

The State and the Commons in the Sahel: Observations on the Niger River Delta in Mali

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The Context

Local resource use conflicts are not primarily a result of land pressure from increased human and livestock populations - which is commonly held in studies of dryland management regimes in the Sahel. This paper attempts to show how changes in structures of political-economic and legal relationships, in combination with the effects of drought, channel new types of interaction between various user groups to local pastoral and agricultural resources. The state sets important premises for these processes, and provokes a dissolution of customary institutions and common property regimes - which in the past governed access to range and crop lands. The outcomes of new patterns of interaction are more open access to rangelands, resource degradation and loss of development opportunities. The reconstitution of viable common property regimes becomes an urgent priority. There are some signs of new institutions evolving, and scattered initiatives by a new government to strengthen local capacities for resource management. The paper is based on preliminary observations under a research project run by this author in the Inner Niger Delta of Mali. The project started in 1992 and is expected completed by 1995. ¹

¹ The paper scratches the surface of a complex issue. Rather than drawing too firm conclusions at this early stage of the research project, the paper raises issues that will be analyzed further. The paper also draws upon findings under a World Bank financed study headed by this author which assesses the performance of pastoral associations for natural resources management in the West African Sahel (Shanmugaratnam et al 1992, Vedeld 1992) - as well as recent studies of the Delta - notably Turner 1992, Moorehead 1991, and CABO 1991.

The Niger Delta of Mali represents significant natural resources for livestock, agriculture, fisheries, and wildlife. It is also a complex and uncertain environment whose productivity crucially depends on rainfall (3-500mm) and annual flood levels of the Bani and Niger Rivers. About 16 000 sq. km would be flooded under "normal" flood levels - leaving several thousand sq. km of flooded pasture for dry-season grazing and land for recession crop cultivation (rice). The Niger Delta plays a vital role in sustaining livestock production and pastoralism in Mali. At present about 1 000 000 cattle and an increasing number of goats and sheep depend on the Delta for dry season pasture.² Over the last few decades it has become clear that the local resources are not being used in an optimal way from the point of view of society. While human populations and cultivated area have not increased rapidly over the last few decades and can only account for a small reduction in the availability of productive rangeland - the long term drought and flood decline have significantly reduced the productivity of local resources.³ This reduction in availability of resources in combination with a multitude of interests at work and the lack of a coordinated approach to resource management may have severe detrimental effects on long-term development potentials.

There are different interest groups involved in the use of the Delta resources, often with distinct ethnic identities and production strategies - ranging from purely pastoral production (Fulani and some Tuareg and Moors), via agro-pastoral (Fulani, Rimaibe) to agricultural (Bambara, Marka, Rimaibe, Sonrai) and agro-fisheries (Boso) production. The pastoral groups encompass various castes, endogamous groups defined by their profession or occupation. One may distinguish between 'outsiders' and 'insiders' based on residence and kinship affiliations. The total population in the central Niger Delta was 290 000 in 1987 (i.e. about 18 persons/sq. km) (CABO 1991:vol. 1).⁴

² In 1987 cattle numbers were estimated at about 800 000 (density /sq. km 23) and small ruminants at 764 000 (density/sq. km 23) - which represented close to a 40% reduction in cattle numbers and a 66% increase in small ruminants compared to pre-drought aerial surveys (1981). According to staff of the local livestock service some 60% of the cattle are herded by pastoralists residing in the Delta (but mostly not owned by them). The rest is herded by pastoralists with their home base in regions adjacent to the Delta i.e. to the east (Seno Mango, Seno Bankass, Plateau) and to the west (Mema). To lesser extent cattle also come from the North (Gourma). These herds are only allowed to enter the interior Delta during the dry season.

³ According to a crude estimate the production value in monetary terms from livestock, fish and agriculture dropped 60% from 1975 to 1985 in the Delta (IRAM 1991).

⁴ Due to migration and internal redistribution of people during the drought, as well as other measurement problems, the population figures are uncertain.

Historically there evolved relatively effective regimes for management of the natural resources in the Delta. Local institutions under the control and dominance of pastoral Fulani groups regulated access to land as well as the relationship between the pastoral economy and agricultural and fishing communities. 'Outsiders' had to pay a tribute for access to the local resources. The complexity and sophistication of these management systems have intrigued many scholars - following the work by Gallais (1967).

Today, the common property regimes seem to be disintegrating rapidly. Both state and customary laws and regulations seem to be losing legitimacy among local resource users. There is "no longer a widely accepted set of rules governing access" (Turner 1992:408). There are increasing conflicts - sometimes violent - over control and access to pasture, crop land and fish resources.⁵ Significant overuse and mismanagement increase degradation of natural resources. Resource use conflicts are particularly severe between pastoralism and agriculture.⁶ While at the same time important potentials for resolving such conflicts lie in improved management of actions that will facilitate integration of the crops- and livestock production systems.

There seems to be a progressive destruction of local producers ability to manage access to resources they customarily controlled. "A synergy between drought conditions and the rural development policies of the post-colonial state is creating a situation of 'structural chaos' in which natural resources of the zone are being mismanaged and the rural poor marginalised" (Moorehead 1991:i). State policies and practices seem to have facilitated an opening up of former controlled-access property regimes to new user groups with preferential links to various structures of the post-colonial state. These groups can be local elites or 'outsiders' like absentee herd owners or agricultural investors - often

⁵ Although fish is a central resource in the local economy, it will not be dealt with by this paper.

⁶ One could however, also turn this perspective and ask; why are there not more conflicts between different social and ethnic groups - if there really is a break down of generally accepted rules governing access to resources? What is the 'cement' of the local communities? What social and economic relationships across groups, clans and ethnicities counter local disputes and social tensions? Such relationships could include reciprocal or cooperative exchange of goods and services, economic inter-dependencies, inter-marriages and kinship ties, or friendships outside own clan with neighbours or persons from same age group. How do beliefs, religion (Islam), and religious leaders promote 'peace'? How does the cast system work; and what role does the nobility play? Is 'peace' maintained through power-fear? Fear of repercussions from the state administration, police and military or from the local elites? Or is it maintained through more 'legitimate' and 'democratic' mechanisms?

have shorter term interests in management of natural resources and tend to "...'free ride' upon local management systems" (Moorehead 1991:i).

The sustainability of livestock and pastoral production in this region, depends critically on maintaining transhumant discipline and opportunities for mobility. ⁷ This hinges on political factors as well as economic and cultural factors within local communities, as will be shown. Changes in people's "control and allocation of surplus, regional integration into world beef markets, and increased usufruct and subsistence insecurity, have produced a quite different socioeconomic environment from before" (Turner 1992:411).

