

STATE LAW OR FOLK LAW?

THE DISSOLUTION OF CUSTOMARY TENURE REGIMES AMONG FULANI OF NIGER DELTA IN MALI ¹

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Abstracts

The property rights regimes governing the access and allocation of Sahelian rangeland resources show great diversity and complexity in patterns of governance, governments and institutions. This complexity is difficult to catch in statutory (written) law. So far national law in most African countries has generally disregarded this complexity. Property reforms have often implied simple nationalisation of common-pool resources or introduction of modern forms of private property with little regard for customary institutional arrangements. Customary rules and co-operative agreements on resource-sharing in the commons are gradually being eroded. It is generally accepted that for pastoralists and agro-pastoralists to maintain efficient and sustainable production systems, their utilization of these rangelands require more secure property rights. Pastoralists claim customary rights to these rangelands and request recognition of such rights in official property laws. This paper suggests that some form of common property regimes might often provide the most efficient, legitimate and sustainable solution to tenure policy dilemmas for dynamic rangeland ecosystems. Privatisation would probably involve high transaction costs, unfair distribution and increased risks in production without much change in investment patterns of local producers. A revision of national laws should consider the introduction of procedural law (rules of procedure), rather than substantive law (rules of right which the court is called upon to apply). Procedural law should recognise distinctions between 'ownership in common' and 'joint ownership', and be based on certain general principles laid down in customary tenure institutions. Land tenure reforms would then be perceived as a long term process embedded in the local culture and 'folk law', rather than as a blue print intervention from the state with ambiguous policies and legal practices. Property rights need not only be come established, but legitimate.

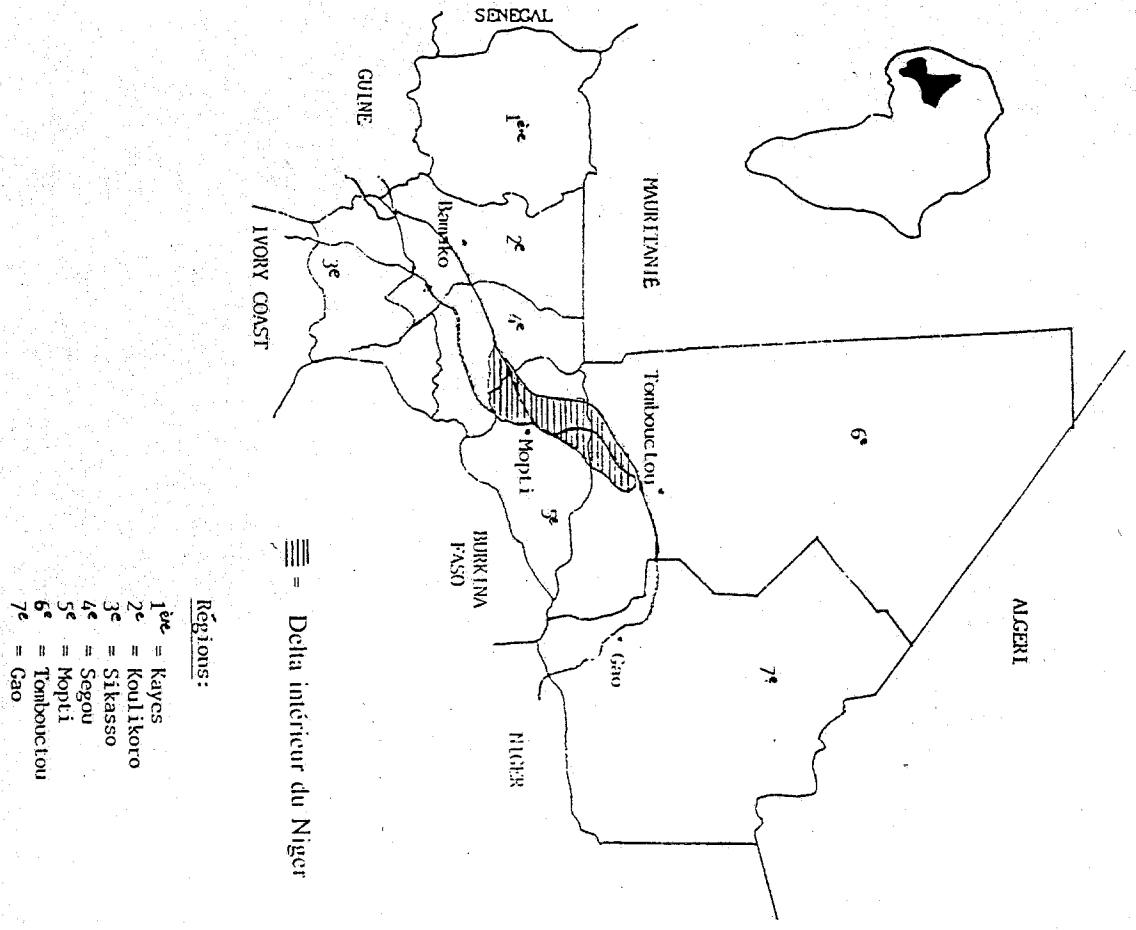
Introduction

Tenure reforms for the Sahelian rangelands have seldom fostered improved levels of productivity, resources protection or welfare for the majority of the local communities (Sanford 1983). Until recently such tenure reforms mostly implied simple nationalisation of common property regimes or introduction of modern forms of private property with little regard for common or customary systems. Pastoralists were portrayed as irrational in their economic behaviour. Their management regimes were destructive and represented major constraints for efficient use of the rangeland resources. This view was inspired by Hardin's 'Tragedy of the Commons' metaphor and is still common both among researchers, administrators and politicians. Practical solutions to rangeland and pastoral resources management were dominated by Western models of 'ranching' which instituted fixed territorial tenure limits through private or group tenure titles.²

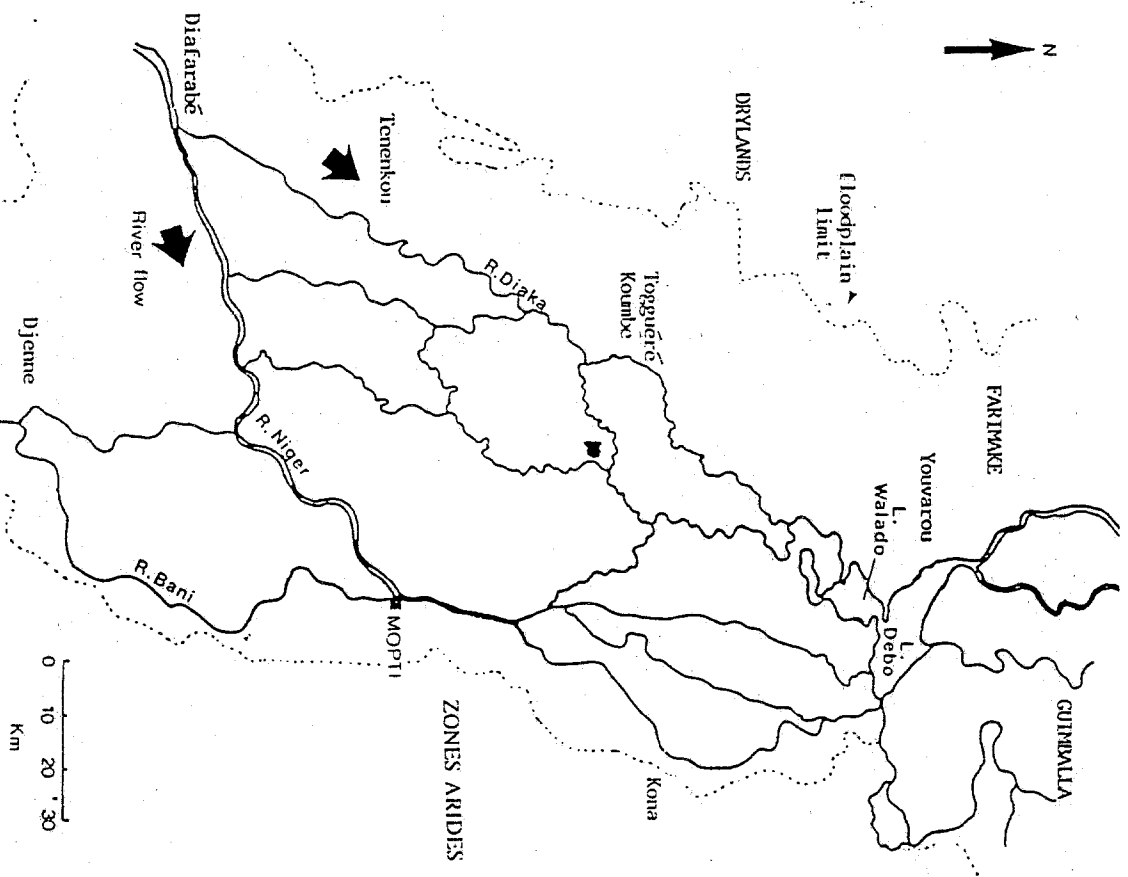
¹ The paper is presented to the Fifth Annual Conference of the International Association for the Study of Common Property (IASCP): Reinventing the Commons, 24-28 May, 1995 in Bodø, Norway. The paper draws upon field-work I have done during the period 1991-1994 in villages dominated by Fulani pastoralists in the Inland Niger Delta of Mali. It also draws upon earlier studies of the Inland Delta such as Gallais 1967, ILCA 1983, Moorehead 1991 and Turner 1992.

² Later approaches, for example pastoral associations as designed through World Bank projects, have taken a broader institutional approach to tenurial issues and give some promise

Carte 1 : La République du Mali
 (source : MOOREHEAD 1991)



Carte 2 : Le Delta intérieur du Fleuve Niger
 (source : MOOREHEAD 1991)



Goals of regulating stocking rates were based on estimated carrying capacity, assuming that some kind of optimal 'equilibrium' could be found between the number of cattle and the pasture production.

This view has been seriously challenged over the last decade (Sandford 1983, Behnke et al. 1993, Scoones 1994, Lane and Moorehead 1993). Research within ecology indicates that the ecosystems of the drier Sahelian rangelands are seldom in 'balance', but exhibit great variability and often non-equilibrium characteristics. New directions in rangeland resource tenure and policy stress that the opportunistic grazing systems, involving mobility, resource-sharing and co-operative institutional arrangements, might often make economic sense under dynamic environments. The productivity of pastoral production systems compare well with Western ranching systems under similar ecological conditions (Scoones 1994).

This paper is preoccupied with legal issues as part of an enabling institutional arrangement for the reinvention of common property regimes. New regimes should meet requirements for sustainability and legitimacy among local communities more efficiently than present regimes. The paper is mainly concerned with regimes for rangeland management, but addresses also regimes for crop land and other type of resources.

