual cycle, a more or less constant number of herds and people accompanying them move around. Each zone of pastoral endodromy includes a number of permanent water points used in the dry season by certain livestock, dry season rangelands grazed around these water points, "nomadic" cultivation sites or village territories which are usually associated with the water points.

Pastoral land use is therefore based on the necessary duality of vast rangelands and more limited home areas which often contain strategic resources: not only deep wells, but also areas around lakes, rivers, streams or permanent water holes or *bas-fonds* rich in woody species. On very large rangelands, overly formal appropriation would be not only dangerous but also counterproductive. Guarding them would take up a lot of time and labour to gain benefits which would, in the final analysis, be marginal. The concept of pastoral units, which was introduced during the 1980s in the Central Eastern area of Niger and

¹³ Bourgeot André, 1986, L'herbe et le glaive : de l'itinérance à l'errance (la notion de territoire chez les Touaregs), in *Nomadisme : mobilité et flexibilité ?*, Paris, Office de la Recherche Scientifique et Technique d'Outre Mer (ORSTOM), Bulletin de Liaison no 8, pp 145-160.

¹⁴ Barral Henri, 1974, *Mobilité et cloisonnement chez les éleveurs du Nord de la Haute-Volta: les zones dites d'endodromie pastorale*, Paris, Office de la Recherche Scientifique et Technique d'Outre Mer (ORSTOM), Cahiers ORSTOM, Série Sciences Humaines, Vol. XI, No. 2.

¹⁵ From the Greek "endon" and "dromos", which mean "within" and "journey" in the sense of moving around, respectively.

Eastern Senegal¹⁶ clearly illustrated the extreme difficulty encountered by pastoralists in effectively controlling excessively vast territories.

On the other hand, when resources are strategic and confined to more easily controllable areas, ascendancy over land becomes decisive, these being areas which people see as belonging to them, as fall-back and safe areas. These resources may be the subject of priority rights held by a restricted community, which may even evolve towards individual appropriation, as in the case of some *bourgou* pastures. This duality of vast pastoral territories and secure areas where appropriation is more restricted satisfies the requirement for core areas and margins, meeting the constant need for flexibility and ensuring "order at the centre by establishing disorder on the periphery".¹⁷

The term "pastoral tenure" thus covers complex realities, dealing not only with access to land and vegetation, but also to the minerals (including salt licks), wild-gathered produce, agricultural by-products and water points which may constitute the real backbone of the resource use system. It is on the very diversity of rights over these different resources that the effectiveness of the pastoral system depends: rainy season rangeland, a network of dry season water points, together with farmland where manuring contracts may be negotiated, market areas, temporary fall-back or long-term migration areas.¹⁸

¹⁶ Reference is made here to the Livestock Development Project in Central Eastern Niger (World Bank) and the Livestock Development Project in Eastern Senegal (World Bank, French Development Fund).

¹⁷ Gallais Jean, 1984, *Hommes du Sahel*, Flammarion, cité par Marty André, 1989, *Territoire, foncier et approche locale: quelques jalons*, Paris, Institut de Recherches et d'Applications des Méthodes de Développement (IRAM), document à diffusion limitée.

¹⁸ A. Marty, 1989 op cit.

Traditional land tenure regimes or, more properly, endogenous resource management systems

In brief, African tenure systems fall outside overly conventional or modern views. They deal with both the land and the resources directly linked to it. From a technical and economic point of view, tenure systems determine the management and (more or less efficient) allocation of a set of productive resources. They organize access to ground-based natural resources and determine the appropriation mechanisms for these resources and the security of ownership or usage rights over them. By doing this, such systems help to define a series of economic and institutional incentives relating to the various possible ways of using these resources.¹⁹

The systems are thus more endogenous than traditional, establishing tenure arrangements in response to problems, potential or constraints. Despite this, access to, usage and development of a resource do not weaken its collective status. Land, vegetation or water are considered as social rather than individual property.

2. MODERN LEGISLATION

The introduction of modern law and customary law: Two different perceptions of land and resource control

The introduction of modern legal rules has had profound consequences for customary tenure regimes. Within such regimes, usage rights over land, vegetation and water generally provide the user with relative security, even though such rights are not necessarily ratified in written documents. The difference between them and private ownership, as a full and inalienable right, is subtle but of vital importance, because this distinction comes down to a shift from appropriation to private property.

¹⁹ CILSS/Club du Sahel, 1994 op cit.

In analysing this development, Le Bris, Le Roy and Mathieu²⁰ point out that in common parlance²¹, appropriation means "the act of appropriating, of setting apart for a purpose". Conversely, in law, the same term designates "the act of making a thing one's own, making it the subject of property". The Latin origin of appropriation is said to be "ad proprius", what is one's exclusive possession, what one does not share.

It is in this shift from usage to property rights that the greatest difficulty in analysing African land tenure probably lies. In societies where property rights had been affirmed as a mainstay of political and economic organization, land had to take on a mercenary value and become a commodity which could be appropriated in a manner which deprived [other people] of rights. Sometimes, such development occurred in a favourable context. For instance, in Senegal, the introduction of cash cropping during the colonial period undermined the collective status of agricultural land in some regions, leading to the emergence of a real landowning class.²² However, as we have seen, these conditions are not always met where African land is concerned. Several usage rights may co-exist in relation to the same resource and are capable of being handed on from one generation to another, although the property itself is not handed on.