Such processes contribute to fundamental changes in property relations between various user groups to the Delta resources. For the Fulani pastoralists the situation has rapidly changed from relative wealth and power over land, cattle and people (former Rimaibe slaves) to increasing poverty and daily struggle for survival. Many of the Fulani pastoralists find themselves dispossessed of animals and reduced to being the poor herders of other people's cattle (Turner 1992). There are still wealthy individual Fulani pastoralists and Fulani leaders, who through collection of grazing fees, sale of land and other contributions in cash or kind are able to accumulate substantial capital and cattle, and maintain control over land resources. But in many areas the Fulani have lost political and economic power and their customary institutions are, seemingly, not able to maintain former positions in resource management.

Frequently Fulani pastoralists choose to diversify into agricultural ⁸ or non-land based income generation activities. Migration has become a common survival strategy. Overall, this diversification implies a reduction in the household labour available for conducting transhumance. Moreover, the impoverishment of the Fulani pastoralists and the bleak

⁷ Livestock use the dry season Delta rangelands 8 months per year (October to June) and rainy season pastures outside for the 4 remaining months of the year. The cattle tend to put on most weight during the rainy season, while within the Delta they normally just keep their weight (Pierre Hiernaux, CIPEA, personal message 1992).

⁸ Traditions are changing and even in areas of the Delta where the Fulani men and women would never carry out agricultural tasks - they now do so. However, in some areas like parts of the central Delta (Jallube) - where traditional structures seem to remain stronger and the Fulani still can afford to hire labour - the Rimaibe continue to carry out the agricultural work. Payment for such work would depend on the social relation between the Rimaibe and the Fulani family in question.

prospects of rebuilding herds and wealth have “very much eroded Fulbe pride in their cattle and their sense of what being a Pullo means”. This implies an erosion of “the major cultural bulwarks supporting transhumance discipline”. “We’re tired” is a phrase often used by the pastoral Fulani of the Delta (Turner 1992:410).

Loss of Development Opportunities

A break down of transhumance patterns among Fulani pastoralists and further erosion of local management regimes - without establishing new regulatory mechanisms - would not only have severe negative effects on the ecological sustainability of the Delta, but it would also further threaten political and economic stability in these regions.

These development trends have raised concerns by local people, researchers and policy makers to analyze further “what goes on out there” and to assess approaches for building new and more effective regimes for management of resources and development.

If it is accepted that the livestock sector “is by far the most important contributor to regional monetary income” (CABO vol.4 1991: 133), then regional development depends on; better regimes for management of available rangelands; better integration of crop-livestock activities; improved animal husbandry and land management; as well as improved marketing of livestock products - particularly in drought situations when massive off-takes are required.

Although crop cultivation is the most important source of energy in the local diet, and hence in securing subsistence, it hardly contributes to generation of income at household level, according to CABO. In terms of rentability (calculations based on prevailing economic conditions and price ratio between inputs and outputs) “rice is the most unfavourable” crop. The performance of millet, sorghum and fonio is a little better.

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 assessments of

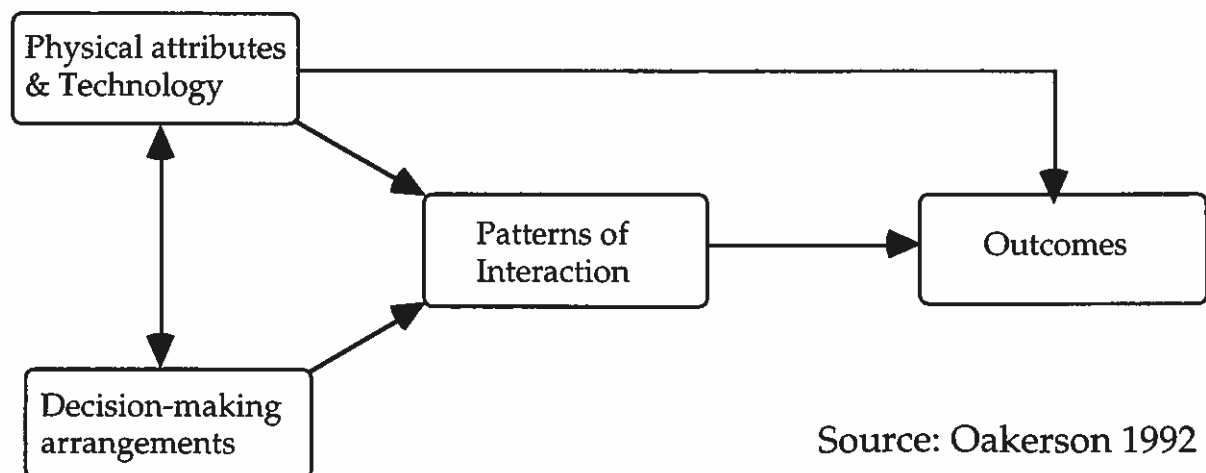
inter-sectoral, tenurial and environmental conflicts - development opportunities are easily lost.

There are some signs of a growing awareness of the importance and development potentials of drylands and pastoralism. Pastoralists are significant as economic actors in both the formal and informal sectors. They contribute substantially to the national economy, particularly through the production of milk, meat, and other domestic products, manure for agriculture, animal traction - and to import revenues through exports. Livestock represents about 30% of Mali's export revenue - of which a major share is raised within production systems depending on the Delta's pastures. There is also a growing awareness of the social costs involved in development strategies that exclude or disregard pastoralists. Moreover, it is being recognized that political stabilization and reconstruction of the drought ridden Malian economy cannot be accomplished without a genuine participation of the pastoral producers. As a reflection of this, the new government, donor agencies and NGO's working in Mali seem to be reviewing past positions on pastoralism.

A Framework for Research

In this paper I use a framework for analyzing the management of the commons developed by Oakerson (1992) as a diagnostic tool to reveal some critical issues and hypothesis which will be further studied under the research project.

Figure 1: A Framework for Analyzing the Commons



Source: Oakerson 1992

Some of the main questions being posed in this paper are: What is happening to the commons and to the different communities of users of the Delta resources? To what degree are the rangeland resources being reduced and degraded - by acts of man and nature respectively? Is man induced degradation leading to falling outcomes from livestock production? Are pastoralists investing more and obtaining less from the common rangelands? How are various social groups affected? Answers to these questions require an examination of the patterns of interaction among resource users and between these users and the state - which in law, policy and practice today lay important premises for changes in property relations. It furthermore, requires an assessment of how the physical and technical constraints of the Delta relate to the evolution of decision-making arrangements which govern the patterns of interaction and the use of the common range- and crop lands. The outcomes i.e. consequences for man and the environment - "disclose the effect of a difficulty that is manifested behaviorally in patterns of interaction. The source of the difficulty, however, lies in a lack of congruence between the first two sets of attributes: a mismatch between the technical and physical nature of a commons and the decision-making arrangements used to govern its use" (Oakerson 1992:55). This leads into a final concern: What is required for new property regimes to evolve - which can better promote sustainable land management and equitable distribution of costs and benefits - through interactions between the state, local institutions and individuals? Or in Oakerson's words; "how to modify patterns of interaction by adjusting decision-making arrangements to better fit the particular nature of the commons"? This implies changing the structure of property rights to the resources - when property is interpreted as a social relation (not as an object).