Property rights regimes governing the access and management of Sahelian rangeland resources generally depend on the customary property regimes and the states' laws, policies and practices.³ The property rights regimes interact with the market forces to create the overall conditions within which individuals or groups act. These regimes have very diverse structures of governance, governments and institutions.⁴

Empirically the paper presents, in crude terms, the evolution of one particular customary common property regime dominated by Fulani pastoralists in the Inland Niger Delta of Mali. The paper reveals the diversity, complexity and dynamism exposed in this regime, and points to factors behind its gradual destabilisation.

for the future, even if serious weakness might still prevail in design and implementation (see Vedeld 1992)

³ 'Property rights regime' is defined as follows; "A legitimate and coherent system of formally or informally enforced rules and practices used for everyday appropriation of culturally necessary means of subsistence "(Godelier 1984:71-121).. " whose local structure is dependent upon the structure of local government and the incentives of individual users" (Swallow and Bromley 1992:3). Property is not to be understood as an object but rather as a social relation; "a benefit (or income) stream, and a property right is a claim to a benefit stream that some higher body - usually the state - will agree to protect....." (Bromley 1992:2). "Common property" could then be interpreted as "a complex constellation of rights, rules, conventions and contracts" for joint control over assets and allocation of use rights among co-owners or members of the corresponding common property regime (Swallow and Bromley 1992:3, Bromley 1992b:15).

⁴ With reference to Swallow and Bromley (1992: 4) 'Governance' is defined as the process of deciding what a collective will do and how it will do it. 'Governments' (or 'governing structures' or 'organisations') exist for the process of governance; that is, governments are created to carry out governance. 'Institutions' - rules, conventions, rights and contracts - are defined by the process of governance (by the government if it exists) to co-ordinate relations among the members of a collective and to constrain what the governments may do to the members of the collective in the name of governance (see also Bromley 1989).

The empirical evidence from this and other recent studies of tenure regimes in the Sahelian rangelands tend to support the new directions in rangeland tenure and policy - as well as the general advancement in property theory: all types of property regimes (state, common, private) reduce costs of open access regimes, but they perform differently depending on the attributes of the resource, the local community, the specific rules and external institutional arrangements (state laws and practices, market integration) (Ostrom 1990). The customary tenure arrangements are not the major constraint on productive investments, agricultural and livestock development. Common-pool rangeland resources, particularly under dynamic ecological conditions, might still effectively be managed as common property, complementing or combining with private rights. The paper raises dilemmas policy and law-makers are faced with when designing new institutional arrangements. Procedural law might provide part of the answer to a more legitimate institutional arrangement for management of these commons. The paper argues against country-wide state-supported tenure reforms and private titling programmes on economic and social grounds. A main lesson is that the choice of property regime must be adopted to the particular resource constraints facing local villages and groups in a given context (Runge 1986).

Customary common property regimes in the Inland Niger Delta

The customary tenure regimes of the Fulani, which still largely control the rich flood-plain resources of the Inland Niger Delta of Mali, have intrigued several researchers (Gallais 1967 and 1984, Ba and Daget 1962, CIPEA 1983, Moorehead 1991, Turner 1992, Vedeld 1993a, Cissé 1991, Ba 1993).

These tenure regimes have a history of several centuries. They regulate access to pastoral, crop-land, fish and wild-land resources between various producer groups. A majority of these groups are settled within the Delta, but a significant portion live in the surrounding areas using the Delta mostly in the dry season. A wide variety of the Delta resources are used as part of local coping strategies. The tenure regimes reflect conditions of erratic rainfall and flood patterns, integrated production strategies, extreme variability in production, multiple species (animals, crops, trees, wildland resources), variations in demography, kinship and social organisation, inheritance, religious significance of land and animals, economy, degree of market integration, power-structures and ethnic rivalry. The regimes of the Delta might be particularly complex, but such diversity is also found in many other African settings (Bruce 1988). These regimes were particularly efficient during the period of the Dina state formation (1818-62).

Over the past 20 years the customary tenure regimes, governed mainly by customary and Islamic laws and regulations, have been gradually undermined due to a variety of pressures. The pressures are related to historical and cultural factors, state policies, tenure laws and enforcement practices, the effect of market forces, drought, and demographic change - rather than rapid growth in human and livestock populations. Attributes of the resource (e.g. flood regime, rainfall) and institutional arrangements of the local communities are also crucial factors. Political turmoil and insecurity in the regions North and West of the Delta have put restrictions on former transhumance patterns.

Gradually the customary tenure regimes (controlled access) have become more open for access by powerful interest groups within the rural communities as well as by influential outsiders with close relations to the state authorities at local and central levels. These customary regimes do no longer have the required authority and legitimacy for resolving conflicts and maintaining access rules. Increasingly, the state governance structures intervenes in tenure and land use conflicts, with reference to state laws and regulations. But actions are of ad hoc nature, ambiguous, and informal payments are common ways of settling disputes. 'The one who is willing to pay wins'. The Delta communities are no longer able to manage the resources in their own interest. The new system has failed to provide an equitable and effective alternative management regime to replace the customary one (Lane and Moorehead 1993).

The results are increased pressure on local resources, and more frequent tenure conflicts within and between local communities and production systems. A main resource use conflict, which has specific tenure dimensions, arise from the competition for access to the deeper lying flood-plain areas. These areas are suitable for flood-recession rice cultivation, while hosting some of the best remaining pastures for livestock and pastoralism. A main problem is that the regeneration of flood-plain pasture once cleared for rice cultivation, requires very high inputs of labour. Such regeneration has been carried out only in few cases. The move to crop cultivation is often a necessary and logical response to resource pressures, since productivity per hectare is so much higher than for pastures. But when this takes place without assessment of conflicting interests and uses, economic losses arise. Moreover, the livestock sector contributes by far the most to regional monetary income. Rice cultivation brings low returns at household level (CABO 1991).

The conversion of the flood-plain pastures for crop fields represents an 'enclosure' of the most valuable and critical common property resource for the pastoral Fulani of the Delta. There are also problems related to maintenance of fertility of crop land, degradation of trees and bush vegetation (browsers, fuelwood collectors), overfishing, and management of wild-land resources.

To varying degrees, the local producers are caught in a protracted crisis which affects resource utilization, and lead to degradation of resources. The drought and low flood levels have led to drastic reductions in productivity of local resources. People are deprived of livestock, crop yields have fallen and food security worsened. Many have become more dependent on the market and non-land based activities for the provision of basic needs. Permanent or temporary migration is a common survival strategy (Moorehead 1991, 1989). Some pastoralists have also become more nomadic (de Bruijn and van Dijk 1993).

These type of findings outline a new research agenda with a focus on how capabilities of resource users can be enhanced - individually and collectively - to change constraints of present property rights regimes, rather than a focus on outcomes being inevitable tragedies of 'prisoners in a dilemma', as suggested by Hardin (1968). Hardin's theories may not have proven wrong, but their general applicability has been seriously challenged - including his later modifications (Lane and Moorehead 1993).

Regarding tenure policy, the resource use and tenure conflicts outlined above raise the need to re-invent new more transparent, legitimate and effective property rights regimes. Among others, this will require revisions of state tenure laws, as well as more predictable "local tenure law" enforcement. "Local tenure law" today, represents the ambiguous legal practices in decisions over land tenure conflicts by local state or customary elites in their everyday interpretations of sometimes contradictory historic layers of laws: customary, Islamic, French colonial and Malien state law.

New evidence on rangeland management: implications for law and policy

New evidence from research on rangeland ecology have implications for the analysis of legal and institutional arrangements related to rangeland management regimes (Swallow and Bromley 1992, Moorehead 1992, Behnke et al 1993, Behnke 1994, Moorehead and 1993, Swift 1993, Cousins 1993, Bonfiglioli and Watson 1993, NOPA 1992, Shanmugaratnam et al 1992, Vedeld 1992).

Recent work by a few researchers within and around the Delta support the new ecological theories for the functioning of the rangelands (Turner 1992, Hiernaux 1993)⁵. If these general theories prove valid, it should be accepted that the drier rangelands of Africa are mostly relatively robust and resilient. The opportunistic pastoral production systems, with their boom and bust cycles, would be the most efficient ways of utilizing these rangelands. Future rangeland policies should then be more concerned about resolution of resource use conflicts/equity/civil security/drought preparedness and economic efficient management - rather than 'overstocking', rangeland degradation and 'desertification'. Management regimes should distinguish between - at least - two main ecological conditions. First of all, strict regulatory measures are unrealistic and probably unnecessary under the drier rangelands with ecological conditions of great variability (less than 3-400 mm), which we find in the Mopti region in the rainy season pastures outside the Inland Delta . Law and governance structures of rangelands should be more focused on regulation of access rights to key resources rather than on controlling resource utilization and stocking rates on a wide scale (Behnke 1994). Secondly, under the wetter rangelands, on the southern fringe of Mopti region (4-500 mm) - as well as in

⁵ The new theories about the ecological functioning of the grazing systems may be summarised in three hypotheses - each entailing important changes in conventional range management policy; i) Carrying capacity cannot be based solely on botanical considerations, but must also take into account the management objectives of the rangeland users. It is necessary to distinguish between "economic" and "ecological" carrying capacity; ii) In African dry savannahs, rainfall variability and other episodic events (disease, fire) more than anything control plant and animal populations. As rainfall becomes lower and more erratic, and pasture production more variable in time and space, non equilibrium dynamics appear. The grazing systems may be in constant disequilibrium. In such situations, destocking and removal of grazing pressure will not necessarily lead to restoration of vegetation and a new balance; iii) The spatial heterogeneity of rangeland production presupposes high animal movement as a precondition for efficient exploitation of the resources (Ellis and Swift 1988, Behnke 1992, Behnke and Scoones 1992, Behnke et al 1993, Behnke 1994, Scoones 1994). If however there are efficient checks on 'natural' factors which prevent high animal mortality during droughts (e.g. available water and feed supplements, efficient animal health service), the build up of 'artificially' high stocking rates may increase the likeliness of rangeland degradation even under drier rangelands (my addition).

the Delta on the flood-plain grass, the regulation of stocking rates according to available pasture and estimated carrying capacities of the range would become more of a concern (Behnke and Scoones 1991:22, Behnke et al 1993, Behnke 1994). Overall, there is little evidence of 'overgrazing' being a major *environmental* problem in these areas, except for the destruction of trees and bush vegetation for goats (despite high animal densities). Increasingly, however, the flood-plain grass of the Delta is becoming a scarce resource. Common-pool pastoral resources are dwindling due to low flood, drought and penetration by crop cultivators. There are regular periods of fodder scarcity. These *economic* management problems require regimes that can minimize economic loss and resource use conflicts. The major management challenge is related more to control or protection of access rights than control of animal numbers.

Are country wide tenure reforms required?

Revisions of state law, and more important, the building of efficient governance structure for law enforcement, are essential for the construction of improved property rights regimes to Sahelian rangelands. So far state law in most African countries, including Mali, has disregarded the recognition of pastoral access rights and customary tenure law.⁶

The Malien state, as many other Sahelian states, maintained the nationalisation of land introduced by the French colonial administration (see below). Experiences from other African countries show that "such legislative initiatives have done little to suppress land speculation or exhaustive commercial exploitation of the natural resources, and they have often intensified the multiplication of claims by incorporating conflicts over land into on-going struggles for power" (Berry 1994:10). Only under very special conditions has privatisation lead to improved investment and management (see below).