This cleavage between a European view of private property and the complexity of access and usage rights over natural resources in Africa has always made it very difficult to establish legislation in which these two perceptions of land could converge.

²⁰ Le Bris Emile, Le Roy Etienne, Mathieu Paul, 1991, *L'appropriation de la terre en Afrique Noire : manuel d'analyse, de décision et de gestion foncières*, Karthala, Paris, Pages 30-33.

²¹ Robert French Dictionary, Paris, 1968, page 69 and Gaffiot Latin/French Dictionary, definitions quoted by Le Bris et al, op cit. [Chambers 20th Century Dictionary, 1983; West's Law and Commercial Dictionary, 1985]

²² O.K. Ndiaye, 1993, op cit.

Outside Gambia and the Cape Verde Islands²³, the legal system introduced into West Africa by the French administration rapidly established a state monopoly over land based on the principle of national property and vacant ownerless property. Customary rights over land had to be proven, or the land would be taken into the public estate.²⁴ However, in this field, the French Civil Code remained vague, merely indicating (article 538) that "all portions of French territory which are not susceptible of private ownership must be considered as dependencies of the public estate".

The tenure regimes installed in the French Congo and subsequently in the Ivory Coast at the turn of the century thus defined two spheres, whose structuring recalled feudal law. On one side was the sphere coming directly under the colonial state, while on the other was the "useful" sphere gathering together all land which was not registered in accordance with the regulations in force. On such land, property rights do not provide a frame of reference, the state remaining the holder or "guardian" of the territory whose use it could allocate in accordance with the procedure of state property concessions. However, such allocation was not based on the principle of clearing and simply bringing the land under cultivation, but on the principle of economic development which implies investment and appreciation.²⁵

This establishes a crucial divergence from customary rights wherein "allocation of land is mainly designed to ensure the reproduction of the group in its material, social and ideological dimensions. The European concept basically aims at treating land as capital to be

²³ These two countries were subject to Common Law and the Portuguese legislative system respectively. The British system favoured a duality between modern law (with leasing and concession arrangements) applied to the colonists and customary law which retained control of the so-called indigenous land. In the Cape Verde Islands, Portuguese colonialism was based on a special administrative regime applied to the indigenous population which gave the colonial administrators responsibility for policing and administering justice (CILSS/Club du Sahel, 1994, op cit.).

²⁴ CILSS/Club du Sahel, 1994, op cit.

²⁵ Le Bris et al, op cit.

exploited and made profitable".²⁶

Modern legislation is often cumbersome, inappropriate and difficult to apply.

After their independence, Sahelian states thus had to put up with stifling, centralizing legislative regimes, often providing a model with "no instructions for use".²⁷ Modern tenure legislation is generally characterized by its density and the plethora of legislative instruments and enforcement measures. Natural resource access and usage rights can be regulated by various codes, depending on circumstances, dealing for example with water, forestry, hunting and fishing, mines or town planning and the environment (especially where pollution is concerned).

There are often several spheres of jurisdiction. In the case of Senegal, these relate to national property, private property and state property.²⁸ State property covers natural assets (such as navigable water courses, underground resources and air space) as well as artificial assets (such as roads, railways and the shores of water courses). National property includes almost the entire territory, since apart from private, registered property, land belongs to the state in most West African countries.

The public estate is divided into four parts:

- Village territories including agricultural land (cultivated or fallow), livestock areas and sites occupied by rural dwellings;
- Pioneer zones destined to benefit eventually from specific

²⁶ Le Bris et al, op cit.

²⁷ Le Roy E., 1990, *La réforme du droit de la terre dans certains pays d'Afrique francophone*, FAO, Rome, quoted by CILSS/Club du Sahel, 1994.

²⁸ O.K. Ndiaye, 1993, op cit.

development programmes and which may, under certain conditions, be transformed into village territories;

- Urban areas (communes and groups);
- Gazetted areas (such as forest, parks, wildlife reserves, areas set aside for regeneration) whose particular vocation must be preserved.

Modern tenure laws are still applied with difficulty and imperfectly. Modern law is often unknown to communities, as legal texts are not very accessible to them and remain very complex to interpret. The legislative apparatus is often out of the reach of rural people. In the event of disputes, recourse mechanisms are complex, time-consuming and frequently ignored. The impact of modern law on land management is not, however, neutral, even though customary law often remains paramount in settling conflicts. Existing legislation also tends to restrict the notion of productive use/improvement of land to the practice of agriculture, without extending it *de facto* to forestry or pastoralism. Legal texts often provide little incentive to investment as they provide few safeguards.

Some legislative provisions, especially with regard to forestry, can also have the paradoxical effect of hindering certain activities, particularly outside the gazetted area. At the beginning of the 1980s, in the Zinder region of Niger, Hausa farmers were noticeably reluctant to protect the trees in their fields. As most species were protected under the forestry code, fear of fines led to fraudulent cutting on neighbours' farms.²⁹ Such depredations discouraged any form of investment in agro-forestry. As far as the gazetted area is concerned, forestry codes in the Sahel based on participatory forest management are of recent origin, such a policy having hitherto been difficult to envisage.