The social units of the research project are first of all the customary management institutions, which are made up of sets of households based on lineage's. Particular attention will be accorded to the Fulani institutions, which in the past controlled customary property regimes. Focus will be on the growth and downfall of Fulani institutions relative to other user groups and actors - including the state - with interests in common rangelands of the Delta. A site for the village and household level studies will be chosen in the central Delta - which will allow for comparisons with findings of Turner (1992) to the west and Moorehead (1991) to the north in the Delta.

The research builds on property rights theory developed by authors such as Ostrom (1990), Oakerson (1992), and Bromley (1991 and 1992) - and adopted to the Malian context by Moorehead (1991), Thomson (1993) - and to lesser degree by Turner (1992). Hopefully, the research will be of some use for the government, donors as well as for spokespersons of various user groups to the wide specter of natural resources of the Delta.

Common Property Defined

For the purpose of this paper a property right is defined as "a claim to a benefit stream that some higher body - usually the state will agree to protect..." (Bromley 1992:2). It is a **legitimate** rule of appropriation.

'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 1991:3). There are four general types of property regimes; 1) state property regimes; 2) private property regimes; 3) common property regimes; and 4) non-property regimes or 'open access' (Swallow and Bromley 1991).

Most of the natural resources of the Niger Delta would by most people be categorized as 'common resources'. This will 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). Under a 'common property regime' there will be more than one decision maker with a legitimate right to the benefits arising from the use of these resources. This is distinct from state property and private property.

Natural resources management is here defined as all aspects of rangeland and water management. This include the operation of water and land rights, resource use conflict resolution, range patrolling, regulation of transhumance, adjustment of stocking rates, herd splitting and

changes in species composition, regeneration of pasture, fire control, tree protection - as well as management of crop-livestock integration (labour-animals, use of manure, stall feeding, fodder harvesting and production).

Physical and Technical Attributes: Drought Induced Scarcity

The present conflicts over land and resources is to a large degree rooted in the particular ecology of the Delta and changes in rainfall and flooding levels over the last few years. The flood is the leading ecological determinant regarding primary production in the Delta - both in relation to agriculture, natural vegetation (pasture) and fish production (Hiernaux and Diarra 1986).⁹ In a normal flood year the Delta zone would be submerged over an area of 16 000 sq. km, while in years of low-flood (frequently experienced during the 1980s) only about 50% of this area would be flooded i.e. about 8 000 sq. km (CABO 1991, vol.4).¹⁰ At the same time the maximum flood level comes earlier and the fall in level is faster than before. The flood level and duration define the surface possible to exploit for agriculture and for livestock, and hence variations in conditions for the potential land use conflicts between these two productions.

Different factors have dramatically reduced the availability of fodder in the dry season; drought and mortality of the perennial grasses (Hiernaux and Diarra 1986); transformation of the best pasture into crop land; and restrictions on transhumance due to political unrest in the Mema region (see below).

A critical dry season resource for livestock and pastoralism is the flooded pastures (perennial grasses) - particularly the bourgou deep

⁹ In Mopti the mean annual rainfall during the period 1956-1988 was 503 mm/yr. (54,7 days of rainfall), while in the period 1979-1988 only 418 mm/yr. fell (40,5 days of rainfall) (IRAM 1991). Rainfall in the region itself makes only a minor contribution to the flood levels. But local rainfall is correlated to rainfall conditions upstream in the Bani and Niger Rivers' catchments and, hence, to flood levels in the Delta (CABO 1991, vol.4). Some scholars also claim that the upstream dams decrease and delays the flood levels downstream (Turner 1992). This concerns both the Sélingué dam and reservoir and the older Markala dam which supplies water to the upstream irrigation schemes at Office du Niger .

¹⁰ Normal flood is defined to be about 6,6 m and low-flood about 5,1 m at Mopti. At high flood levels (7,0 m) an area of 19 000 sq. km would be flooded.

water pastures (*Echinochloa stagina*). Under normal flood these pastures would constitute 6 000 - 7 000 sq. km in the Inner Delta. Under present low-flood levels these perennial grasses make up only about 2 500 sq. km ; i.e. a dramatic drop to only 1/3 of the normal area (IRAM 1991).¹¹

Decision-Making Rules: Evolution of Common Property Regimes

a) The Dina (1818-1862)

Human occupation in the Delta has a long history. Rice cultivation was being carried out already in 1500 B.C. The first Fulani to establish a permanent presence were the Ardobe in the 14 th century - coming from the east. The most important resource management regime of the Delta today rests upon the status accorded to the founding lineage's of the Fulani ('noble' Fulani). The major patterns of the existing systems were established under the theocratic state of Sheku Amadou - the Dina (1818-1862). But elements of earlier and later systems (e.g. French colonial system from 1893) overlap to produce a complex layer of rules and practices. Many of the farm communities whose descendants arrived before the Fulani, do for example today claim the 'right of first occupancy' to land.

In most communities of the Delta it is possible to distinguish between 'insiders' and 'outsiders' and within village communities between founding lineages, lineages that arrived later and married into the founding lineage, and more recent arrivers. 'Outsiders' are for example the transhumant pastoralists using the Delta only during the dry season, and absentee owners of livestock and crop land, traders and government officials.

¹¹ Bourgou is an aquatic grass which depends on the annual flooding of the Niger River and grows in 1.5 m to 3 m of water (UNSO 1990). Bourgou is a particularly productive pasture and production may reach 15-30 tons of dry matter per hectare - compared to 0.5-3 tons in other parts of the Sahel. The bourgou is economically and ecologically important as natural pasture but is increasingly also being harvested and sold as fodder. Bourgou also provides protective shields against rice-eating fish; it works as a breeding and feeding ground for fish; its seeds are used for food; the stalks provide a sugary syrup; and finally the bourgoutières (large plains) are important niches for bird and wildlife (UNSO 1990).

In the 19th century Sheku Amadou - with the help of local agricultural groups and slaves - were able to stand up to outside military forces and acquire control over the entire Delta from Maasina. His motivation for doing so was mainly religious. He established a highly centralized state-like administration at Hamdallahi (near Mopti/Sevare). His army was financed by taxes and agricultural surplus from the work of slaves. In order to facilitate introduction of Islam and ensure military protection he introduced a policy of forced sedentarization. The Delta was divided into about 30 leyde (rangeland or grazing units) headed by one or several Jowros. The Jowros and Fulani chiefs were given the right to control the pastures within these leyde as well as implicit rights to allocate land to their slaves (Rimaibe) - who were settled in nearby villages (Gallais 1967, Turner 1992). Grazing, fishing and farming were codified and regulated within and between the leyde to the interest of the Fulani. The Jowros in consultation with a council of elders regulated access to land as well as the relationship between the pastoral economy and the agricultural and fisheries communities. The timing and sequence to follow during transhumance were organised. Each corporate clan herd had to follow certain cattle paths and rest only at defined points when grazing in the Delta. The controlled access common property regimes would be for natural resources such as perennial flooded pastures and dryland pastures, village fields, irrigated fields, crop residues, fishery resources, wells, trees, and wild grain. Around certain villages a particular grazing common for milk cows were codified (Harima). Open-access regimes would be for dryland pasture in the outskirts of Delta, trees and browse, wild grain, and fruits.