Regarding rangelands management, the nationalisation of land rights opened the access to these areas for crop cultivators. The state subsidised irrigation schemes and aimed at capturing benefits both from these schemes as well as from the pastoral livestock economy. Political control with pastoralists were sought through encouragement of settlement. Privatisation of rangeland or crop land has met with little success in Africa (except possibly in more limited large-scale commercialised farm or ranching areas as in e.g. Zimbabwe, Botswana, South Africa). Private titles have often neither improved small farmers' or pastoralists willingness to invest in productive measures or conservation nor improved access to credit, which are often the main economic arguments for introducing private titles. Customary tenure rights seem to give sufficient security under present conditions and constraints. Moreover, customary tenure arrangements are in general dynamic in nature and do evolve in response to changes in factor prices - and changes in local power structures. At this stage of development in Sahelian Africa, it seems that country-wide land registration and titling programmes are premature on economic grounds (- and controversial on

⁶ Though important, the *relative* importance of law reforms for development of property regimes may be debated in the Sahelian context were 'everything is negotiable' and adherence to the 'rule of law' is an exception rather than the norm. The development of legitimate and efficient law enforcement arrangements of whatever tenure laws exist, might be more of a concern than the development of new formal statutory law (Toulmin 1991).

political grounds). Generally speaking, there are often other more important institutional constraints to agricultural and economic development that need to be addressed before country-wide tenure reforms are carried out, such as deficiencies in social and physical infrastructure, price policies, access to markets, availability of productive technology and skills - to mention some (Migot-Adholla et al 1991, Hunter and Mabbs-Zeno 1986, Wachter 1992, Berry 1994, Feeder and Feeny 1991). At local level, it is important that land has been and still is relatively abundant - both crop land and pastures, while labour is often the real scarce factor for production. But the **pastoral tenure issue**, due to the various pressures on pastoral resources and the many conflicts over **access rights to key pastoral resources**, is a particular problem that require urgent attention in many Sahelian countries, including Mali.⁷

Which rule of law: state law or folk law ?

How are access rights defended today? In the Sahel security of tenure is often not guaranteed by the passage of law, but must be maintained through negotiations, adjudication and political manoeuvre. "If rights in land are defended through on-going, open-ended debate over authority and obligation as well as rules and practices, the security of farmers' rights (or pastoralists rights - my addition) depends on the terms in which they participate in such debates and in the domestic, judicial and bureaucratic arenas in which they occur." (Berry 1994:11).

Often these different arenas are inter-voven and not easy to distinguish from each other. People and organisations involved in tenure disputes may play several roles, make claims through different channels or historic 'layers' of tenure laws and rules. In my analysis I have found it useful to recognise a certain "legal pluralism". In addition to "state law" and "customary law" I use "folk law" as well as "local law" as separate categories of law (Allott and Woodman 1985). "Folk law" has two dimensions. First, it encompasses "customary law" (which may or may not be written, recorded or clearly codified). Secondly, there is a world of paralegal or quasi-legal forms of rules and regulations of groups operating outside regular systems of courts and law, but embedded within the state systems. In the Malian context, the local administrators (village chiefs and Chefs Arrondissements) in their exercise of (state) power related to land use and tenure conflicts tend to combine "state law" and various dimension of "folk law" to produce a third legal system or practice: "local law" "Local law" represents an original attempt to balance the convergence of central and local general needs" (Le Roy 1985:257).

Some dilemmas for policy and law makers

Here lies several challenges and dilemmas for state policy and law makers. In order for customary pastoral tenure regimes to be recognised in state law, they must be described in one way or another. That also means they must be categorised. But the complexity and flexibility inherent in the customary tenure systems and folk law make generalisation and categorisation according to recognised legal concepts - or social science concepts - difficult.

First of all, such customary tenure regimes cannot be described by the general categories of non-property, common property, state and private property. Such

⁷ During my last visit to the Delta, a clash between two Fulani groups resulted in 29 people killed and 42 injured in a conflict over tenure rights to pasture (7th December 1993).

simplified and Western categorisation will neither catch the local diversity and complexity - nor the dynamism and fluidity. These customary institutions are continuously reworked and reinterpreted (Berry 1994). Introduction of private property rights to rangelands would probably imply high costs in defining and enforcing rights, increasing inequality as resources are already unevenly distributed across groups and communities, and less 'insurance' against environmental variability and uncertainty for individual producers.⁸

Secondly, our understanding of how common property regimes operate, even under less fluid and more predictable conditions than in the African setting, is still insufficient as foundation for reliable and useful advice to policy and law makers (Ostrom 1990 and 1992). A particular weakness with present models is that they tend to assume that the actors have relatively equal rights and that competition is on equal terms, harmonic, with full information and that they are economically 'rational' individuals who seek to maximise benefits within a relatively smoothly operating market from a relative uniform resource (e.g. *either* rangeland *or* crop land - not both type of resources by the same producers). This is not the case within the hierarcical and stratified Fulani-dominated societies of these dynamic drylands. Another weakness with these property rights models is that they tend to consider organisations and institutions to be more or less permanent, when in fact no condition is permanent. Everything is open to negotiation. A tenure conflict settled through one channel, might be re-opened through other channels.

Even if Sahelian (and Malien) rangelands in important ways represent relatively indivisible resource systems, there are ways of dividing the benefits from these resources - recognised under customary tenure rules. Customary institutions in general recognise that property rights are a bundle of rights. These structures contain access rights to different resources (arable land, pasture, trees, water, wild food) for different groups of users - as well as a range of ownership or legal systems. Categorized according to Western concepts they include free-hold titles, usufruct rights, share-tenancy rights, ownership in common, joint ownership. Some are temporary occupancy rights and rights of transit. Pastoral production systems often rely on the utilization of the whole spectre of the broader categories of property rights systems: state, private and common property - often within the same basic locality.

For the national law-makers a main parameter of choice regarding the design of new property regimes for the rangelands is the *degree and character of excludability* to be introduced for different resources.

Common property regimes for African rangelands: diverse, dynamic, complex, flexible

How do the customary regimes that govern (or have governed) the utilization of African rangelands operate? According to a review by Swallow and Bromley (1992:5) some of these regimes have centralised and hierarchical governments, like several agro-pastoral groups in the East and Southern Africa, in which chiefs carry out executive, legislative, and judicial functions (for example among the Basotho of

⁸ Like what is now attempted in a country-wide experiment in Niger (Lund 1993).

Lesotho in the 19th century) and among several of the agro-pastoral Fulani groups in West Africa.⁹ In addition to the Fulani of the Inland Niger Delta, which is the object of this paper, such groups are found in Northern Cameroun and Northern Nigeria, Futa Jallon in Guinea Conakry, and in the Senegal River Valley. Contrary to such hierarchical structures, most pastoral groups in East and West Africa have non-stratified, stateless or egalitarian customary political structures. Governance organisations are either 'diffused' or 'minimal'. 'Diffused' customary governments imply that legislative and judicial authority is held by a relatively egalitarian elders' councils, like for the Maasai, Kipsigi, Pokot, Nandi and Samburu of Kenya, and the Karimojong of Uganda. Among the hierarchical societies of the Moors and Tuaregs of West Africa, the organisations controlling access to range and water resources are based on lineage and kinship affiliations. The membership in the group confers the right to exclude other pastoral groups from the resources. 'Minimal' governments imply that neither chiefs nor elders' councils have legitimate authority or power to enforce rules. Enforcement of rules are done at individual or in coalitions of groups. Examples include the Western Dinka, Nuer and Madari of Sudan, the Turkana of Kenya and some nomadic Fulani groups of West Africa (Woodaabe of Niger and Northern Nigeria). But there are few of the common property regimes for African rangelands that are subject to institutional vacuums and open access, nor are many strictly controlled through central institutions, or completely regulated by self-enforcing institutions which co-ordinate access among co-owners as assumed by Runge (1981,1986). Rather, the regimes are comprised of a diverse variety of rights, rules, conventions, and contracts. "The lack of legitimate and powerful governmental organisations makes effective implementation of rangeland property rights the exception, rather than the norm, in Africa." (Swallow and Bromley 1992:9). But there are several exceptions, the Dina code among the Fulani in the Inland Niger River Delta is one of these.

The Context : Population and resource use systems of the Inland Delta

The total population in the Inland Niger Delta is about 300 000 with an annual population growth rate of about 1-2% (i.e. net out-migration). A population density ranging from 10-25 persons/sq. km, should not necessarily represent a major problem to the long-term 'carrying capacity' of these rangelands taking into consideration the *potential* production capacity of this Delta.¹⁰ But current property regimes are apparently not able to prevent degradation and resource use conflicts - even with present demographic patterns and technology levels.

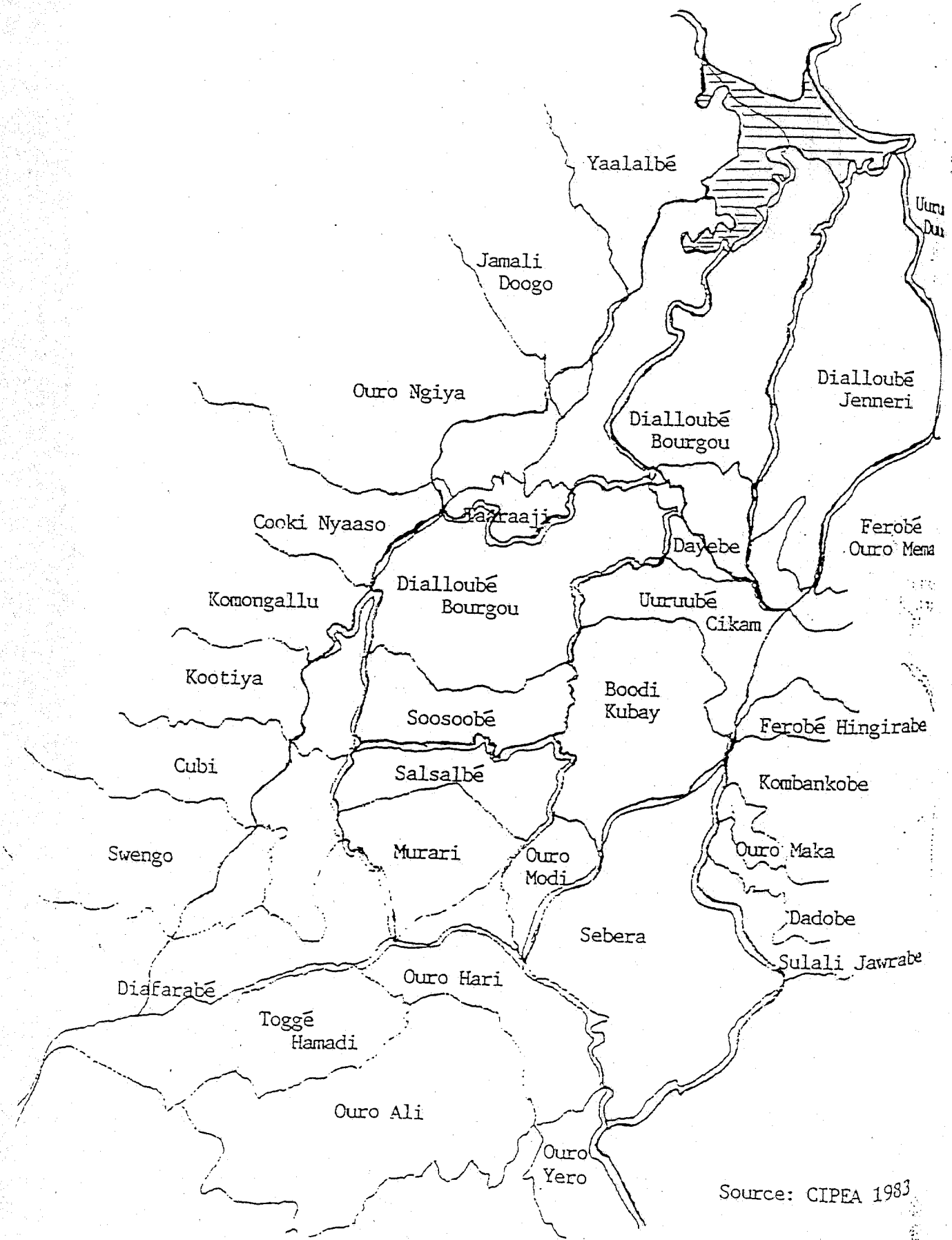
⁹ A customary tenure system or regime would share many of the characteristics of a property rights regime. Here it refers essentially to governance structures operating outside the national state structures - partly conditioned by and partly independent of the state.