²⁹ Thomson J., 1982, Le processus juridique, les droits fonciers et l'aménagement de l'environnement dans un canton Hausaphone du Niger, in Enjeux fonciers en Afrique Noire, Etudes réunies par E. Le Bris, E. Le Roy et F. Leimdorfer, ORSTOM/KARTHALA, Paris.

In certain regions, the influence of Islamic law is also a factor which must not be underestimated. Its precepts have often been reinterpreted and gradually incorporated in local practices: share-cropping, inheritance rules, introduction of new jurisdictions, Koranic tithes, etc.³⁰

3. TENURE AND NATURAL RESOURCE MANAGEMENT

The decisive influence of tenure practices on resource management

Customary tenure regimes and the rules which usually go with them are not immutable. In fact, historical research shows that such regimes, whether on the scale of a vast territory, a region or a rural district, are subject to various influences which are far from neutral. In the Sahelian context, several factors have been and continue to be decisive in the development of tenure practices in both the agricultural and pastoral environments.

Drought and climatic hazards, greater pressure on strategic resources

The alternation of favourable and unfavourable climatic periods cannot be overlooked as a factor in transforming certain tenure practices. For instance, since the beginning of the 1970s, lower overall rainfall has been accompanied by poor distribution and the irregular alternation of mediocre, good or just plain bad years.

The effects of this dry cycle have been all the more acute because it came after the very favourable climatic cycle of the 1950s and 60s during which rainfall has been higher than the average for the century. During that period, increases in human and animal numbers had been temporarily masked by the relative abundance of resources and by the opportunities for successful cultivation in regions which

³⁰ CILSS/Club du Sahel, 1994, op cit.

had not previously been propitious.

While there is a trend for certain areas which have become unproductive to be abandoned, other regions are now taking on a strategic character, especially in the case of favourable eco-systems which are better protected against climatic hazards. This means that fossil valleys where the water table is quite shallow (such as the "Dallol" in Niger) are the subject of growing competition. The same goes for the *bas-fonds* which, in certain regions, have become a key resource for which agriculture and animal husbandry often vie. In North Eastern Burkina Faso, the history of population movements since the middle of the century indicates a pendular movement between the highlands and the *bas-fonds* depending on the season and as the latter gradually dried out during dry periods.³¹ During the last 20 years, the movement of agro-pastoralists down to these *bas-fonds* has been stepped up, causing conflicts about the tenure of these key resources. This trend seems to be borne out in many other Sahelian regions and even outside the area.³²

These trends are also borne out in lakeside areas and horticultural eco-systems. In Senegal, the "Niayes" constitute a unique eco-system located by the sea, which was populated at the beginning of the century by agro-pastoralists who developed market gardening there. Used intensively for agriculture, this area has a very complex tenure situation. Land is the subject of formal appropriation and is much coveted by private individuals from the capital. In the lowlands close to the ocean ("djouki"), farmers have retained direct control over land and leasing is relatively uncommon. Consequently, improving and protecting these fertile basins is often effective (wind breaks, hedges and installation of cement-lined wells with hand pumps). Conversely, the less fertile intermediate land ("khour") is subject to leasing systems. Finally, the peri-urban southern part of the "Niayes" (close

³¹ Programme Sahel Burkhabé, 1992, op cit.

³² See for example Ian Scoones, 1992, Wetlands in drylands: key resources for agricultural and pastoral production in Africa, International Institute for Environment and Development (IIED), Drylands programme, London, Issue paper no. 38.

to Dakar) is increasingly being drawn into the cash economy and is seen by people in Dakar as a potentially very profitable investment (tree crops and prospects for extending the city of Dakar towards the north).³³

Demographic growth, land shortage and the growing precariousness of occupation rights

Demographic growth has also involved greater pressure on land. In the groundnut-growing basin in Senegal, for instance, the decrease in available arable land per person between now and the year 2000 is expected to be dramatic. On the basis of a constant fertility rate, there would be a drop from 0.72 hectares in 1980 to 0.42 in the year 2000 and 0.17 in 2025.³⁴ This has meant a shortening, and in some cases the disappearance, of fallow periods and more fragile sites are being brought under cultivation. Increasingly dense agricultural settlements and the reduction in fallow areas suitable for grazing are causing a decline in agro-pastoralism which used to contribute towards maintaining soil fertility through manuring. Because pasture is not available, livestock is kept further and further away and it is common to resort to transhumance (especially towards the east). The fall in soil fertility causes a decrease in yield for which the application of fertilizer cannot compensate indefinitely, lacking organic back-up.

In the circumstances, the impoverishment of agrarian systems has brought about heavy out-migration from the groundnut-growing basin of a seasonal (especially towards the "Niayes" or the capital) or durable nature, towards Casamance and Eastern Senegal. The considerable pressure exerted by the Mouride farming system is also striking. Starting in the last century, extensive clearance for groundnut-growing gradually encroached on the southern fringe of the

³³ M.S. Freudenberger, 1992, *op cit*.

³⁴ Village reforestation project in the north west of the groundnut-growing basin (PREVINOBA), 1993, description of an awareness-raising experiment in relation to population and the environment in a rural forestry project in Senegal.