The main rule governing access was that insiders had right of access to resources for free (within their leydi), while outsiders had to pay a tribute to the Jowros. Income from grazing fees were mostly used locally (for visitors, marriages, other ceremonies, communal grain stores, or shared between the founding lineage's). Within the Fulani communities membership or linkage to a certain social group or lineage conferred the right to use pasture within the territory of that group (e.g. within the leydi or the Harima). Although it was not an egalitarian system, it represented a fairly complex common property regime for the organisation of resource use (Gallais 1967, Turner 1992, Moorehead 1991, Swift 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 the right to manage. The central administration at Hamdallahi guaranteed the appropriators a legitimate claim to the stream of benefits arising from the use of the resources.

b) The Colonial Administration and Increased Market Integration (1898-1960)

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" (Moorehead 1991:167).¹² By maintaining customary chiefs as local administrative rulers (Chef Cantonnements), and obliging them to provide forced labour and army recruits, the colonial administration discredited their authority and legitimacy as customary leaders. Two important processes further eroded the Dina system. Firstly, the colonial administration facilitated the break between the Rimaibe rice cultivators and their Fulani overlords (see later), and, secondly, the administration allowed seasonal outsiders - with only secondary rights - access to the local resources. 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).

¹² The Dina system was temporarily disrupted during an invasion of toucouleurs from the East. A period of war and unrest followed. The Dina was re-established with the colonial regime.

Patterns of Interaction: The State and Locality

a) Post-independence State Policy and Practice (1960-1992)

Regarding state influence on the locality, my main concern here is with the efficiency and capacity of the local administration and technical services in provision of services, enforcement of rights and resolution of tenure conflicts and land use disputes. Other aspects of the role of the state are treated later.

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 Malian state through nationalization of land and pastoral resources and establishment of parallel structures further opened the access to the Delta resources for outsiders. These groups - being they merchants or government officials - have less interest in long-term management. The present resource management regime may therefore not be compatible with the physical attributes of the resources (see below).

In general, the administration and technical services of the Delta have very low financial and technical support from regional and national levels.¹³ The agricultural and forestry services have often no budgets, no transport, no offices - except if there is an NGO or donor project subsidizing activities. This also holds for the education, health, and infrastructure services. The livestock service is slightly better off due to a World Bank project operating in the region (Operation Développement d'Élevage Région de Mopti - ODEM). There has also been substantial investments in irrigation development both upstream (Office du Niger) and in the Delta (around Tenenkou and Mopti).¹⁴

Local staff often lacks skills and competence to understand the complexity of local production systems - particularly social and environmental aspects. They have low salaries, no say regarding where they are posted, they originate from other areas of Mali, they remain only

¹³ The local government i.e. locally elected representatives - exist only on paper. None of the representatives I met had ever participated in a meeting of the Conseil Locale de Développement. This may change with local elections coming up in 1994.

¹⁴ There has also been government investments in the fisheries (Moorehead 1991).

for shorter periods and they don't know the local language. They are not trained to encourage local participation or engage in serious dialogues about development priorities with local people. They often regard rural producers as ignorant, and feel alien from the local culture. In general, they are not equipped for carrying out a decent job. The work morale is very low. Systems for inter-sectoral planning and coordination are weak at all levels.

Bad governance by the state is reflected in opinions by local people. I interviewed village chiefs and elders in twenty villages. In none of these did people express any perceived benefits from the work of the state administration or technical services. The only exception was for some appreciation of the vaccination campaign by the livestock service. On the contrary, they see the state as a "trouble maker" whose main occupation is to collect taxes, police the use of resources and arbitrarily fine people when 'misuse' is revealed. Local officials are seen as reminiscence of earlier military traditions of the colonial and post-colonial regimes. Local administrators (Chef d'Arrondissement/Commandant de Cercle) are still accompanied by military guards when appearing in villages meetings. The forest service is armed when carrying out 'extension' advice. One local leader insisted that "it was more calm in the Delta before" - i.e. under the colonial period. In general, the administration - as well as the technical services - are part of an authoritarian and suppressive bureaucratic structure and tradition.

Now, with what efficiency can such institutions assist in local land use planning and mediate in resource conflicts? What are the government working rules? According to one village council; support in local disputes by the administration is won by "the one who butters the cake". The administration and technical services sometimes seem to follow a logic of operation more in line with customary institutions rather than the plan of organisation expected from a bureaucratic institution built on French models. This may, for example, imply that the officials readily accepts gifts - or bribes which according to most standards would be considered as plain corruption. And their supervisors will demand shares of local benefits. Local revenues are partly used to 'subsidize' government interventions. But relationships for mutual enrichment commonly develop between local officials and the local elites - whether they are Jowros, village chiefs or other local leaders. Even if the state in law and policy does not recognize the Jowro institution, the local offi-

cial in practice acknowledge their authority - when this is convenient. The relation with the village chief is slightly different, in that he is the state representative at local level (e.g. tax collector). This role obviously erodes his credibility as customary leader.

Many state interventions have severe negative effects on local institutions and development initiatives - and on resource management. The present practice is, for example, likely to encourage an uncontrolled expansion of crop land at the expense of livestock production and pastoralism. It is important here that a crop field to a farmer, in general, will be more valuable than a similar pasture field to a pastoralist. Hence, a farmer is probably willing to put more effort and resources into protecting his land (for example by contributing 'gifts' to obtain the support of local administrators or local leaders) or into expanding his land.

The interaction with the legal system in disputes over tenure is of increasing importance. Until 1986 disputes over land tenure were meant to be solved by the administration, but are now - in principle - to be referred to the regional courts (Tenenkou and Mopti). Conflicts over customary tenure rights to land between farmers and pastoralists and Jowros now constitute more than 50% of all court cases in the Mopti regional court, according to a local lawyer. Local judges complain that they find these cases extremely problematic - since few or no written documentation on customary rules and codes exist. They do not even have some general principles or guidelines of how to relate to these systems. Their own field knowledge is very rudimentary. They are therefore left with oral presentations of claims from the different parties, which are mostly contradictory. Witnesses may often use different periods of time as a reference - reflecting the historic layers of customary access rules - which have changed in accordance with changes in local power relations. Witnesses will also respond to family or clan loyalties - rather than to the Malian court by telling the 'truth'. This leaves the judges with an impossible task. It also leaves room for manipulation. During the Moussa Traoré regime the legal system was under tight political pressure and considered quite corrupt. This may, however, improve with the new regime. ¹⁵

¹⁵ The interaction with the legal system will be a priority in the next phase of the fieldwork.

b) Conversion of Rangeland to Crop Land

The large scale disappearance of many bourgoutières (plains of bourgou) is mainly a consequence of the drought and changes in flood regimes. But increasingly bourgoutières are cleared for rice and millet fields both by farmers and former pastoralists. This also happens with less productive upland pastures. This raises a particular problem for livestock production which depends on the Delta's grazing resources 7-8 months of the year.

