LTC Paper

TENURE POLICY TOWARD COMMON PROPERTY NATURAL RESOURCES

by

Steven W. Lawry

LAND TENURE CENTER

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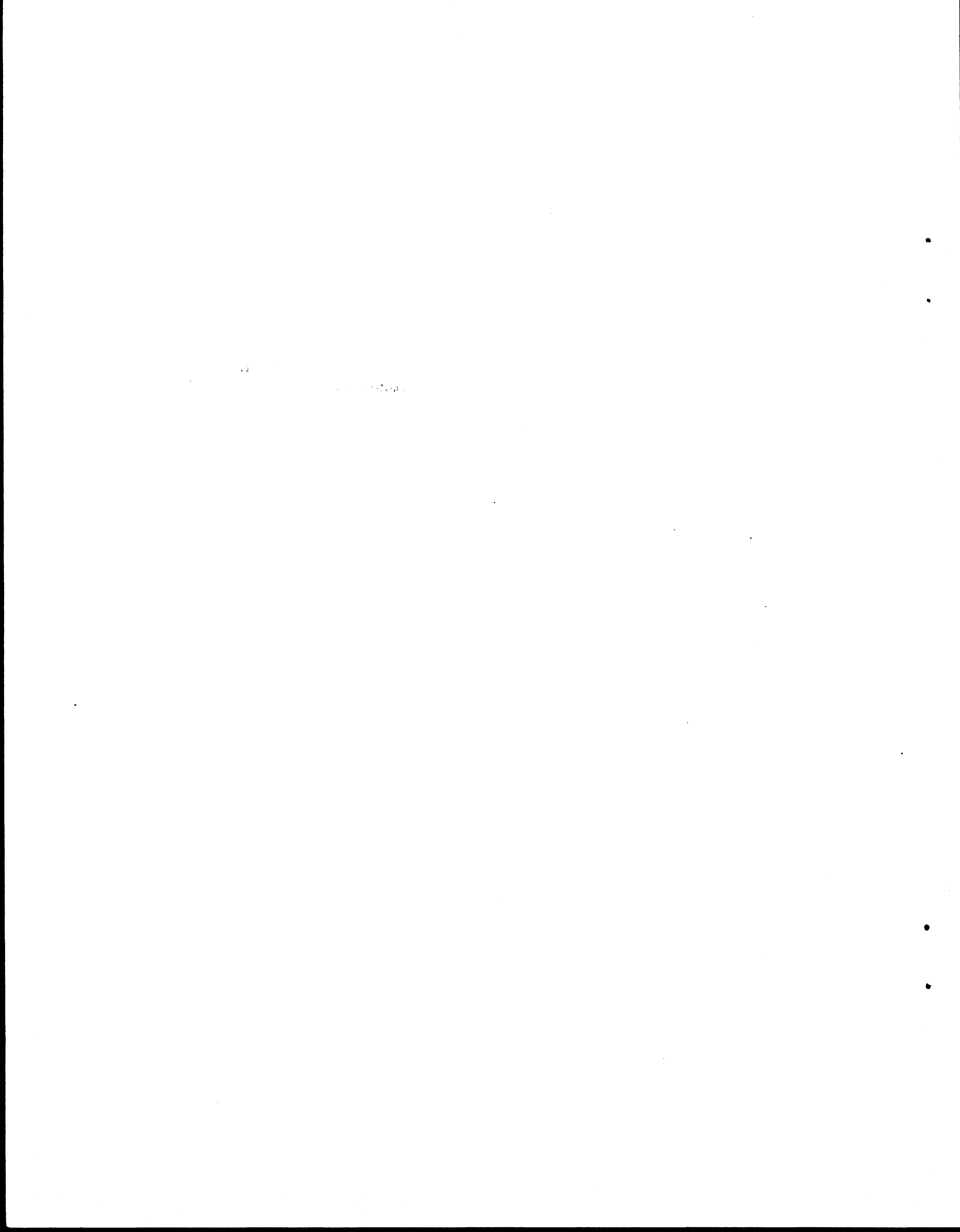