Ferlo, in the north, and towards Eastern Senegal. The sylvo-pastoral reserves set up by the French administration between the 1930s and 1950s in order to form a green belt around the groundnut-growing basin, allowing the pastoral population to maintain its position, have seen their boundaries constantly pushed back by groundnuts. Despite everything, pressure from clearance has not gone away and the recent example of the Mbegué forest confirms the fragility of these last reserves of land in the face of the Mouride pioneer movement.³⁵

This example of rural areas becoming saturated is being replicated in many Sahelian regions. The constraint weighs just as heavily on agricultural as on agro-pastoral areas. In central Niger, the agro-pastoral system of the Bugaje in the Zinder region was based on fields laid out in strips along which the household and livestock moved in order to manure the whole plot. However, as the land has been divided up by heads of family, the fields have become smaller in size and the system of manuring and fallowing is no longer possible.³⁶

The influence of the macro-economic framework on agricultural and pastoral tenure practices

Finally, human control over resources is also influenced by the macro-economic management context. In relation to agriculture, policies based on subsidy can be more favourable to extensive than to intensive farming. The absence of a policy to control clearance for agriculture and to set up/protect sylvo-pastoral reserves and gazetted forests can mean that these resources are increasingly tapped into for the purposes of cultivation, further delaying any possibility of intensification, as these set aside areas always constitute reserves of land which can potentially be colonized by farmers whose own land

³⁵ Gazetted as a sylvo-pastoral reserve in the 1950s, this forest has recently been cleared by the Mourides in order to grow groundnuts (Karen Freudenberger, 1991, Mbegué: the disingenuous destruction of a Sahelian forest, International Institute for Environment and Development (IIED), Drylands programme, Issue Paper no. 29, London).

³⁶ J Thompson, 1982, *op cit.*

is exhausted. The absence of a coherent energy policy can indirectly favour cheap energy for the benefit of the capital and secondary urban centres without taking into account the medium term ecological cost for the forests.

In the same way, the establishment of vast irrigation schemes has introduced new tenure systems, which are closer to private property than collective, community appropriation. Government-preferred development options can also come into conflict with the interests of user communities. For example, setting aside vast regions for the purposes of tourism has occurred mainly in East African countries but, there are some cases in West Africa as well, such as Dinde Fello in Eastern Senegal.³⁷

There have also been striking changes in the pastoral environment. Pastoral territory has shrunk under pressure from increasingly land-hungry agriculture. In many countries, agricultural colonization of rangelands occurred prior to the 1970s, as the extremely favourable conditions of the 1950s and 1960s allowed cropping to be expanded, sometimes quite dramatically, towards the north. Clearance often affected key pastoral resources, such as valleys, *bas-fonds* and the shores of rivers and lakes. Stopping access to rivers has been a particular feature of major irrigation schemes. In the Senegal river valley, the establishment of irrigated plots led to a real split between agriculture and animal husbandry, isolating herders in the sylvo-pastoral reserve of central Ferlo.

At the same time, overcrowding in the southern agricultural regions led to the disappearance of fallowing and thereby of the natural pasture which used to feed livestock belonging to agricultural communities. Such grazing also used to provide vital fall-back opportunities for pastoralists in times of crisis.

Furthermore, pastoralists' control over land has been seriously affected by the lack of recognition of established rights and by the

³⁷ M. Freudenberger, 1992, *op cit.*

perverse effects of modern pastoral water supply. Because they allow public access, cement-lined wells and high-yielding boreholes have, in some regions, brought about the dismantling of the land management tool which pastoral communities used to wield.³⁸

Most existing tenure legislation in the Western Sahel is still very ambiguous concerning the status of pastoral land. Recognition of usage rights as well established as those in the agricultural environment remains the exception to the rule. In many cases, pastoral occupation is not recognised as an effective form of making productive use of/improving land in the same way as clearance and agricultural use. Consequently, pastoral rights usually remain precarious, especially over strategic areas such as *bas-fonds*, riverside areas, moist valleys and sylvo-pastoral reserves. Long-term allocation of rangeland to organized pastoral groups has been attempted on several occasions (especially in connection with the previously mentioned "pastoral units"), but these are ad hoc measures whose results are decidedly mixed. Everywhere else, pastoral rights have tended to retreat before agriculture.

The complex interface between customary law and modern legislation

It is therefore extremely difficult to analyze the interaction between customary law and modern legislation. As we have seen, there is often resistance on the part of endogenous systems towards modern legislation: many conflicts will still preferably be settled within the community, without calling in the modern authorities.³⁹ However, not everyone is ignorant of the law and superimposing modern legislative provisions on customary rights can create a legal grey area which can be profitable for some. In Senegal, the 1964 law on national property

³⁸ Thébaud B., 1990, Politiques d'hydraulique pastorale et gestion de l'espace au Sahel, Paris, Office de la Recherche Scientifique et Technique d'Outre Mer (ORSTOM), Cahiers Sciences Humaines 26 (1-2), pp 13-31.