¹⁰ Population growth and demography must be seen in conjunction with other interacting political-economic factors. Compare for example the Delta with the Machokos case from Kenya under similar rainfall conditions: Many observers in the 1930s and 1940s saw the Machakos District as suffering from significant resource degradation at a population density of 70 persons/sq. km. In 1990 degradation had halted at a density of 350 persons/sq. km. The lesson is that population increase might be compatible with environmental recovery, provided new technology develops, and market access improves and make local production profitable and investment in conservation measures possible (see Tiffen 1993, see also Turner et al. 1993, and Boserup 1990).

There are different interest groups involved in the use of the Delta and the surrounding rangelands, with distinct ethnic identities and production strategies. Moorehead (1991) has identified five main production systems: Transhumant pastoralists (or herders - mainly Fulani), semi-sedentary farmers (rice producers - mainly Rimaybe - former slaves of the Fulani, Bambara and Marka), agro-pastoralists (Fulani, Rimaybe, and others), agro-fishermen and transhumant fishermen (Boso, Somono, Rimaybe). There are also absentee investors in livestock, agriculture and fisheries such as traders and government officials, often settled outside or in the outskirts of the Inland Delta.

The Inland Delta represents a complex ecological system of great but uncertain productivity, which depends crucially on rainfall (3-500mm) and annual flood levels of the Bani and Niger Rivers. About 16,000 sq. km is flooded under "normal" flood levels - leaving several thousand sq. km of flood-plain pastures for dry-season grazing and land for flood retreat crop cultivation (rice). Following the drought, only 1/3 of this area is presently flooded and biomass production might be 50% lower than under the pre-drought conditions (1960s) (CABO 1991). This indicates large and stochastic fluctuations in pasture (and crop) production across seasons, years and zones. The flood-plain pastures play a vital role in sustaining livestock production and pastoralism in Mali and in the Mopti region. More than 1 million cattle and 2,5 million small-stock utilize these areas for dry season grazing 7-8 months per year, from October/November to May/June. During the remaining 4 months of rainy season the Fulani herders transhume with the livestock to dry land pastures off the Delta (Mema, Sahel, Seno-Mango, Gourma). Overall, the Mopti region encompasses about 23% of the total national cattle herd (1991 census), which is a main export commodity for Mali. But cattle populations fluctuate a lot. About 50% of the local cattle might have died during the two most critical drought periods in 1973/74 and 1984/85.

Map 3 The pasturing leyde of the Inland Niger Delta



Source: CIPEA 1983

Customary tenure on community basis: the Dina (1818-1862) ¹¹

The property regimes of the Inland Delta were apparently most effective following the establishment of the Hamdallahi caliphate (state) in the early nineteenth century (1818-62). Following a revolt and a *jihad* (Islamic war) against the combined forces of local aristocrats (the Ardobé) and the Bamanan Kingdom in Segou, Cheikou Ahmadou and his followers were able to establish hegemony over the Delta territory and various local communities. They established an Islamic theocratic state - the Dina. They also captured people of the local communities and made them slaves (including the Rimaybe). These slaves were forced to settle among or close to their Fulani 'masters'. The Delta economy during the Dina has been described as a highly centralised war economy. "The Hamdallahi state extracted surplus for its relatively large public finance budget through war booty, fines and confiscations imposed on individuals or communities, agricultural production by state slaves, growth of state herds, and taxation" (Turner 1992). Private agricultural slaves were expected to work in their master's fields. The masters maintained 1/6 share of the harvest. A head tax was also imposed on the slaves.

The Dina formalised important tenure institutions and organisations. Although the distribution of pasture rights as well as rights to crop land and fishing pre-dates the Dina, the regime of Cheikou Ahmadou meant that the tenure rights were codified and regulated within and between communities to the interest of the Fulani nobility. (Gallais 1967 and 1984, Lewis 1981, Turner 1992, Moorehead 1991, de Bruijn and van Dijk 1992 and 1993). Today, elements of earlier and later systems (e.g. French colonial system from 1893, independent Mali from 1960) overlap to produce a complex layer of rights, rules and practices. The Dina governance structures and institutions were largely based on the Islamic law (sharia), adjusted according to customary institutions. Codification was carried out centrally and written down. Copies of this 'taric' is still available in a few of the Delta villages. The establishment of governments at different levels, and the formation of institutions and mechanism for enforcement of access rights were in important ways governed from the central state administration at Hamdallahi (which ruins are located close to Mopti).

Although it was not an egalitarian system, it represented a fairly complex and efficient common property regime for the governance of resource utilization (Gallais 1967, Turner 1992, Moorehead 1991, Swift 1988 and 1989). It "worked to allocate resources between co-owners of a defined territory and manage access to non-owners, broadly in line with the physical and technical attributes of the resources they used.." (Moorehead 1991:166). The regime functioned through relations of interdependencies (e.g. the slave economy) and reciprocity - backed up by a system of beliefs that accorded first comers (among the noble lineages of the Fulani) the right to manage. The central administration as well as the other levels in the governance structures guaranteed the appropriators a *legitimate* claim to the stream of benefits arising from the use of the resources.

Regarding the management of rangelands, the central administration of Hamdallahi recognised the division of the Inland Delta into about thirty pastoral territories

¹¹ 'Dina' means 'religion'. It refers to the political and cultural revolution under the political and religious leadership of Cheikou Ahmadou, a Fulani marabouts who established hegemony over a territory from Macina in the south to Toumbouctou in the north (1818-1862).

(leyde) headed by 'masters of pasture', the Jowro.¹² The Jowros and their families were delegated rights to control the pastures within their leydi (sing.). Originally the Jowro was a man held in confidence by a Fulani clan chief (an Ardobé). His control over pastures was checked by the Ardobé. With the Hamdullahi administration the Jowro was, reluctantly, given full control over pastoral resources in their leydi and implicit rights to allocate land to their slaves as they saw fit (Turner 1992:22). A Jowro would herd the livestock of his chief and organise the transhumance among groups of Fulani. The Jowro also today allocate access rights to grazing among groups of herders, and set dates and conditions for use of the pastures within his leydi. During the Dina a new clerical class (marabouts) gained significant political and economic power - both at central and local levels. They are of particular importance today in the villages I did field-work (see below). The Dina instituted 'masters of water' and 'masters of hunting' (babalonga) who were delegated responsibility for access, control and management of fish and wildlife resources respectively. There were 'chiefs of slaves' (besseman) with particular responsibilities for distribution and management of village crop land. The three latter institutions still operate today. The besseman's responsibility was (and still is) directly subordinated the authority of the village chief. He was selected among the 'slaves' as their 'chief' and head of the 'slave' or Rimaybe-quarters. The descendants of the first 'slaves' are still there today, to various degree dependent on their former masters. Most of them live in in separate village quarters or nearby villages, but some still live within the family compounds as dependants of their patrons.

The colonial administration and increased market integration (1898-1960) .

Moorehead observes that under the Dina the Delta was "administered by a political and economic structure that relied upon the area for its livelihood and sought to graft its hegemony onto an existing system. The colonial administration of the Delta however, did not rely on the area for what it produced, and was staffed by expatriates whose knowledge of the zone was perforce small. Through introducing land tenure legislation based upon European pre-conceptions, it denied the rights of local producers to resources ... and confronted local producers with a system of allocation that took little account of customary rules" (1991:167).¹³

With the French colonial rule, the hegemony of the Fulani was gradually weakened. "Though customary managers were left in place by the colonial authorities, their ability to enforce access rights and to manage the full range of resources they traditionally presided over were significantly undermined by the French, whose policy with regard to land rights was to lead directly to the insecurity of tenure that characterise the region today" (Moorehead 1991:155).

¹² This right to be a Jowro is inherited from farther to oldest son - often in direct succession since before the Dina. His jurisdiction is limited to the sub-leydi of his hegemony and to the organisation of the corporate herding unit (egguirgol) which has priority access to the sub-leydi under his control (Gallais 1967).

¹³ The Dina system was also temporarily disrupted during an invasion of toucouleurs (Fulani) from the East (1862-1898) immediately before the French colonisation. A period of war and unrest followed. The elite lineages of the Dina were able to re-establish their political authority with the peace following the French colonial regime. But the central state administration at Hamdallah was not re-created.

The French system of indirect rule implied that the chieftains were made the lowest level in the French administrative hierarchy, with the head of the chieftains being appointed 'Chefs Cantonnements'. Unlike the chiefs the Jowro had no official duties under the French administrative system. They maintained their role in rangeland management, but was no longer allowed to decide on dates at which cattle could enter the Delta at various crossings.

Arguing that land, in order to be efficiently used, should be brought under private property regimes, the French colonial administration legally declared all vacant land for property of the state (*domaine privé de l'état*) in 1904. All land which was not 'developed' (*'mise en valeur'*) i.e. not cleared and used for agriculture, was nationalised including all rangelands. A next step would be to encourage private appropriation and titling. This opened the Delta for outsiders i.e. for all citizens of Mali. Colonisation by new farm settlers increased after the drought in 1913-14 (*Arrêté*).

The French colonial administration did not initially take a firm stand against slavery, but after local negotiations agreed to abolish it in 1908. Most of the slaves in the Delta remained, but now started to refuse paying their masters (for example the head tax). The French, however, agreed to maintain a land rent to be paid by the former slaves to the Fulani 'land owners', including the Jowro. But this was not an 'ownership' in a strict legal sense, because the former slaves were given permanent usufruct rights to cultivate the land they were presently farming. Moreover, the former masters were also obliged to provide them with land to meet future subsistence needs. This contradiction in rules made permanent share cropping arrangements difficult to maintain in many areas. It had "far reaching effects on the nature of resource access and control " in the Delta (Turner 1992:27).