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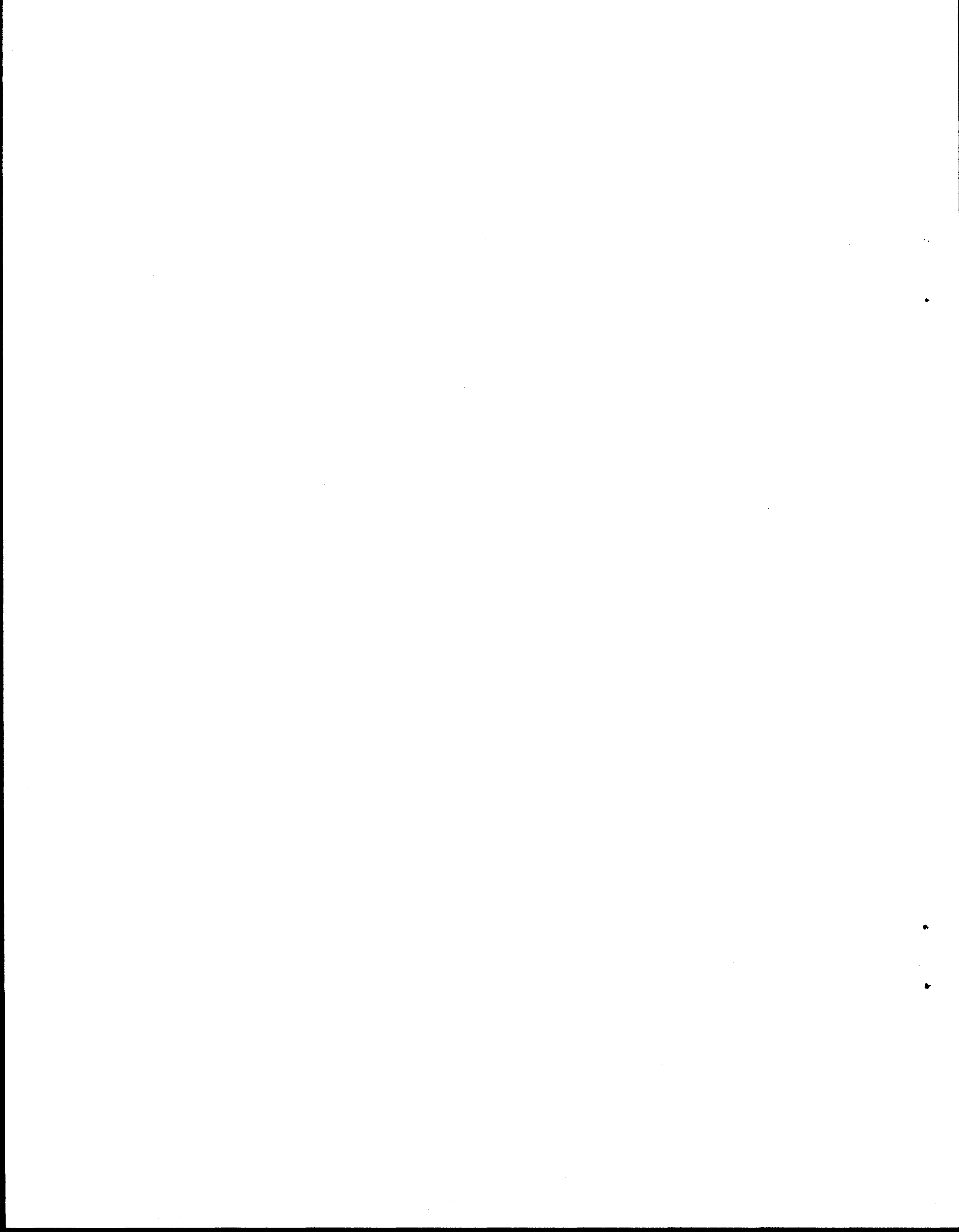