³⁹ E. Le Roy, 1990, Le justiciable africain et la redécouverte d'une voie négociée de règlement des conflits, in Afrique contemporaine, 156, 4:111-120.

stipulated, for example, that "persons occupying and personally working land forming part of the national estate at the date of coming into force" could continue to work it. Yet certain farmers, on the basis of customary borrowing rules, rapidly brought land into production and thus became its legitimate beneficiaries, thereby despoiling the real traditional holders of that land.⁴⁰ In fact, the superimposition of texts and rules has often allowed customary chieftaincies to interpret "customs, Koranic principles and administrative rules governing tenure more or less as they see fit".⁴¹

Even when customary tenure regimes remain strong and play a decisive rôle in controlling access to resources, their room for manoeuvre is increasingly restricted. Localized or more extensive crises may arise in different forms, but they often have perverse effects on the ways in which resources are managed. Programmes interested in improving these management systems may find themselves considerably handicapped. Migration increases insecurity with regard to land and pressure on key resources such as *bas-fonds*, as well as ligneous resources. Relationships between communities are often strained, especially with regard to control over these resources. New private or public interests, especially those of traders and private investors who often come from the urban environment, come into play. In some cases, uncertainty over tenure is increased by an institutional context where the absence of clear legislation leads to speculation and a race to acquire land.⁴²

⁴⁰ Niang M., 1982, Réflexions sur la réforme foncière sénégalaise de 1964, in Enjeux fonciers en Afrique Noire, Etudes réunies par E. Le Bris, E. Le Roy et F. Leimdorfer, ORSTOM/KARTHAGA, Paris.

⁴¹ J. Thompson, 1982, op cit..

⁴² Lund C., 1993, Waiting for the Rural Code: Perspectives on a Land Tenure Reform in Niger, IED, Issue Paper no 44, London.

The precariousness and insecurity of tenure rights: possible manifestations

In some cases, development operations can foster such strategies. In the south of the groundnut-growing basin in Senegal, a project introduced cashew-nuts into the agrarian system at the beginning of the 1980s in order to help control soil erosion as well as to increase farmers' income. The trees were planted in plots surrounded by fencing to protect them.

However, there are acute tenure problems in the area: farmers consider that the land is unequally distributed. Large-scale farmers who cannot bring the whole of the area they hold into production face a real risk of expropriation by the Rural Council. This means that setting up cashew-nut plots provides an alternative for these farmers which is all the more attractive in that the fencing system gives them almost inalienable tenure rights. The project's policy of taking away the fencing if the farmer did not really develop his cashew-nut plot made it possible to get around this difficulty in some cases. However, confusion is frequently found among farmers whose objective is not always to introduce cashew-nuts onto their farms, but rather to secure an area of land for themselves.

Insecure tenure thus brings real difficulties in the field and can sometimes cause increased population mobility, making it difficult to organize primary healthcare or education.⁴³ In some other regions, fear of losing land makes it impossible to practise fallow and therefore to move back towards agro-pastoral techniques which were beneficial for soil fertility and protective against erosion. In other cases, restoring degraded areas can raise complex problems in their subsequent development. For instance, combatting erosion is only of interest if usufruct of the affected land is guaranteed. Yet such investment increases the value of the land and may lead to expulsion

⁴³ Ezeomah C., 1995, Land tenure constraints associated with some recent experiment to bring formal education to Nomadic Fulani in Nigeria, Overseas Development Institute, Pastoral Development Network, Paper 20d, Londres.

of farmers who only have precarious land rights.

For example, in the Sebba region of North Eastern Burkina Faso, agricultural activity is confined to areas where the topography allows sufficient soil to be accumulated to make cropping possible. This mainly concerns the *bas-fonds* which are found throughout the landscape, but also sites located upstream, especially the terraces.

Agricultural production is mainly focused on cereals, with an important share devoted to sorghum grown in the *bas-fonds*. Millet tends to be grown more on the fringes of the *bas-fonds*, where there is less infiltration, and on sites further away upstream, often on the terraces. The *bas-fonds* and the mid-slope millet fields thus constitute two permanent centres of attraction between which the inhabitants move according to circumstances and especially according to the climatic cycle: in a wet period (such as the 1950s or 1960s) the *bas-fonds* are too flooded to be cultivated and are then of mainly pastoral interest, especially for grazing *andropogon gayanus*. Land upstream thus provides a natural fall-back in such periods. Conversely, if the years are very dry, there is no risk of flooding in the *bas-fonds* and crops can be moved to lower lying areas.

However, there are some signs which suggest that this type of agriculture is currently reaching breaking point. Degradation of the areas upstream of the *bas-fonds* has intensified considerably since the 1970s. In some cases, the gullies are only small and easy to deal with. In other cases, major watersheds are affected. In the *bas-fonds*, the saturation of cultivated lands is striking and some have been entirely deforested and cleared over several kilometres. Finally, all the upstream sites and the *bas-fonds* are now simultaneously under cultivation. Fallowing is still practised, but for shorter periods, and the availability of new land is extremely limited.

These constraints manifest themselves in many ways. Most farmers have several plots under cultivation and some of them work three or four different fields simultaneously. Because of the intense erosion on the terraces and soil slippage towards the *bas-fonds*, cultivation

sites are really moving around, many of them having changed location several times over the last 30 years. This mobility of the land has been accompanied by parallel mobility of tenure status, borrowing fields for short periods being a very widespread practice. Finally, farmers confirm that harvests are dwindling and the majority of them say they have doubled and some cases tripled the area they cultivate during the last twenty years.