Different surveys of the Maasina flood plain (western Delta) show that the growth in agricultural area up to the early or mid 1970s only slightly exceeds human population growth rates (Turner 1992). And human population increase has been well below the average for the whole country; 0,9% over the period 1954-1974 (in Turner 1992). The 1987 population census indicates an annual growth of less than 1% for Mopti Region as a whole. The long-term growth still represent increased pressure on local resources in certain areas (Cissé 1985b and 1991). Moreover, technology changes - for example the introduction of ploughs - has in some areas made each family able to cultivate more land. But the problem during the 1980s regarding land management does not primarily seem to be an expansion of land under cultivation. In fact, the cultivated area seems to have dropped substantially during the 1980s in many areas - which is contrary to what is normally stated by local officials (Turner 1992, Moorehead 1991). Turner (1992) found that cultivated area covered 5,2% of the total Diaka flood plain (western Delta) - while cultivated area might have covered as much as 9,2 % in 1970 .¹⁶

The main resource use conflict today arise due to massive shifts in the sites of the agricultural fields. Farmers have abandoned their old millet and rice fields and cleared land in the deeper lying areas of the Delta - which receive flood-water even at low-flood levels. These areas often coincide with the best remaining perennial pastures. These land use

¹⁶ Turner (1992) indicates that the cultivated area in 1980s might constitute only 35% of that in 1975 for the western part of the Delta (Diaka Flood plain). Reduction in cultivated areas is also reported in the northern Delta (Moorehead 1991). It is likely, however, that the situation may be different in the southern and south-eastern parts of the Delta - where the agricultural population density is higher. In these areas there are also more government and NGO projects promoting crop expansion.

conflicts have important implications for local tenure relationships and disputes.

c) Increasing Land Tenure Insecurity on Rangeland and Crop Land

Improving land tenure security is a critical element in any approach to strengthening property regimes for pastoral and agricultural development in the Delta. Land is still mostly allocated according to customary rules; the common rangelands are mainly under the Jowros' control - while the village chiefs are responsible for distribution of village agricultural fields. But the changes in land use and land pressures - in combination with weak protection of customary tenure by state in law and enforcement - do increase the tenure insecurity both for common rangelands and for individual usufruct rights over crop land. This insecurity is partly reflected in expropriation of land - which the state can do without compensation. For example, more than 40 000 hectares of high quality range and crop land under customary tenure, were confiscated and placed under state ownership in the Mopti Rice Development Schemes. Later, the highly subsidized rice perimeters were leased to individual owners around Mopti - often outsiders with no original rights to the land. These rice schemes often block traditional cattle paths. Tenure insecurity is also reflected in the opening up of the Delta resources to outside investors in livestock (and in the fisheries, see Moorehead 1991). But there are also other tenurial changes going on.

Some preliminary field observations confirm findings by other studies; in the search for new fields, many agricultural families internal to the Delta are prepared to move temporarily or settle permanently in new settlements quite far from their original home villages. New crop land in the deeper lying areas is mostly acquired from the Jowro's. While the Jowros historically were custodians of common rangelands for the common good of the Fulani, they now in many cases act as if the land was their private property. They have started selling the best pasture land. To varying degree the profit from sales are used for self-enrichment. To lesser extent it is used for fulfilling certain social obligations (gifts, ceremonies) and for maintaining their positions as Jowros. Depending on the social relationship with the Jowro, a person can get

land for free, lease or purchase. According to local sources, the price of land depends on social relationships - but in certain areas - for example in the central Delta (e.g. Kootiya) - informal land markets seem to have developed. Land prices depend on local demand - and prices have steadily increased.

This selling or transfer of land use rights by the Jowros poses problems both for farmers and pastoralists. For the pastoralists, the selling of pasture land to farmers means they are deprived of customary common property rights and loose access to vital grazing land. The farmers are also faced with new tenure problems. Previously most farmers would have a rather secure tenure right to land in the immediate vicinity of the village - guaranteed by the village chief who is also the local state representative. The land security of the new fields more distant from the villages is for many farmers at the mercy of the Jowros concerned. While several Jowros claim they can take the land back at any time, the farmers would insist that they cannot be thrown off the land. It probably depends a lot on the local position and powers of the Jowro in question.¹⁷ But it may also depend on decisions taken by the local administration in tenure conflicts. The clearing of pasture for crop production represents, according to Islamic and national tenure laws, a way of developing the land ('mise en valeur'). This provides a certain protection under the national tenure law - and the right should in principle warrant some protection by the local administration. But administrative decisions to this end are often ad hoc, ambiguous and unpredictable. There has, for example, been "no serious efforts by the state to register community resources as the property of rural producers" (Moorehead 1991:236). These processes will be studied further under the research project.

¹⁷ In the southern and eastern parts of the Delta, where there is a high relative population of farmers, the Jowros seem to have lost most of their powers. Hence, farmers often don't bother to ask for permission to start cultivating. But several Jowros in western, central and northern parts of the Delta seem to have maintained a stronger position and more authority in land management matters.

d) Rangeland Tenure and Access Rules: Growth of Free Riders

Customary rules still decided main patterns of rangeland use both inside and outside of the Delta, which may be an indication of the relative robustness of the system. But important changes in transhumance discipline do take place, partly provoked by post-colonial state actions. Some of these changes seem to have been accentuated after the fall of the Moussa Traoré regime in April 1991. Local level respect for any rules - state or customary - fell with the regime - at least temporarily. The dates for crossing the Bani and Niger Rivers are not respected as before, and some herders - including the Jowros themselves - cross earlier than the agreed dates. Some even cross at points of the rivers which are not recognized. There are an increasing number of herders who do not respect the customary cattle paths and resting points within the Delta - and accelerate with their herds in order to reach to the better pastures in the northern parts of the Delta faster than others (Moorehead 1992). This 'rushing' results in concentration and crowding of animals in certain areas - often in areas where demand for crop land is high. Another problem is the increase in goat and sheep herding - often by outsiders obtaining access to the Delta. The number of animals resting in the Delta during the rainy season is also increasing.