These acts eroded the power of the customary leaders to rule according to the Dina (Hesseling and Coulibali 1991). It facilitated the break between the Rimaybe rice cultivators and their Fulani masters in many communities. By maintaining customary chiefs as local administrative rulers (*Chef Cantonnements*), and obliging them to provide forced labour and army recruits, the colonial administration further discredited their authority and legitimacy as customary leaders. A policy of extracting wealth from the Delta and the integration in a wider, monetised market economy led to increased pressure from these outsiders for the state to ignore customary systems of exclusion and to allow them access to resources. The result was increased pressure on local resources (Moorehead 1991).

Post-independence state (1960-1993) and changing property regimes

Moorehead claims that "the administration of the Delta and the economic policies that have been followed since independence (1960) demonstrate a remarkable degree of consistency with colonial rule" (1991:167). The post-independence state laws reconfirm the 'nationalisation' of all rangeland (see below).¹⁴

¹⁴ An interesting topic for research would be the political economy of the law constitution processes before and after independence. But that is beyond the scope of this paper (see Rohegude 1990)

Most of the former Chefs Cantonnements were removed and suppressed by the independent government. New administrative boundaries were established, by regrouping a number of villages into Arrondissements. The new boundaries cut across the chieftainships and Cantonnement. The new Chefs d'Arrondissement were often of military origin in the French tradition and came from different cultures than those they served. They did not speak the local language and were foreign to local customs. Village chiefs were appointed the lowest level in the state administration and made responsible for hut and livestock tax collection. But while tax to the Dina was spent locally, little was now returned for local development. The chiefs were closely associated with the state administration and the only political party (UDPM). In many respect this weakened their legitimacy in regulation of land tenure and village affairs. They were compelled to act more according to state laws and interests. The Jowro was also suppressed in various ways, but they were able to maintain much of their informal customary roles. They are still not formally recognised by state authorities, but in practice they are consulted on tenure matters.

The government continued the French policy of making access to the Delta resources easier for 'all Maliens'. 'Outsiders' increased investments in irrigated crop cultivation, livestock raising, fishing, and charcoal burning. These outsider groups - local or urban merchants, government officials or other investors - are normally more interested in short term gains than in long-term management of local resources.

Regarding water rights, the state continued to expand the large investments in the upstream irrigation schemes in Office du Niger as well as within the Inland Delta, which were started by the French. By diverting water for Office du Niger, flood-water peaks are cut - reducing the areas flooded for pastures, crop production and fisheries for the Delta communities downstreams (Turner 1992).

Governance structures: Social and territorial organisation of the Jalloubé

This paper is largely based on field work among a few groups of sedentary Fulani living in a cluster of villages within the leydi of Jalloubé in the north-central part of the Delta. This leydi covers most of the Dialloubé District or 'Arrondissement de Dialloubé'. This is the largest of the leyde covering an area of about 2,700 sq. km and about 15 - 20,000 people. It encompasses the largest remaining flood-plain pastures of the Delta and holds a unique position in the regional resource system. Population density in this areas is fairly low (between 5-10 persons/sq. km). Cattle population densities, however, reach high levels since most of the cattle gather in the pastures of Lac Debo, in the northern parts of the leyde, towards the end of the dry season. Dialloubé village is the administrative centre and the seat of one of the most important chieftain-ships of the Delta.

The basic social units of the local Fulani communities are the households. One or several households form a family unit. The extended family units are - as for most pastoral groups - organised in lineages (leynol) and clans. But the family units are also organised in village communities, which include family units of other ethnic groups (e.g. Rimaybe, Boso, Somono, Twareg, Bella). The access rights to land are attributed on a combination of community (wuro) and family/kinship membership criteria. Rights are in important ways defended or secured on a community basis

rather than on a patrilineage (suudu-baaba) or clan (leynol) basis (Lewis 1981).¹⁵ The status accorded to the families of the founding lineage's of the ('noble') Fulani in each community provides priority access to rangeland and crop land resources vis-à-vis other members of the community.¹⁶ These noble families are descendants of the founders of the villages, which were established in the first years of the Dina. Corresponding to each village and village council is a village territory ("terroir villagois") which encompasses strictly controlled rice fields, rainfed crop land, village pasturing territory, forest and wild-land resources.

The village chief of Dialloubé, previously Chef Cantonnement under the French colonial administration, is also the head of several Iowro families with major customary authority over the pastures of Jalloubé leyde. Hence, he combines the roles as elected village community chief and clan chief of the most influential founding family. The village chiefs have a delegated responsibility from the community to allocate access rights to certain village pasturing commons, village crop land, grass, fish, wild-land or other natural resources in the vicinity of each village. Most members of the communities inside the Delta have rights of access to local resources. The village territory is defended on a community basis, although it will be the pastoral Fulani who organise surveillance groups to protect the common village pastures.

Membership in a village community - independent of ethnicity and cast - confer rights to crop land in the village territory. This includes the caste that is still referred to as 'esclaves' (Rimaybe) (even by themselves). But while the Rimaybe claim usufruct rights to the land they cultivate, the Fulani would often hold: "They are our 'esclaves', therefore we provide them with our land". The fields of the Rimaybe - as well as the fields of agro-fishermen (Boso) - are often located to zones which are less productive than the fields of the noble Fulani families. Women have no rights to own land or to inherit land. More recently arrived settlers would need to negotiate access to land with the village chief. Only exceptionally are people denied access to land. The Rimaybe and the Boso are both prepared to defend their land rights together with the noble Fulani vis-à-vis intruders. The Fulani do not have rights to expell the Rimaybe from their fields. These rules evolved at a time when arable land was relatively abundant, and the Rimaybe were tenants of the noble Fulani. The Fulani themselves were historically not engaged in crop cultivation to the extent they are today (when they are dispossessed of livestock). According to customary rules the crop land could not be sold, divided, rented, or put in others charge in any ways by unilateral decisions by the family chief alone. This may still hold for village

¹⁵ This is also the case for most other Fulani communities in West Africa. This distinguishes the Fulani of the Delta from the neighbouring Tuareg and Moor pastoralists to the north. These nomadic or semi-nomadic groups use patrilineal relations to form warring groups which protects grazing rights of the clan. They have always avoided state interference and control.

¹⁶ Within the villages I study, access rights to crop land and pasture are also related to castes or socio-ethnic classes. There are four or five main different castes: 1. the 'noble' or aristocrats (a. herders and b.marabous), 2. traders/merchants, 3. story tellers/artisans, and 4. 'slaves'(or 'captifs', 'dependants'). For example, among the former slaves, the Rimaybe, many do not have ownership to land according to customary tenure rules, but cultivate the land of their 'patrons'. Such 'patron-client' or tenancy relationships take many forms within crop cultivation, ranging from almost complete dependants via situations were the former 'client' provides only symbolic gifts to his 'patron' to conditions of almost 'freehold' tenure.

crop land. But not for the crop land developed on land leased from the Jowro. Today, land 'owned' by the Jowro constitute the most important land asset for many households, especially for many Rimaybe cultivators. All men, women, and children have ownership rights to animals.

The Fulani pastoral families have according to the Dina taric written and specified access rights to common *dry season* pastures of the leyde. In the early part of the dry season they use the flood-plain pastures in the southern part of the leyde (in Kootyia) - later they move to the large flood-plain pastures North around Lac Debo. All members of the Fulani communities of the leyde have access rights for free to these pastures.

The main rule governing access to common pastoral resources for pastoral groups from other leydi or from outside the Delta is the conngi; a grazing fee to be paid the Jowro in cash or kind. Such fees are paid for passing the river, for trespassing a leyde and for camping within a leyde. The herds of the outsiders have to follow into the Delta after the herds of the Jowro and the insiders in a defined sequence. At the first rain the herds of the outsiders are supposed to leave the Delta. The amount to be paid as a fee would depend on the size of the herd, availability of pasture and the negotiation and relations with the Jowro concerned. These fees have increased significantly with increasing scarcity of pasture, and they are kept by the Jowro and his family.¹⁷

The variability in rainfall and flood patterns calls for such resource-sharing arrangements between communities in different micro-ecological and micro-climatic zones. It illustrates the indivisibility of the resource system. Such "inter-regional ties are worked out on a herd-to-herd, herd-to-community, or community-to-community basis. Rarely are pasture and water resource-sharing arrangements made by or on behalf of one's lineage" (Lewis 1981:5). It means that the organisation of resource access rights is separated from that of patrilineal livestock inheritance. But as we shall see, there are important exceptions to this.

Access rights to *rainy season* pastures outside the flood-plain of the Delta are less strictly controlled. But transhuming Fulani herders have established access rights with neighbouring pastoral groups who control water and range resources in these zones (e.g. Moors, Twareg or other Fulani groups).

Regulated access rights to all types of resources

The tenure rules in the area range from situations where resources for all practical purposes are open for anybody to use (open access) to situations where resources are managed by individuals or local groups as if they were ordinary private property (controlled access). To a large degree the control over resources follow the historical rules:

¹⁷ At the time of the Cheikou Ahmadou the income from the fees were to be redistributed as follows: one third for the chief of the family (suudu-baaba), one third for his relatives; i.e. other household chiefs, one third for the fee collector, whether he is a family member or not (Gallais 1967). The income was mostly used locally (for visitors, marriages, other ceremonies, communal grain stores, or shared between the founding lineage's).

The *controlled-access common property* regimes would be for resources such as the perennial flood-plain pastures, village flood-plain fields and pasturing commons, irrigated fields, important dryland pastures, crop residues, fisheries resources, wells, certain trees, wild grain and wildlife (Moorehead 1991).

More *open-access (non-property) regimes* would be for dryland pastures and forest/trees in the rainy season pastures outside the Delta.

But there are, as already indicated, some significant evolutions. Generally speaking, the customary tenure regimes of Jalloubé (and the the Delta) are clearly embedded in the local culture, in customary law and folk law. The efficiency of the regimes, however, vary accross village communities even between neighbouring villages with fairly similar socio-ethnic organisations and institutions. Rules are not always fixed, but often flexible and dynamic, sometimes to the point of being fluid. Negotiation over rules is always possible. The need for access to key resources might be unpredictable, particularly under drought or unrest. Herd movements, for example, can be fairly irregular.

The Dina institutions guide folk law within the Fulani communities today. But they are not fully accepted by communities of other ethnic groups. Some groups, for example, claim rights of first arrivors. But certain rules are quite strictly adhered to (for example the sequence each family herd follows in the egguirgol (co-operative herd)). And the basic organisational and institutional structures of the regimes are generally - though not always - respected among the communities I have studied. In other communities of the Delta they are often less adhered to. The regimes are not radically different from regime patterns established centuries ago. But the insitutions are more often challenged. In important ways they tend to change at local levels to meet specific needs of various user groups. There is a continous political-economic battle going on between various interest groups. The customary rules are not always helpful in guiding decisions today. Although some of the local leaders are literate or have literate people to assist themselves, there is no systematic development of legal practices (jurisprudence). But there are local 'judges' that guard Islamic laws and customs and assist the chiefs in tenure disputes.