The precariousness of land rights over certain fields and the scale of land borrowing systems (even though a formal cash economy has not yet emerged) are sooner or later bound to limit activities: combatting erosion or introducing well-adapted tree species (such as *acacia albida*) are not attractive propositions for farmers who are only *temporary users of the land, especially that where millet is grown*, although this is the most fragile. Furthermore, for those who do have full rights over their agricultural land, the prospect of introducing fallowing or reducing the cultivated area to allow for the installation of strips of vegetation to combat erosion, or of reinforcing those which already exist, is less than tempting bearing in mind cereal requirements and the need to sow all available areas every year.⁴⁴

In the Bas Saloum region of Senegal, Busacker⁴⁵ also found a considerable number of elements detrimental to management of land. Farmers say that the land is very unequally divided⁴⁶, while enlarging the cultivated area is by now virtually impossible. Many small farms are obliged to borrow land. Consequently, numerous types of land borrowing have come into being, some of which are illegal, such as loans against security. However, the Land and Property Law allows allocation of land after three successive years of cultivation, which does not encourage owners to give long-term leases. Consequently,

⁴⁴ Programme Sahel Burkina, 1992, op cit.

⁴⁵ Busacker D. et al., 1990 L'analyse Socio-Economique des Systèmes d'Exploitation Agricole et de la Gestion de Terroir dans le Bas Saloum, Sénégal, Centre de Formation Supérieure pour le Développement Agricole, Université Technique de Berlin.

⁴⁶ In the area surveyed during the study, 12% of households were found not to possess any land and 28% had less than 5 hectares per domestic unit.

the land can only be borrowed for one year, preventing any durable investment such as planting trees or introducing multi-year crops. These systems have a considerable impact on the environment: borrowers try to maximise production at the expense of soil fertility, unused areas are systematically appropriated and fallowing has become virtually non-existent, so that land impoverished by the restricted rotation of millet and groundnuts is no longer allowed to rest. Along with this, the disappearance of fallowing (and hence of interstitial pasture) leads to a decline in the livestock component on the farm and reduced availability of manure for the fields.

4. APPRAISAL AND RECOMMENDATIONS IN THE FRAMEWORK OF NATIONAL ACTION PROGRAMMES.

Securing rights over resources and the fight to combat desertification: An unbreakable link in terms of sustainable development

Any attempt at future projections regarding the tenure issue in Africa can only proceed in stages, as solutions must be adapted to fit the mosaic of tenure situations found in the field. As far as the Sahelian countries of West Africa are concerned, two major findings indicate the need for a fresh look at the status of the land and connected resources. On the one hand, it is difficult to reconcile the application of complex, centralizing, cumbersome land tenure legislation with the diversity of customary practices which are based on different views of land and resources. On the other hand, the interaction between modern legislative provisions and existing customary regimes frequently leads to insecurity which jeopardizes considerate management of resources.

Removing uncertainty over tenure has thus become an increasingly crucial issue in the Sahel, especially in relation to the national resource management programmes which have been introduced by some of these countries. Several of them have revised their legislative approach in one way or another. In Burkina Faso, the

1985 Agrarian and Property Reorganization came up with a complex set of rules whose application was to be tested through the National Land Use Management Programme (PNGT). The option of a legal text with national scope but only laying down a few general principles seems to have been favoured by Mali and also by Niger, through the law setting policy guidelines for the Rural Code. Beyond the legislative aspect of such provisions, it is, however, important to identify lines of enquiry which we think should be taken up by National Action Programmes within the framework of the International Convention on Desertification.

The vital shared role of the state and user communities

Above all, there can be no clear-cut, indisputable choice in levels of responsibility: even if resource management must be controlled in the first instance by the rural communities who use the resources, the state retains an essential role.

The state needs to provide an economic, social and institutional environment (and this includes agricultural, pastoral and energy policy) which fosters such control. In a different environment, which nonetheless has certain similarities, an analysis conducted in the Machakos district of Kenya⁴⁷ clearly shows that the institutional and economic context could have sometimes beneficial effects on agricultural intensification and land improvement, in a region which had been considered to be already seriously degraded at the end of the 1930s.

Using a historical approach, a team of researchers from the Overseas Development Institute (London) and the University of Nairobi retraced developments in the physical and human environment between 1930 and 1990 in this district of Southern Kenya. During this period, despite a fivefold increase in population, erosion receded,

⁴⁷ Tiffen M., Mortimore M. et Gichuki F., 1994, More People, Less Erosion: Environmental Recovery in Kenya, John Wiley & Sons, London.

the introduction of terraces maintained the soil and tree planting prevented an energy crisis which had been thought irretrievable. Agricultural productivity increased and new land management methods were introduced spontaneously as a result of complex but effective smallholder strategies. Traditional tenure regimes adapted to the new situation of land scarcity and, with the help of the administration, brought about greater security for farmers. The introduction of cash crops also improved income and increased investment in the fields. However, the institutional and commercial environment played a decisive role in this process, especially with regard to security of tenure and marketing of agricultural produce.

Decentralization of rights and responsibilities over resources : a necessary stage

Furthermore, the state must also provide national policy guidelines in respect of tenure, which are vital to protect collective interests and work out a general legislative framework applicable throughout the country. However, there is also a need to design a legislative and macro-economic framework which fosters greater security of tenure, while respecting the extreme diversity of regional and local situations.

There can thus be no getting around the need to recognize the principle of co-management of resources by the state and local people, which is by no means unrealistic: while retaining final control over the land itself, the state may entrust its sustainable management to the user communities. Such delegation must, however, be accompanied by a degree of security for the rights and responsibilities granted to the community. The ultimate power of the state to expropriate land for public or private purposes often continues to pose a real threat.