Outcomes: Differentiation, Resource Use Conflicts and Degradation

Overall, conflicts over resources between outsiders and insiders and between crop cultivation and pastoralism - as well as in-between the pastoralists - have become more and more pronounced. Several processes enhance socio-economic differentiation and degradation of natural resources.

a) Changes in Structures of Common Property Regimes

On the one hand, it seems that the better commons (and state land) i.e. the best crop land near villages and rangelands which have been

converted to crop land - are often being 'privatized' and/or colonized by local elites and outside investors - but also by small farmers. There is a scramble for land - partly due to local demands - partly due to outsiders being granted access by state intervention. But land tenure insecurity remains. On the other hand, the regimes governing the best common rangelands in the Delta - rather than moving towards tighter control - are being made more open for outsiders (the absentee herd owners) - through the support of the state. The Jowros' management of grazing for the common good of the 'insiders' have weakened. This has spurred local initiatives for establishing range patrolling groups. Other responses to pasture-scarcity are harvesting and regeneration of bourgou - which do represent a move towards tighter control on benefit streams. The more marginal and less productive state owned rangelands and common property lands outside the Delta seem to be made more accessible and open for an increasing number of users, for example through provisions of public water points. Many resource-poor pastoral households - particularly among the transhumant visitors - are being pushed into the more marginal areas (or out of livestock production). They are not able to develop new management regimes for the resources upon which their livelihood depends. They become more vulnerable to climatic variability and tend to provoke degradation and destruction of farmers fields. In these areas state sponsored efforts to establish pastoral associations for improved resources management have been initiated (see below).

b) Absentee Herd Ownership

One effect of the drought and changes in the grazing property systems, is the dramatic dispossession of livestock among the Fulani and the growth in absentee herd ownership. As much as 86% of the livestock herded by one group of 18 Fulani families were owned by others. Some 18% of these were entrusted by other Fulani - meaning that 32% of all surveyed cattle were Fulani owned. The Rimaibe owned 32%, while the remaining 36% were mostly owned by government officials, merchants and marabouts. It is particularly government officials and merchants who have accumulated cattle over the last two decades¹⁸

¹⁸ While cattle herders have been dispossessed of wealth, sheep herders have been able to accumulate wealth during the drought. Sheep are considered the most profitable livestock investment in the Maasina. Since rice cultivation has also been on the decline, wealth

(Turner 1992). This enhance problems of land management - since an absentee owner has less interest in long term management. A Fulani - who mainly herds other people's animals - may care less about following the customary rules. He may also be less careful about his animals entering and causing destruction in farmers fields. Hence, the large-scale occurrence of absentee herd ownership you find in the Delta is not conducive to natural resources management, reconstitution of viable common property regimes, and livestock development (see also Shanmugaratnam et al 1992).

c) Overgrazing and Resources Degradation

Although the cattle population is still below early peaks in the late 1960s, the density of livestock in relation to available dry season pasture is probably much higher. The number of small ruminants has increased substantially. The Inland Delta has the highest density of animals in the Region. But according to ecological studies, grazing has had little negative impacts on productivity of perennial pasture in the Delta during the dry season (Hiernaux and Diarra 1986, CABO 1991: vol. 2). Studies by Turner of grazing pressure on annual rainy season pastures on the western border outside the flood plain - "does not support the general notion of a strong negative impact of Sahelian transhumance systems on the quality and quantity of pasture production on sandy substrate. In fact, the net effects of historic rainy-season cattle actions on overall production could best be characterized as subtle or nonexistent." (Turner 1992:396)¹⁹. Rainfall was the dominant factor regarding vegetative production. One can therefore hypothesize that these Sahelian rangelands are more resilient to customary opportunistic grazing systems than often assumed and that there is no "overgrazing" in the Delta leading to "desertification" (see also Behnke and Scoones 1992, Vedeld 1992). An increasing problem is the degradation of bush and trees vegetation by goats and sheep. Forage availability during the dry season is, however, a critical limitation on

accumulation in Maasina has mainly been from migrant remittance (apart from sheep herding) (Turner 1992).

¹⁹ There has not been undertaken a systematic evaluation of the extent of rangeland degradation in the Delta and the surrounding areas. There are earlier studies and reports that indicate that "overgrazing" take place in more localized events on susceptible soils in the rainfed pastures (CABO 1990: vol. 2).

livestock numbers and production levels. A new, serious drought would probably wipe out a large number of these animals, and have severe social and economic consequences. One should in this regard be aware that the dry season fodder in the Delta can at best maintain the animals weight. It is during rainy season on the rangelands outside the Delta - when rainfall is above average and pastures are good - that the animals put on weight.

Regarding crop cultivation, there are significant problems of soil fertility depletion. Manure is rarely used. Cow dung is used for firewood. Fertilizers are used only in irrigation schemes. There have been severe drops in yields and production from the irrigation schemes due to low floods (water does not enter), bad irrigation management and fertility depletion. Overfishing is another serious resource management problem - enhanced by outsiders being granted access to the local resources (Moorehead 1991). As fish production falls, the Boso fishermen become more dependent on crop and livestock production. Hence, depletion of one resources has negative spill over effects on other resources.

d) Crop Harvest Destruction

The destruction of fields before harvesting is a major conflict issue, and a cause of great concern both among farmers and pastoralists. Incidence of crop destruction has become more frequent due to several factors; more animals compared to available pasture, increasingly scattered fields, greater number of animals remaining in the Delta during rainy season or coming back earlier, and less labour available for herding animals and for guarding fields. Fields may also be devastated deliberately - simply to feed the animals or to defend customary rights. Crop destruction poses significant local tensions. Most conflicts are solved locally - between the parties involved. Often they call upon local elders, the village chief or the Jowro to intervene. The administration is also appealed to if a herder is not willing to pay. But the parties involved have to bear costs of the official commission which is supposed to estimate the damage and decide on the guilt issue. There are also 'gifts' to be paid, which make people hesitant to involve the administration.

e) Socio-Political Conflicts

The Malien state cannot afford a socio-political conflict with the Fulani of the Delta similar to the on-going confrontations with the Tuareg and Moors in the Gourma and Mema regions north and west of the Delta. There are, for example, still 40 000 Tuareg refugees in neighboring countries. There are different historic and political-economic factors behind the conflict - a main factor being the lack of development efforts on the part of the government accorded to these areas. This conflict also affects livestock production in the Delta in that customary transhumance routes of Fulani herders are disrupted. The Mema is particularly important as a grazing zone in the rainy season. Due to risk of being raided, the Fulani return earlier to the Delta pastures than they would otherwise have done. Cattle thefts have always been a major concern among the pastoralists. However, many claim that the problem has become worse as a result of the drought - and as a result of the political unrest (see also RIM 1987).