Animal property, access rights to pasture and transhumance management

Let us now look closer at some important features of these regimes, and indicate why local complexities are not easily captured in statutory law. In general, property rights to land resources would be tied to the ownership of these fixed resources. But within the Delta there are important ways in which the ownership and management of *animals* decide the owners' access rights to pasture. First of all the access right to pasture within the Delta is decided by the status and position a Fulani has in a certain sequence within each corporate transhumance herd (egguirgol). When these corporate herds return from tranhumance and enter the Delta, each family herd follows after the Iowro (master of pasture) according to a written sequence. The Iowro is always the first to enter his leyde. But the position a Fulani family-herd maintains in this sequence, is actually tied to the ownership of the main part of the family herd. It is not tied to the owner of the herd being the head of the family. Rather it depends on him being the owner of the largest section of the family herd. If the herd is split, for example between father and son or between two brothers, the

one who maintains the largest part of the family herd will guard the family position in the sequence. The other will then have to negotiate a new position with the Jowro, which is always inferior to the previous one. If a pastoralist for some reason loses his family herd, he may lose his position of access rights altogether. The inheritance of such a position follows the patrilineal inheritance of the main part of the family cattle herd. (The inheritance of the title of a Jowro follows this same principle. I can document cases where families have lost their title of Jowro because they had lost most of their animals.) But can an access rights or ownership control to rangelands be tied to cattle ownership in modern law? Is there any precedence for this from other countries?

Secondly, the size of a certain herd, obviously, determines the amount of grass the owner benefits from. There is no system of quotas for members of the Delta communities. So far, such rules have probably not been necessary to develop since pastures have been in relative abundance within the Delta. It is rather the availability of non-equilibrium rainy-season pastures outside the Delta that set the limit on livestock survival and growth in livestock numbers (Hiernaux 1992, personal message). If we accept the new ecological paradigms, the availability of biomass in these rangelands is relatively independent on stocking densities.

Thirdly, the transhumance patterns in important ways decide access rights to different rangeland areas within and between years. Essential to herd management is the re-grouping of the individually owned family cattle into larger communal herd units. These herd units are split according to certain management criteria with the aim of optimising the use of the pastoral resources and the production output. The main product from the pastoral production is milk, which needs to be consumed immediately, or processed into yoghurt, butter or other products which can sustain a little longer storing. Milk and milk products are either consumed directly by the household or used to barter for grain or other products. Hence the herd splitting aims at the best possible allocation of milking cows within the system of herd units. Cattle (or small-stock) are generally slaughtered rather seldom for home consumption (ceremonies, gifts). But contrary to popular belief regarding pastoral livestock keepers, there is a regular off-take for sale: 7% of total herd size reported by Wagenaar et al (1986) and 13% by Turner (1991).

There are five different types of communal herd units in the Delta, which each have their own governance regime through specific transhumance orbits. The main herd, the garci, is comprised of the bulls and the non-lactating cows, and only a few milking cows to provide milk for the herders' daily consumption. This herd leaves the large flood-plain pastures of Lac Debo north in the Delta for transhumance to the Mema or the Sahel (to Mauritania) in August (300-400 km). They return after about three months and cross the Niger River (Diaka river branch) at fixed dates. The other herd units include the benndi, which consists of the lactating cows using the village pasturing commons and providing milk for the family members remaining in the village. The cipi and the dunti, are separated from the benndi. The former is brought to areas further from the village where there is a more permanent market for milk, for example near the major rice cultivating settlements (e.g. in Kootyia). The latter remains in the village to provide milk when the benndi moves to meet the garci. There is also fifth management unit, the allooji, which consists of work oxen - mostly for ploughing. This is herded by the Fulani, but is mostly owned by farmers and agro-fishermen. This unit is kept around the village. ¹⁸

To complicate this picture further, each herder will normally have in his custody animals of other kinsmen or close friends, to whom he himself will also entrust a few animals. One herd unit may have as many as 50 owners (Waagenar et al 1986). Such exchange of animals can be for longer or shorter periods. The herder ensures proper management of the animal, while he is usually entitled to the milk from the cows. It is also common for the herd owners of one village community to spread their animals to several different corporate herds (egguirdi) managed by different Jowro. In one of the villages I studied (Kakagna), the cattle herds owned by the different households are spread on as much as twelve different corporate herds. These are ways of spreading risks related to scarcity of pasture and water resources, disease outbreaks and cattle thefts. These nets of exchange create alliances and mutual dependency relations, important for building community cohesion in multi-ethnic and multi-caste societies, where also various degrees of specialisation in production exist.¹⁹ People avoid challenging these relations too much.

Tenure conflict management: the village chiefs and the Jowro

The kinship system, based on patrilineal lineages and clans, as well as the age-set system, forms the basis for an hierarcical institutional arrangement that ensuressssss co-operation and sanctions rather efficiently at various levels if tenurial rules are violated. The Fulani village chiefs hold a key position in the tenure regimes of the village territories and is important in conflict management. The Jowro controls the pasture land of their leydi. The chiefs (and the Jowro) always come from the Fulani nobility (with few exceptions). The chiefs can only be elected from certain (founding) lineages.

¹⁸ By contrast, other pastoral groups like the Borana (Kenya and Ethiopia) and the Samburu (Kenya) split their animals into non-lactating and milking cows only.

¹⁹ Efficient herd management require particular skills, proper risk aversion strategies and some good luck. Important aspects of herd management which affect herd ownership and indirectly property rights are individual decisions regarding sales and purchase of animals, animal health management, choice of species composition, herd composition (number of males and females, age structures).

Among 230 households in four villages, I recorded 34 tenure conflicts and 71 crop devastations by animals over the three years period 1991-1994. A crop devastation is often related to tenure disputes. The most common type of tenure conflict within villages are disputes over field limits. Among the tenure conflicts analysed, 53% found their solution between the two opposing parties, 20% involved the village chief or the Jowro, 12% involved the administration, while 9% ended up in the court. Among the crop devastations, almost 70% were solved between the parties (often 'left to God to judge'), 11% involved the chief or the Jowro, 16% involved the administration, and 1 case ended up in the court. There are very few conflicts between herders of the same community over access to pasture. *Intra-community* tenure conflicts usually find their solutions at village level - either directly between the opposing parties, or with the assistance of elders, the chief of 'esclaves' (bessema) or the village chief. Decisions taken at village level are often respected.

Inter-community conflicts more often involve the administration or the court system. Among 15 of the most serious tenure conflicts, the majority concerned external relations and contestations over territorial control, particularly related to control over access rights to pastures, and cultivation of pastures or cattle paths. There are often disagreements between neighbours over territorial limits. Limits are continuously tested and bent. Due to increasing resource scarcity, several of the pastoral communities I have studied in the Delta have tried to expand their territories and resource entitlements. In the process they have also expelled their neighbours/kins (which is a common survival strategy among pastoral groups, see Behnke 1994). Voluntary destocking and adjustment of numbers to available grazing within a certain territory is not done and may not have been necessary due to massive animal deaths as well as a regular off-take through market channels.

The factors behind these conflicts are complex. They often relate to historical factors (rights of first arrival). Several of the conflicts surfaced following the first main drought (1973). In some cases there are clear violations of rights and rules, in other cases it may be more difficult to say who has the right.

In many respect the chief and his council is merely an administrative unit of the state responding to state demands (e.g. in tax collection). The chief is elected and his authority depends on support from all casts/social groups (since independence). He is considered much less powerful on his own than the Jowro in tenure matters under his authority. In serious tenure matters, the chief needs the support of other members of the village council. The council represent a certain cross-section of the socio-ethnic groups in the village. The village chiefs are chosen as bearers of customary values and behaviour, including Fulani and Islamic virtues. The chiefs, although they have formal ties to the state structures, do not belong to the bureaucratic elite or the Malien middle class (see also Le Roy 1985). In some ways they represent a "hybrid" class different from other aristocrats and the Islamic Immam or marabouts. A main personal goal is for them to become re-elected (election every fifth year). Their interests, both ideological and socio-political, make them create new institutions in land use or tenure conflicts. This can be captured by the concept of "local tenure law". They are supposed to rule according to the state law and regulations. But the state laws are often irrelevant for settling local tenure conflicts. It also contradicts customary rules, for example regarding ownership and

management of pastures. They are mostly illiterate, and do not know the official language or the state laws. The written (Islamic) or oral customary law may also be irrelevant for solving particular tenure conflicts. Hence, the law enforcement depends a lot on the individual personalities, his authority, integrity, experience and wisdom. The chiefs manoeuvre between the state laws and support from the state representatives and customary/Islamic law with support from among their own councillors, the local nobility (or the local farmers if convenient). The enforcement of "local law" is not a strictly formalised method for resolution of tenure disputes. Methods are normally adopted to the scope and position of the set of people involved in a conflict. There is no firm equality in eyes of the "local law". A former "slave" may be met with different sanctions than a noble Fulani. Serious conflicts require lengthy discussions and not seldom appeals to Allah/God in order for Him to ask the offended part to forgive. The village chiefs may, depending on their integrity, also manipulate for their own personal benefit, or for the interest of their kins and friends. Sometimes they manipulate for the interest of the whole village community, in other cases for the interest of the state.

Judging from the evolution of rights and rules it is uncertain whether the Jowro have ownership rights to the pastures they control. They will claim so. But this is contested by many local farm communities of different ethnicities, which consider the Jowro to be custodians of common-pool resources. The authority of the Jowro is less contested among the Fulani herders, but they increasingly contest the leasing of land by Jowro. According to state law, the Jowro have no ownership rights to this land. But in practice the state may often support the Jowro, depending on the nature of a local conflict. Local state officials - directly and indirectly - may support the transfer of rangeland to crop land. Today, many of the Jowro act like feudal landlords, detached from community control. There are exceptions, however. Some of the Jowro have resisted crop cultivation on their pastures. While historically the Jowro were controlled by the community through the clan chiefs, they now use this delegated authority as an exclusive private right. The Jowro, in contrast to earlier periods, tend to keep most of the rather significant benefits from the grazing fees (conngi) and for leasing contracts to cropland for themselves and spend it among their close families. The number of leasing contracts and level of payment (in cash or kind) continuously increase. An informal land market has developed in several locations. The Jowro often reside in villages far from the flood-plain pastures they control, and can thus avoid potential sanctions from the local communities. It may also be that the Jowro are unable to withstand the sharp increase in local demands for crop land arising after the drought.

The state and rangeland management

Overall, most tenure conflicts whether within or between village communities are solved at the village level. But the review shows that the state agencies are frequently involved in more serious disputes. But their involvement seldom leads to permanent settlement of conflicts. Problems arise with ambiguous decision making, bribing, re-opening of cases, and lack of means and will to firmly enforce decisions. The village elders and some of the Jowro turn out to be more respected and listened to in tenure matters than the village chiefs.

The local state representative, the Chef d'Arrondissement, represents the most influential but least respected institution regarding management of land and tenure conflicts today. They are supposed to approve the clearing and development of all new land. They are often more concerned about securing personal interests, than in applying regulations fair and square. The administration is considered corrupt, authoritarian and inefficient.