Consequently, land tenure and natural resource management issues have become indissociable from the decentralization processes which are ongoing in some Sahelian countries. Natural resource management provides a strategic meeting point between communities

and between them and the political authorities and technical services.⁴⁸

The recent case of the Serere territory of Goll de Fandene in the groundnut-growing basin in Senegal provides a good illustration.⁴⁹ A large degraded area to the north of the territory had been left uncultivated by the farmers for more than 30 years, because of the ferruginous glasis ("Goll") predominating there. Over time, two Peuhl hamlets settled on this uncultivated land to use it for pastoral purposes, leading to durable cohabitation between the two groups.

Conflict arose recently when the Cayor Canal, which was to go through this land, was marked out, placing the Serere and Peuhl in a tangled situation. Having abandoned the land, the Serere could not easily retrieve it, since they had not made productive use of it for a long time, so that it had been taken back into the public estate. At the same time, the Peuhl could not claim any formal rights, because as we have seen animal husbandry is not considered as a form of productive use/improvement of land. The situation was exacerbated when the Rural Council began to consider allocating plots in the Goll to outsiders (from Thiès and Dakar) to be developed using the water from the canal. Faced with this situation, an alliance was soon forged between the Peuhl and Serere to besiege the Rural Council, bring in influential people from the capital and plan some physical development: planting a green belt around the Goll to give concrete expression to its boundaries and setting up a mixed development committee.

Decentralized resource management: a long and complex process which must be prepared, supported and monitored.

Decentralization must also put up with certain limitations. For instance, in Senegal, land tenure regulations are underpinned by two

⁴⁸ CILSS/CLUB du Sahel, 1994, *op cit*.

⁴⁹ Bara Gueye M., 1993, *Conflits et alliances entre agriculteurs et éleveurs, le cas du Goll de Fandène*, Drylands Programme, IED, London

pieces of legislation: the 1964 Law relating to state-administered property and the 1972 Law relating to Rural Communities. The first stipulates that all land, except that which is public or private property, constitutes national property under the control of the state. Village lands, representing about 95% of this property, were allocated to Rural Communities to be managed in accordance with rational development plans. Precise allocation and deallocation rules applied to distribution amongst the members by these Communities.

Subsequently, the 1972 reform of territorial and local administration aimed at promoting increased participation by the rural population in managing their own affairs. Law 72-75 of 9th April 1972 decreed the establishment of 317 Rural Communities throughout the country, each composed of a certain number of villages theoretically linked to each other by ties of economic, social or ethnic solidarity.

This institutional and legal framework, which apparently favours decentralized resource management, actually has several limitations. The numerous legislative instruments and implementation decrees constitute a complex arsenal which is often beyond the reach of the Rural Communities and village authorities. In some situations, absolute chaos in land allocation processes can result. For instance, in the Senegal River Valley, decree 87-720 of 4th June 1987 changed the status of a substantial portion of the irrigated land in St. Louis region so that it became village land under the control of the Rural Communities instead of a pioneer zone. In one case in 1988, an area of about 11,000 hectares was transferred in this way to a Rural Community. A year later, a total of 13,000 hectares had been allocated by the Rural Council, including 30% to outsiders such as refugees as well as citizens of St. Louis, Dakar and Touba-Mbacke. In addition, at least 2,000 hectares of land had been registered twice or three times. This situation brought about such chaos that the sub-prefect was soon obliged to halt the operation.

In many situations, the administration also retains considerable residual power in the final allocation of land, which greatly attenuates the co-management principle laid down by the law. In fact,

reallocation may be unilaterally decided on the basis of a declaration of public interest or in favour of private interests, as has happened when declassifying sylvo-pastoral reserves in order to allow groundnut-growing. One can not fail to recall the example of the Mbegué reserve or the 1971 withdrawal of an area of 80,000 hectares in order to set up the Doli ranch to the advantage of a parastatal.

While it is an essential pre-condition for a secure tenure situation, decentralizing decision-making power over natural or developed resources is not an easy exercise. Participation, training and information are vital. Tenure, decentralization and participation thus become inseparable, but the pitfalls are many. Far from being a panacea, community participation in resource management must be real. Such participation must provide space for dialogue and consensus between various players whose representativeness must, nevertheless, be assured. Yet, the role of all affected groups in resource allocation is not always guaranteed, especially where those who have only temporary or precarious rights are involved, such as women, caste groups or transhumant pastoralists. Within a multi-party situation, the influence of local politics and electoral allegiance is another new dimension to be taken into account in settling land disputes.

The legitimacy of the new forms of association which are to be introduced must also be confirmed, as far as both the communities and the administrative, technical and political institutions are concerned. For example, the sometimes limited representativeness of the Rural Communities in Senegal or of the land use management committees set up in other Sahelian countries clearly shows the complexity of the decentralization process. Such a process may also imply profound changes in the way the technical services and also the funding agencies operate. Faced with pressure for rapid disbursements and high visibility achievements, what participatory, decentralized land use management by local communities actually requires is time and patience.