Some Hypothesis about Changes in Property Relations

A main 'triggering' factor behind these negative processes is obviously the twenty years of drought - resulting in a dramatic decline of land flooded for pasture (bourgou) and for flood recession agriculture; as well as lower output from both agriculture and livestock. But the effects of drought must be seen in conjunction with economic and political processes at micro, meso and macro levels. At the widest level this research is concerned with linkages between break down of long-enduring institutional capabilities to manage natural resources and degradation of range and crop lands on the one hand - and drought, population increase, technology and productivity stagnation and rural poverty on the other hand.

Related to the macro-level, it seems that the cumulative effects of historical factors, policy, institutional and market failures have lead to a situation characterized by four sets of factors; unequal control and access to resources, un-developed human capital and erosion of customary intitutions, technological stagnatation - and conditions af-

fecting demographic growth and/or migration. The state is the most important strategic actor in formulation of policies and institutional frameworks guiding processes of change at local level. The state has a range of instruments for influencing the policy process and the sectoral and regional distribution of resources. Such instruments include price and investment policies, fiscal, tenurial and subsidy policies, environmental policies and land use planning, as well as the provision of social, infrastructural and technical services. The state also mobilizes donor funds and directs foreign investments. The state officials play a major role in mediating conflicts between various dominant actors in the policy process (social classes and groups, sectorial or regional lobby groups, ethnic blocs). The state elite may also have its own vested interests.

At micro-level, individuals and groups of resource users act within the institutional and resource constraints set by factors at macro and meso levels. In other words, their actions are to a large degree conditioned by the structures of incentives and disincentives generated by this larger environment (Shanmugaratnam et al 1992b).

a) Factors at Meso and Macro Level: The State and the Market

This research will mainly focus on the implications of state policy and practice for customary tenure regimes and resources management - at the local level - in a local economy increasingly integrated into a market economy. Some examples of relevant processes to be studied are;

* Policy and institutional failures: What are the effects at the local level of the twenty-year-long military regime of Moussa Traoré - which seems to have operated a "monocentric political system, characterized by a captive legislature, a single political party, a frequently intimidated and corrupt national judicial system" (Thomson 1993)²⁰. This regime represented a lack of policy commitment to development in the pastoral areas. Government investment and price policies, for example, have favoured agricultural expansion in high potential areas - often at the expense of small scale farm improvements in dryland areas and pastoralism. Customary tenurial rights are not recognized while the state lacks ability to enforce state tenurial laws. A dual legal structure

²⁰ Moussa Traoré's regime was brought down in April 1991.

has left room for manipulation. Lack of commitment to dryland development is obvious in the weak or non-existent support for technical and social services and infrastructure in the Delta. Signs of new initiatives for decentralization and development will warrant special attention.²¹

* **Market failures:** It is a general problem that markets fail to assign values to goods without tradable property rights, to natural resources degradation, to intergenerational or social justice issues. The market may also fail to capture private interests of strategic actors in the policy process. A particular problem in the Delta arises since property rights to pasture are not recognized by state law and practice, while rights to agricultural land receives protection. There are also other problems with the 'free' market: In drought situations the market price of livestock products (milk) drop dramatically vis-à-vis grains, to the detriment of pastoralists. Moreover, the beef market demand has dropped due to coastal West African countries developing their own livestock sector, while also increasing imports from South America and the EEC (France). Finally, benefits to the pastoralists from livestock sales are limited by middlemen (the 'djawambe' - a certain Fulani cast) controlling the markets and taking a substantial part of the profit. In general, it can be hypothesized that state interventions in the market have not promoted incentives for livestock and sustainable management of local resources.

It can also be hypothesised that pastoral and rural populations of the Delta have weak representation and few powerful political actors to influence policy processes with implications for property rights systems and land management.

b) Micro Level Processes: Diversification and Differentiation

At the household level, it seems that the drought has spurred a diversification in the use of internal resources between different sectors and activities. Long-term and temporary migration in search for employment as herders or urban workers has become a common survival

²¹ The new government faces considerable problems in creating confidence and legitimacy for activities within resource management and conflict resolution.

strategy. The young men are the first to leave. Households have to use more of its limited labour for less output in both agriculture and livestock production (as well as in fisheries). This is both a consequence of drought, drop in flood levels and available land, and due to dispossession of animals. There is less household labour available for carrying out the transhumance. There are some - but few signs of agricultural intensification (better irrigation management, gardening, use of manure). Although animal health has improved, there is little improvement in productivity. Cash requirements at household level have increased due to new consumption patterns in the households (housing, education, clothing, kerosene, batteries) and due to demands by the government (taxes, fines). The households are probably more vulnerable to shifts in relative prices in the market. In general, one may hypothesize that many households have become poorer and have curtailed consumption and are more at risk of drought and famine. It is also likely that households are differently affected, and that a process of differentiation goes on; new local and outside elites might have strengthened their socio-economic positions and control over the Delta resources - with active support of various state institutions. State officials would be well represented among this elite.

An important hypothesis to be tested through research is to what degree the relative changes in entitlements between 'outsiders' and 'insiders' to the Delta and between pastoral Fulani (founding lineage's) and farmers (Rimaibe, Bambara, Marka) are root processes behind the disintegration of the customary resource management systems. To what degree are 'outsiders' favoured in decisions regarding access to resources and in resolution of resource use conflicts? What provides the legitimacy of actions by the Jowro and the village chief in land management decisions? To what degree are decisions unfavourable for weaker groups and pastoralists? Are the Jowros, by selling off the rangeland, slowly undermining their own credibility and positions in relation to the pastoral Fulani - who make up their traditional power base? What are the environmental and social costs involved?

A particular change is the increased control over crop land and agricultural surplus acquired by agricultural groups of the Delta (Rimaibe, Marka, Bambara, Songai) who in earlier periods were often dependents of the pastoral Fulani. This break-away from former feudal relationships started during the French colonial period with introduction of laws and regulations which changed traditional relationships between the Fulani and their former slaves (Rimaibe); a policy which

was continued by the independent Malien nation-state. With relatively good rains and agricultural harvests during the 1960s, the Rimaibe (and other agriculturalists) have been able to increase agricultural surplus and investments in cattle accumulation. Since the mid-1970s outside investors (merchants, government officials, local elites) have also bought and achieved control over considerable shares of the local cattle - previously under control of the Fulani. This change of ownership has been facilitated by the terms of trade between livestock products (milk) and grain generally being unfavourable to the Fulani pastoralists. The break-away by the Rimaibe result in loss of entitlements of the Fulani and the Jowros - and hence in their ability to maintain power and enforce rules over resource use (CIPEA/ODEM 1983, Cissé 1985a, 1985b and 1991, Turner 1992, Moorehead 1991).

Although ethnic conflicts might be a dimension to consider, it seems that the local conflict lines are more between resource-poor (insiders or outsiders) and resource-rich (insiders or outsiders) - and between agricultural production and livestock production systems. The pastoral Fulani are often the first to encroach on their own rangeland (Turner 1992).