About 50% of the serious tenure cases I analysed have been raised in court. Following new tenure laws in 1986, the court is supposed to take over the regulation of tenure disputes from the administration. But court cases relate more to the personal conflicts, injuries or deaths that violates the penalty law, rather than addressing the underlying tenure conflict which lead to these violations. There are simply no tenure laws (or jurisprudence) that can be applied by the court in most cases. The court is also considered a corrupt institution. Overall, the state institutions have very little legitimacy. People perceive no benefits from their work, and they try to avoid them.

Certain types of conflicts are beyond the capacity of local chiefs to solve, and they frequently call upon the state and military for assistance. This includes conflicts with neighbouring pastoral groups occupying important areas used during the rainy season transhumance to the West and the North (Twareg and Moors). Several incidences of armed raiding and thefts of whole family herds have made the Fulani arm themselves and change transhumance routes.

Historically, each Jowro would set the dates for entering his pastoral territory (leyde) on an individual basis. The French and later the Malien government took this decision away from the Jowro. Dates at which cattle could enter the Delta at various crossings are now decided through a regional Conferance des Bourgoutières. The Jowro participate in this conference, but have little influence. It has been held annually since 1961, following the independence. This means that the state administration is also called upon if rules are violated. The state has also taken over the extracts of fees from each herd owner for passing the river. This undermines responsibility and authority of the wider system of Jowro families (Moorehead 1991:160). These dates are now less adhered to, even by the Jowro themselves. Transhumant herders also tend to respect the order of 'presceance' less and rush their herds faster through the southern parts of the Delta. A larger part of the total herd reaches the central and northern pastures earlier. This crowding has potentially negative effects on range productivity.

There are also other problems with state actions, such as the taxation per head and per animals without re-investing in local infrastructure or social services, the arbitrary fining of individuals or villages due to 'illegal' fuelwood collection or 'over-fishing', and acceptance of bribes in conflicts over land tenure or crop destruction. There is also the use of para-military groups to enforce ambiguous decisions which create conflicts.

Political economy of tenure conflicts

A comparison of two management regimes for village pasturing commons in two neighbouring villages illustate how different interest groups have different reasons

for violating rules to protect the village pasturing commons. In Dilloubé village (4000 people) the regime for management of the village pasturing commons is (temporarily?) destabilised, while in Kakagna village (2000 people) the regime is still fairly stable. The resource base, institutions governing its use, as well as external pressures are fairly similar in the two villages. In Dilloubé all groups have suddenly started to convert the pasturing commons to rice fields. There are several reasons behind, such as ambiguous state interventions, internal family rivalries for economic and political power, an aging village chief tired of fighting. But a main factor is related to new constellations among different set of social groups. During the drought years, some groups among the Fulani (especially the commercants) have gradually increased their cattle wealth and power. Politically they challenge the chief and his allies. Now the cattle-rich Fulani have realised that investments in rice crop production provides higher benefits per hectare for them than the benefits from the grass would add to their livestock production. Hence, they 'free ride'. They invest in labour (Rimaybe), oxen and ploughs. There might be several reasons for this break of customary rules. These village grazing commons provide only a very small share of their overall requirements for grazing. They have access to capital (through sale of livestock and trading). Other Fulani groups 'rushed' after and now cultivate in the same zones. This encouraged the Rimaybé cultivators, who constitute the major socio-ethnic group, to follow. They possess very few animals and derive most of their income from crop cultivation. The chief has on two occasions called the police and had the Rimaybe cultivators arrested. But as long as the Fulani are not willing to revert to customs and leave these zones for pastures, the Rimaybe will continue to cultivate. The Rimaybe recently shifted political party to the one of the Mopti Gouverneur. Hence, he has given them protection. What is developing is a complex political-economic game with an alliance between the cattle-rich and the cattle-poor in 'free-riding'. But their reasons for violating the rules differs between the groups. Land tenure matters have also become part of electoral politics.

Hypothesis behind the enclosures and degradation²⁰

Although people, in the areas I have studied, to a large degree still adhere to customary co-operative rights and rules, increasingly individuals defect or 'free-ride' in search of short-term benefits or in search of means to survive.

I am working on two hypothesis to explain the evolution in tenure regimes. The first provides a transaction cost explanation. The second argues that only a political economy perspective can fully explain local variations in individual strategies and institutional change.

1) A transaction cost hypothesis: The higher the perceived *potential* production benefit per hectare, and the lower perceived transaction costs of policing per hectare *and* per produced unit (milk or grain), other factors remaining constant, the more likely there is a move from relatively open access to more strict control over the resources. '*Potential*' refers to risk and uncertainty being integrated concerns of producers decision making. A more strict regime control represents either a move towards more private control by individual households (or by the Jowro), or a move towards more state

²⁰ This part is still rudimentary and will be developed further in my disertation work.

control under subsidised irrigation schemes. These irrigation schemes are now being privatised. Schematically a simplified illustration of this hypothesis is presented in Figure 1.

This transaction-cost explanation of changes in local property regimes does, however, not adequately explain differences in regime patterns across local communities. I have found a political-economy perspective, that analyses structures, strategies of interest groups and their effect on co-operative rules, to have more or at least additional explanatory power. These societies are stratified and hierarical. Kinship, descent, friendship, loyalty, trust: these are all important institutions. Patron-client relationships still prevail. Property rights to resources are unevenly distributed across social and professional groups, casts and ethnicities.²¹ Housholds have different production strategies based on different types of resources. The dependence on various common-pool resources differs across social groups and communities. Hence, people choose to co-operate or break rules regarding protection of a particular common-pool resoure for different reasons. In various and unpredictable ways the state or external agents of change intervene to change the rules of the local game.

2) A political economy hypothesis: Endogenous institutional changes occur as a result of external shocks (risk/uncertainties), pressures and influence by various agents of change/interest groups. Institutional change are the results of resources becoming increasingly valuable for certain influential groups. The higher the relative dependence a household has in the benefits from a certain resource, the higher the relative interest would be in co-operating for its conservation. Institutions develop to meet risks and uncertainties (related to ecological, socio-economic and political factors.) They also change to meet investment demands by influential and/or wealthy groups. The new institutional arrangements reflect the influences by the state as well as more powerful/wealthy elites with preferential links to state structures. It also reflects new coalitions between wealthy elites, with investment capital for crop expansion, and local farmers and agro-pastoralists who demand more crop land.

This would mean that degradation of rangeland is the complex outcome of failures in the policy and institutional arrangements required to enable an appropriate evolution of existing property regimes under changing circumstances. External pressures erode co-operative institutional rules and organisations which in the past provided assurance mechanisms against free riders or intruders. Today, the property management regimes are not able to exclude people and settle conflicts in an efficient way. "While customary tenure systems were based on the widely accepted principle of the right of the first comer to pre-eminent access and to manage the pastures, provided reciprocal access rights to herders from different parts of the delta and were consistent in their arbitration procedures, the latter day

²¹ In my sample of 229 households, about 13% were considered cattle-rich (above 100 heads) in a wealth ranking exercise, while 65% of the households were characterised as cattle poor (less than 30 heads). A few families possess more than 100 heads of cattle. 36% had no cattle. Regarding crop land, 10% of the households were classified as land-rich (cultivated more than 8 hectares), while 50% were land-poor (less than 1 hectare). 25% cultivated nothing. Less than 5% were without land and livestock, but depended on other sources of income.

system allows access to any citizen of Mali (who never had ownership before) and arbitrates the system inconsistently" (Lane and Moorehead 1993).

But to *what extent* this development is an effect of state actions, market forces, acts of different interest groups, demographic change or drought is difficult to say at this stage in my work (if at all possible). What is obvious is that the drought and change of flood-regimes - as an external shock - suddenly triggered and accelerated many of the processes and possible evolution of new institutional rules.

Figure. 1. Rangeland and crop land tenure in the Inland Niger Delta

Potential production per ha	Land type	Tenure system	Access control
High	Flood-plain fields near village	Inheritable/not transferable	Total
	Flood-plain fields outside village	Leasehold with Jowro/ not transferable	
	Dryland crop fields	Inheritable/not transferable	
	Flood-plain pastures	Inheritable/not transferable	
	Dry land forests	Few restrictions	
Low	Dry land pastures	Few restrictions	Open

Legislation and tenure policies in Mali

State laws are rooted in French colonial laws and Islamic law (shari'a) and draws very little on customary or pre-Islamic institutions. The French colonial laws (from 1932, 1955-56 and 1959 (including the Décret foncier et dominal) legally attributed all land to the state and strengthened the access rights of cultivators to crop land in the Delta (Moorehead 1991, Turner 1992, Gallais 1967, Riddell 1982). Contrary to what happened in many other African states at independence, Mali maintained these colonial laws. Some of the new laws issued, have contradicted the old texts. Few people were really capable of interpreting the property law - until the mid-1980s (Hesseling and Coulibaly 1991). Today, the principal law texts regulating property rights to land and natural resources have been gathered in one main Code Domaniale et Foncier (CDF) from 1986.²² But it does not recognise rights to rangelands. On the contrary, the only regulation to this end says that all pastures, transhumance corridors and animal water points are the properties of the state (ref. Décret 65 PGRM du 21 mai 1973 portant réglementation des pâturages et points d'eau du Gourma).

²² There are separate laws for forest and water resources management (Code Forestier from 1986 and Loi fixant le régime des eaux 1990).

The CDF 1986 maintains from earlier laws that state ownership of land is the general principle of the law. The concept of 'private territory of the state' (Domaine privé de l'Etat (art.37 CDF) in the law is broad and encompasses not only land registered in the name of the state, but also all non-registered land. This includes all land under customary regimes (droit coutumier) and all land which is vacant and without any owner/manager (maître) (art.127 CDF). The state property includes all water resources. This formal ownership of all land by the state reflects influence from the Islamic shari'a (adopted by the French colonial administration). It refers to the head of state representing the Islamic community, and, hence, "the ultimate source for ownership of land " (Park 1993:1). Many state authorities of Islamic West Africa have adopted similar laws.

A usufruct or ownership right can be granted to a user to "develop" ("mettre en valeur") the land (art.39-70 in CDF 1986 sets out the procedures). This is not an ownership title to the land, even if ownership is sometimes claimed by local farmers (Hesseling and Coulibaly 1991). Actual land registration has not occurred on any large scale. But this notion of "mise en valeur" in the law is widely recognised by both government officials and customary leaders to apply to land cleared and taken into use for crop cultivation. The claim to land is subject to continuous work on the land. Land can be held under fallow for a certain period. Land under pastoral use, however, has no protection under state law. Authorisation to clear new land is given by the Chef d'Arrondissement via the village chief (ref. Code Forestier (CF) art. 3).

The contradictions between the customary and pre-Islamic institutions that still endure on the one side, and official property laws on the other leaves room for manipulation by state officials and customary leaders. These contradictions work as a serious constraint to secure rangeland tenure.