Productive use/improvement of land: An ambiguous notion which must be clarified with reference to the reality of agricultural or pastoral activity

Furthermore, the notion of making productive use of/improving land still gives rise to considerable ambiguity, which especially affect the status of agricultural land left fallow for long periods as well as areas used for pastoralism. The debate in Senegal at the beginning of the 1990s clearly illustrates the difficulties associated with this notion. In 1991, a working group led by the Ministry of the Interior came up with the idea of giving prefectures the job of establishing minimal criteria for productive use depending on the specific features of their areas. The overall framework states "that an area is considered to be in productive use once investment has been made therein so that it may be used, in an integrated manner or otherwise, for productive activities relating to agriculture, forestry, pastoralism, fishing, game, setting aside for regeneration or improved fallow using appropriate techniques".⁵⁰

These discussions have not yet led to any changes in the decree regarding terms for allocating and deallocating public land. However, it is important to notice that here the notion of productive use is directly linked to that of investment. In many cases, people who introduce simple fallowing will still be fearful of losing the land if it is not being worked continuously and if it is simply left to rest. It is easy to see the constraints this implies for land use management initiatives which aim, amongst other things, to restore soil fertility.

Far from improving the situation, such a policy would, if adopted, raise the crucial problem of maintaining pastoral areas where the main activity is extensive herding. The shrinkage of grazing areas within agricultural or agro-pastoral territories also extends to the sylvo-pastoral reserves as well as some gazetted forests where herders had

⁵⁰ Minutes of the meeting of the working group responsible for examining the provisions of decree 72-1288 relating to terms for allocating and deallocating land forming part of the national estate, Republic of Senegal, Ministry of the Interior, General Affairs and Territorial Administration Department.

retained access rights. In this respect, the case of the Mbegué forest is not unique, but provided a particularly striking example of the fragility of pastoral land rights.

Privatization and status of jointly managed resources: The need for a careful approach

Finally, the status of jointly managed resources such as fish, fauna, clumps of trees or pasture is still a live issue. The overly restrictive notion of productive use does not make tenure sufficiently secure. Moreover, consideration must be given to revising the status of certain strategic resources, especially where they are the keystone of the management systems relating to these shared areas. Amongst other things, reform of the public status of water points in the Sahelian pastoral environment could turn out to be a prerequisite for control of the land by the user communities.

Conversely, systematic land privatization is not necessarily a solution to be applied generally, nor a vital prerequisite for better management of such land. Within land use management projects, it has been found that excessively strict delimitation between territories is *responsible for more conflicts than solutions to apparently competing uses of shared areas*. In fact, responsible management can occur without the tenure system having necessarily to be based on ownership of the basic resource (land). It is precisely on this principle that co-management of resources by the state and communities should be based.

In the same way, in pastoral areas where water and grazing resources are often uncertain, privatizing the land can be even more restricting. For example, simultaneous experiments conducted in Niger and Senegal during the 1980s showed that a pastoral area open to a large number of users, but with access controlled by the resident communities through the water points, can be better managed, even

in a bad year, than a heavily privatized one.⁵¹ Except in very specific cases, such privatization is unlikely to constitute a viable solution from an ecological, economic and social point of view. Arrangements introduced in East Africa giving private rights over pasture to individuals or communities have also shown serious limitations.⁵² In view of the diversity of situations encountered and tenure solutions available, modern, inalienable ownership must be seen as only one option amongst others and be approached with care. Holding private, individual, inalienable rights over a resource does not necessarily guarantee that it will be managed properly.

CONCLUSION

The operation of tenure systems and their recent evolution under the influence of demographic growth and climatic factors can thus represent real stumbling blocks to attempts to set up natural resource management arrangements with the population. It would be comforting to have a full grasp of every aspect of these systems before taking action. However, it is often difficult to adopt such an approach. The limits of surveys and research to find out about the land tenure situation are quickly reached in view of the complexity of the field and the frequent hesitation of local people to speak about the subject.

In many respects, it seems that getting to know tenure systems in an area, identifying the limitations they impose on natural resource management and lifting such constraints cannot easily be divorced

⁵¹ See *inter alia*, the findings of work conducted during the 1980s during the Livestock Development Project in Central Eastern Niger (PNCEB/World Bank) and the conclusions of the controlled grazing experiment conducted by GTZ (Agro-sylvo-pastoral land use project in Northern Senegal) from 1981 to 1994 in the Fatick region of Senegal (B. Thébaud, H. Grell and S. Mische, 1994) Recognizing traditional pastoral efficiency, lessons drawn from a controlled grazing experiment in Northern Senegal; in course of publication, IIED/London.

⁵² Oxby C., 1982. Group ranches in Africa, Overseas Development Institute, London, Pastoral Development Network, Network Paper 13d, Londres.

from action. In fact, it is often when seeking to improve and develop a particular resource in a territory that tenure rights over the resource and the groups involved emerge most clearly. This means that such problems can only be resolved by allowing space for dialogue and consultation. That would certainly confirm that the technical solutions which could restore and improve natural resources must be based above all on a concerted approach to the tenure issue by all groups involved, otherwise there is little chance of success.

Finally, tackling the tenure issue also means redefining the relationship between the state and user communities. Such an exercise is bound to raise questions, at a time in the history of development when the gradual withdrawal of the state at different levels is seen as an inevitable long-term trend.

However, as we have seen, it would be dangerous to rely on an overly simplistic analysis. Between the extremes of an absent state, or one which takes no responsibility for resource management, and communities holding full power, viable compromises must be sought through consultative processes at all levels. One of the immediate tasks of the Convention on Desertification should surely be to encourage such a dialogue around such a basic issue.

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