There is also an evolution of new local organisations and decision making structures in the Delta which are worth exploring further (new village level institutions, cooperatives, women groups, NGOs, new political organisations). Some of the local groups may play an important role in resources management; livestock cooperatives, pastoral associations, range patrolling groups, bush fire control groups, water management committees, and women gardening groups. How have these evolved? How do they interact with other institutions and the state in property management? Finally, what role can the local government (from 1994) and new political organisations be able to play in resources management? The Union Démocratique du Peuple Malien (UDPM) played an active - though not very constructive - role at local level before the fall of the former regime (Moorehead 1991, Thomson 1992).

New Institutional Challenges in Pastoral Resources Management

The future of pastoralism - and regional development - in the Delta region depends a lot on an efficient and equitable operation of new property regimes. This requires a re-appraisal of the judicial system and the roles to be played by the state, local government, local institutions, local elites and individuals.

The institutional dimension of the crisis now facing pastoral and agricultural development is reflected in the basic constraints on pastoral and dryland management. Prospects of significant increases in range and crop land productivity are limited for technological as well as economic reasons - even if some potentials lie in regeneration of grass land (bourgou) and improved water and soil conservation techniques on crop land. Within the Delta there are, due to demographic pressure, few potentials for expansion into new areas; while outside some potentials lie in improving access to rangelands by opening new wells or repairing old wells. The scale and speed of transfer of rangeland to crop land create other institutional issues related to regulating competition for land and integration of crop-livestock production - often between producers of different management units and ethnicities.

The above factors raise the challenge of state and local institutions to deal with a host of problems ranging from land and water rights to socio-economic security of the pastoralists and other rural producers. Rural producers find themselves in a world which demands certain new skills. They need new skills in management of range and dryland agriculture, and for handling resource use conflicts of a new scale. They have to be able to communicate with the government in the official language, comprehend new laws governing their traditional resources, learn to manage new dimensions of local institutions, deal with political organisations, struggle for better marketing facilities and more reasonable terms of trade, and relate to rural banks and other sources of credit. They may also need to find additional income opportunities in non-resource based activities. Interviews with local leaders prove that they recognize the needs to come to terms with the state for economic as well as political reasons, and they do see the strengthening of local institutions as a vehicle towards such an aim (Shanmugaratnam et al 1992, Vedeld 1992). While at the same time there is a severe lack of confidence in the state, which is a major barrier to the initiation of fruitful dialogues.

Customary Territorial Organisations as Basis for New Institutions

An important part of this research would be to assess to what degree the customary common property institutions can serve as basis for improved management systems in the Delta. Although weakened over the last decades, these institutions still decide main patterns of resource use, ownership of water rights and presumably willingness to accept new forms of territorial organisation. According to some reviewers the customary institutions may often "be the best starting point for new regulatory approaches" (Swift 1989:148, see also Niamir 1990 and 1991, Moorehead 1991).

This requires an understanding of where and how these institutions are operating today. It also requires an understanding of what elements of the customary institutions operate the best and to what degree they can serve 'modern' or new requirements - including objectives of environmental protection and equity. For example, some customary institutions are strictly hierarchical and depend on domination by some groups over others. Domestic slaves still exist among Tuareg and Moor pastoralists. Slaves were also common among the Fulani of the Delta, and still many Rimaibe work as domestic servants in Fulani families. Traditional social hierarchies can be a major barrier to the bottom-up mobilization of people needed for new institutions to evolve. Customary leaders may in various ways resist change or broad participation in decision making and distribution of benefits. Both Jowros and village chiefs of the Delta use their position in the local community for self-enrichment. It is also important to realize that particular elements from traditional institutions cannot readily be transferred and "engineered" into a new property regime - which follows a different rationale. Would for example the transhumance system of the Delta - based on customary rights of different families - be viable if the role of the Jowros is further weakened or suppressed? Based on my first impressions from the field, it is difficult to see the Jowro institution surviving in the long term in its present form. While on the other hand, it may prove worthwhile to maintain important elements of the transhumance system.

Another limitation of the customary institutions is that - even if they include rules for regulating access of individual pastoralists to particular grazing areas - they do not include procedures for internal regu-

lation of livestock numbers within the clan (see also Swift 1989, Haaland 1990). Moreover, the customary leaders often lack the necessary skills and imagination for seeing new organisational challenges and needs of pastoralists and rural people.

Now, if the customary institutional basis is not appropriate, the modalities for new structures and property regimes may have to be developed. Ideally the state should create incentives for such institutions to evolve.²² This may prove to be a long-term and difficult task due to lack of state commitment for such development programmes, and due to local distrust in state initiatives.

An Enabling Environment for the Evolution of New Property Regimes

Approaches to pastoral institution building and improved resource management are presently being tested by the new Malien government and various donors in and around the Delta. A main conclusion from a recent assessment (1990) of earlier initiatives to this end is that the potentials for success depends a lot on the political will of the government in meeting local demands and in recognizing local community structures in law, policy and practice. Important government and project failures need to be addressed if the formation of such pastoral associations are to move forward (Shanmugaratnam et al 1992, Vedeld 1992, Swift 1988, Toulmin 1991).

Independent of what approach to use for pastoral and village institution building it seems critical if the government is willing to empower local institutions in terms of secure, defensible rights to land and water resources which can guarantee flexibility and mobility, authority to run local affairs and access to credit, marketing, education, health and other services. At a more general level it is essential whether the government (and donors) contributes to or counters the

²²Based on a policy of equity - the state can alternatively compensate those being excluded or marginalised from the commons or from pastoral production through provision of services (education, credit) to facilitate their participation in non-land based activities or urban employment.

creation of an **enabling environment for local institution building** appropriate for the variations in local socio-economic and ecological conditions. Such considerations call for important roles for the state - in collaboration with local institutions and individuals - in the management of natural resources. The issue may not be too much or too little state - but rather an appropriate balance between the state, market, local institutions and individuals. This also raises a host of problems linked to decentralization of decision making and devolution of authority to local levels as well as issues of governance, accountability, transparency - and even democracy.

An important part of such efforts in Mali would be to recognize the Delta as an integral part of the larger resource base for pastoral, agro-pastoral, agriculture and fisheries production. The delineation and legislation of pastoral grazing units and formation of pastoral associations which is being tested in the areas adjacent to the Delta (with the support of France and Norway), have to be part of a larger exercise in institutional reform and strengthening of common property systems for resource use also within the Delta. In this regard these rangelands are 'indivisible' (see Oakerson 1992). An increased stabilization of pastoralism in these surrounding areas - through provision of subsidized wells - with the attempt to delay the annual influx of cattle from these areas into the Delta - may become an important measure for a more sustainable use of the Delta. Above all, the approaches to local institution building must be broad and sensitive to what processes are already going on. Solutions to new management regimes - though initiated and sponsored from above - must be allowed to evolve from below - even if this may counter short term objectives of environmental conservation and equity.

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