The Malian state property law contains no concepts of 'joint usage right' to land or structures to adequately deal with these legal problems. State tenure laws in reality only recognises single ownership (state or private). There is however some recognition of common property rights on village crop land (terroirs villageois) in government declarations. The establishment of state ownership to all land under customary tenure has not been followed-up with any sort of legitimate contracts between the state as the owner - and principal appropriator - and the local appropriators - except under a few of the irrigation schemes in the Delta. There is no concept of 'joint usage rights' - although in administrative and legal practice government officials and lawyers/judges regularly face conflicts related to the wide spectre of joint ownership systems under customary law. There is no jurisprudence developed in writing.²³

For the Malian law-makers - and policy planners - there are several dilemmas to face when assessing alternatives for the formulation of more sustainable, efficient and equitable property regimes. How to balance water rights between upstream and downstream communities? How to ensure a legitimate initial distribution of access

²³ An increasing number of research works have however started to raise these problems (CIPEA 1983, Rochegude 1990, Hesseling and Coulibaly 1991, Coulibaly and Hesseling 1992, Le Bris et al 1991, Kintz 1990 and 1992).

to multiple users (in many cases to the same resources at different periods of the year or in different years)? How to set criteria for access by others at some later time (inheritance, transferability)? How to register and enforce rights; and how to limit individuals in the amount of resource units appropriated (e.g. by locally-enforced regulations, fees, taxes) (see Berge's article in this book).

Procedural law: land tenure reforms as a process

The flexibility and complexity of the customary law and folk law cannot easily be captured and homogenised in statutory (written) state law by using the written Dinaric held up against pre-Islamic customs and other oral agreements. Even if initial agreement could be reached between different parties involved, the codification would rather quickly be outdated. It would create serious conflicts and strain efficiency and risk-sharing arrangements if the government attempted to break up these institutions and allocated (private) titles to geographically limited areas for individuals or smaller groups of households. It would also entail high transaction costs to design, register, up-date, demarcate and enforce regimes based on such principles. Detailed and immediate adjudication, codification and legislation of both range and crop land tenure to the benefit of a wide variety of user groups for specific key range land or crop land resources would probably be premature at this stage of development. As indicated above, constraints to agricultural development are foremost at other levels.²⁴

But while any property law reform will take time, there is an urgent need for conflict resolution structures that can arbitrate continuously over existing tenure and resource use conflicts, particularly between farmers and pastoralists, but also between different pastoral groups.

A possible solution to some of these dilemmas is for the government to elaborate and enforce procedural (rules of procedure) rather than substantive law (rules of right which the courts are called on to apply) (Vedeld 1993a, see also Behnke 1994). In stead of legislatively dictating detailed property rights to pastoral or agricultural resources, the procedural law could specify the institutional arrangement within which the concerned parties could legitimately put forward their claims to a certain resource. This would include the identification and building of administrative or jural institutions which would handle such claims, the principles for judging between opposing claims, as well as procedures for enforcement. Over time, a jurisprudence would develop and competence in the processing governments and organisations be built.

Such institutional arrangements would be embedded in the local culture and folk law. A point of departure would be a better understanding of the existing legal pluralism. Insight into folk law and local law is essential: who are the legitimate decision makers (organisations and institutions); how are decisions taken; what general rules and property rights are applied (for different set of people); how is enforcement carried out; how do new rules and norms for co-operation evolve?

²⁴ The "negotiability of rules and relationships in Africa may be seen as an opportunity rather than an impasse." (Berry 1994:2). It reflects perhaps that land in general is less of a constraint to development than labour and capital, and implies that the scope for dynamic change is maintained.

By the state giving recognition to local structures, land tenure reforms could emerge as a continuous participatory process - not as a top down exercise initiated by the state and embedded in state law and ambiguous often authoritarian practices. The state administration is too weak (administratively, economically and professionally) to carry out efficient law enforcement. Local and customary institutions remain as the only viable alternative. If this is accepted, local organisations must be formed, or strengthened and delegated adequate authority to enforce tenure laws on a regular basis through a co-management model.

This would ensure more legitimate tenure regimes, though not necessarily fair and transparent regimes. Over time, a jurisprudence would develop and competence in the processing organisations be built. Certain general laws or regulations could be developed based on certain principles of customary law and folk law, which would catch local complexities while giving guidance on how to judge between opposing parties.

Identification of these principles of customary law is complicated by the fact that historical rights and duties of owners are ambiguous and politically controversial. Today, there exist multiple and contradictory procedures and channels for settling tenure disputes (Behnke 1992, Behnke and Scoones 1992, Swift 1989, Lane and Moorehead 1993). Hence, tenure reforms would need to be done in dialogue with all concerned parties. New tenure regimes, in order to acquire legitimacy, should perhaps be allowed to evolve through local competition and power struggles within the broader political-economy. Tenure issues will probably become central in the emerging political processes of decentralisation and democratisation, where multi-parties provide new channels for voicing demands at village level. But should land rights be dependant on electoral politics? Recognising that pastoralists are often minority groups with weak representation also in political channels, property rights to pastoral resources might require particular protection. The building of independent "land tenure commissions" at district levels with majority representation from the local (pastoral) communities and/or specialised "land tenure courts", assisted by staff trained both in customary and modern law, could facilitate this process. Pastoral organisations could play a central role in the construction of such institutional structures as an integrated element of new tenure regimes.

A key problem is what role the *state* and their local representatives would play in new regimes. Some would argue that the history of authoritarian and oppressive interventions by the state prescribes a 'minimum' interference (Swift 1993).

Regulation of access rights to the Inland Delta

A management regime for the land resources of the Inland Delta should develop institutional links to communities in control of the surrounding rangeland areas. Regarding rangeland management, the two zones are part of an indivisible resource and production system. Land rights should protect access to critical resources for local groups defined by combinations of residence and kinship criteria as recognised in customary rules. Access should also be protected for outside groups with long established temporary rights to the Delta resources. For foreign or outside investors

and absentee owners of animals, access rights should be made more costly. Their interests are not primarily in long-term management, but more so in local profitmaking and extraction of resources. Access restrictions to the Delta should perhaps be as mild as is feasible with a sustainable management - based on general goals of equity in distribution as well as the need to maintain flexibility. A new regime should also be able to handle evolutions in land use systems, demands from new settlers and new generations. But politically the national government must face the fact that all citizens can no longer have equal access to all resource system in Mali. The idea would not be to block such access completely - since investments properly done in the Delta by outsiders can be to the benefit of the local economy. The idea is to transfer to the local communities the property rights needed to improve the local control and management of the resources more efficient, sustainable and fair.

Official tenure laws should be revised to take account of the distinction between indivisibility of the ecological production system and divisibility of benefits, as is done in the customary institutions. In order to maintain legal persons' access rights to the Delta resource system according to their geographic location (proximity) or membership in a social group, the distinction could be made between 'ownership in common' (the access right is inheritable) and 'joint ownership' (not inheritable). 'Ownership in common' would normally entail a more firm motivation for long-term management. 'Ownership in common' could be attributed to residents of the Delta for resources of critical or high value, such as key flood-plain resources, cattle corridors, wells and village crop land. 'Joint ownership' would be granted to both residents and 'outsiders' to less critical pasture, forest and wild-land resources (Berge et al 1994).²⁵

It would also be important to recognise temporary rights for pastoralists to pass a certain territory, and systems of secondary or tertiary rights (split rights) of access to groups that already enjoy such rights under the customary institutions.

Given the relative indivisibility of the Delta as a resource system - for both livestock, farming and fisheries - for outsiders as well as insiders - strict geographic boundaries around individual resource units should normally be ruled out as a solution. Official recognition of a fee system, based on the existing system, the conngi, should perhaps be maintained as a regulation of access to the Delta for temporary users and outside investors. Key flood-plain pasture resources that local communities want to protect, need to be identified and given more firm protection than what is provided by the lowro today. A *simple* rangeland management plan, developed locally and recognised officially could be one tool to this end. Such plans could be enforced through local governance structures.

²⁵ A distinction can be made between three main forms of ownership-situations: single ownership, ownership in common and joint ownership. The difference between the two latter forms does according to English property law concern what happens to the property on the death of a co-owner. Joint ownership implies that one joint owner's share accrues on his death to the other joint owner, while ownership in common implies that on the death of one co-owner his share passes to his successors.

New property regimes should be based on principles of subsidiarity, meaning that management "tasks should be carried out as near to the level of actual users of resources or beneficiaries as is compatible with efficiency and accountability" (Swift 1993:3). Customary authorities and local government structures should be drawn more firmly into land use planning, rangeland management and resolution of tenure conflicts. Whenever appropriate pastoral organisations should be (legally) recognised by the governments to function as autonomous bodies relating to resource management and economic activities. In many instances customary organisations will form a natural starting point for such actions. But there are limitations to these institutions related to their hierarchical nature, inequalities, and lack of accountability and skills. Whether the Jowro should continue as collector of the grazing fee is a political issue that need to be addressed. In many cases there is need for greater community control with the practices of the Jowro. Building of competence and capacity with some outside assistance might be necessary - both within community-based institutions, in state-administration as well as within the court system.

Several researchers claim that the resources of the Delta are degrading (Moorehead 1991) and that negative effects of resource degradation are not distributed evenly. The Fulani pastoralists might often experience the most severe loss of entitlements (Turner 1992). The future of pastoralism as practiced in the past seems uncertain - unless property rights regimes governing the utilization of these rangelands are strengthened.²⁶

Regarding the proper management of the resource system itself - i.e. the physical and biological resources - the future may not look that gloomy. Recent studies from other dryland areas, including the Machakos studies (Tiffen 1993), give some hope regarding options for addressing resource degradation. Within the Delta there are checks that may counter an accelerated resource degradation, such as the spread of improved technology (ox-ploughing, fertilizers, manure), improved irrigation control, introduction of new crops with higher value in local markets (vegetables), better animal health, regeneration of flood-plain pasture, more efficient use of flood-plain grass (harvesting, storing and sale), and spontaneous attempts to strengthen community-based resource management regimes. These developments are most pronounced around the more important towns where population densities are higher and market access is good, such as around Mopti, Djenne, Tenenkou and Koriensa. The state has also attempted to build pastoral associations for improved management of rangelands outside the Delta and Livestock Co-operatives inside the Delta, with some but limited success so far (Shanmugaratnam et al 1992, Vedeld 1994).

²⁶ Construction of new property regimes must deal with a host of problems such as policy incentives, laws, changes in markets (including labour and credit markets) and incentive structures created by the broader political-economy affecting the socio-economic security of pastoral and agro-pastoral groups. The dispossession of livestock among pastoralists is, for example, closely related to unfavourable development in milk-grain barter price in the local markets. The subsequent impoverishment of pastoralists leads to loss of the socio-political power necessary for maintaining control over access rights to pasture (Turner 1992).

A bit hypothetical perhaps, but with improved property rights regimes, including better price incentives, more rational rangeland and livestock management, access to productive technology in agriculture, better infrastructure and improved access to markets, the productivity of such resource systems as the Delta can probably be improved substantially and sustain population densities at much higher levels than what is found today. But due to failures of existing property regimes, the near future might entail further enclosures of common property rangelands, increased *risk* of land degradation (both on crop land and rangeland), reduced forest and vegetation cover, overfishing, loss of wildlife, wild-land resources and biodiversity. Some of these effects are inevitable consequences of demographic change and development. But many of these adverse effects could be minimised through more effective property rights regimes which could also distribute costs in a more equitable and legitimate manner.

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