Preface

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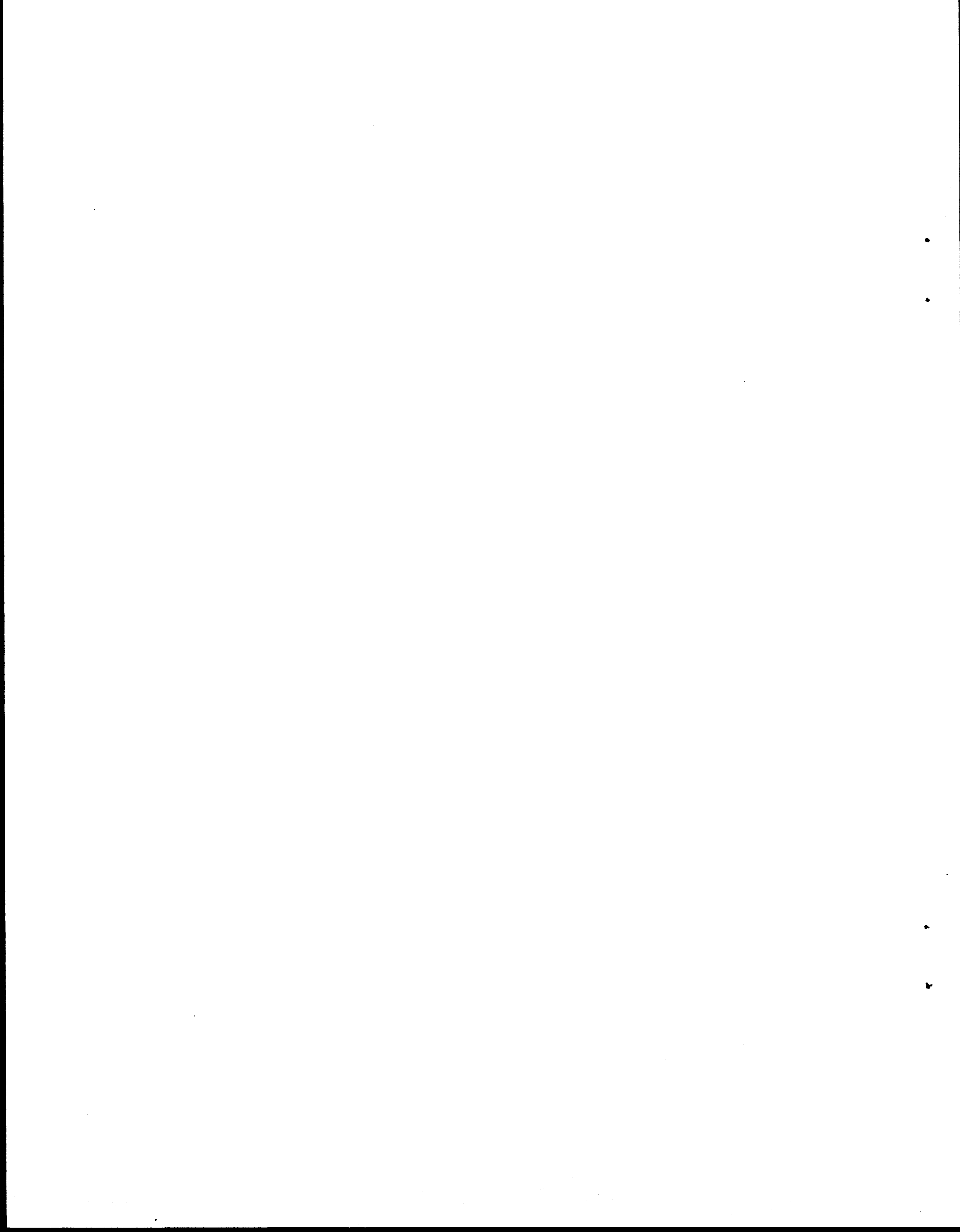

Executive Summary

This paper considers problems in improving local-level management of common property natural resources in sub-Saharan Africa. The paper reviews some of the major theoretical perspectives on the management of resources used in common, including the "tragedy of the commons," which suggests that communal resource use inevitably leads to overuse and degradation, and various "common property management" perspectives, which argue that collective use is not necessarily inconsistent with sustainable production. Those who subscribe to the latter view attribute the failure of local management to obtrusive state actions which have undercut the legal authority and political legitimacy of local institutions. This often leads to the recommendation that authority over resources be devolved to local authorities or to user groups, which, it is argued, are better placed to regulate local resource use.

The paper takes the position that only in rare cases would local institutions assert effective control over communal resources, even if authority is devolved. Economic incentives for individual participation in common property management arrangements are often weak. Incentives are growing weaker as sources of rural income and employment diversify and as rural households become increasingly reliant upon nonlocal income sources. Household economic autonomy and income diversification contribute to the breakdown of social relationships needed to sanction collective controls over individual behavior. Patron-client relationships and traditional authorities are losing their force. In the case of some resources, such as low productivity grazing land, direct group regulation of individual management practices is in many respects less efficient than arrangements which permit users to exercise maximum discretion over use and management decisions.

Effective management will not emerge by simply devolving authority to weak local institutions. At the same time, direct state regulation is expensive, generally ineffective, and often unfair to resource users.

Limited state resources are more usefully applied to extension and technical assistance programs. In the short term, policies are needed which address the respective weaknesses of states and communities in managing communal resources. Recommendations are made for appropriate state and community roles in "co-managing" natural resources. Long-term policies should be based upon an assessment of incentives for individual participation in communal management activities and upon a thorough review of the costs and benefits--social, economic, and political--of alternative tenure arrangements.

TENURE POLICY TOWARD COMMON PROPERTY NATURAL RESOURCES

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I. Introduction

Policymakers concerned with relationships between development and natural resource management have been seeking ways to promote better local management of resources used in common, such as grazing land, forests, and wildlife and biological resources. There has been an upsurge of academic interest in local-level common property management institutions, exemplified by the National Research Council volume, Common Property Resource Management (1986), and a collection of articles edited by McCay and Acheson, The Question of the Commons (1987). Several policy studies have advocated the merits of decentralized, local management of communal resources (ARD 1989; Shaikh et al. 1988; McNeely 1988). Donor agencies and national governments have used pilot projects as vehicles for testing various models of local-level management.[1]

This interest in local common property management has its antecedents in debates within the academic community and among donors over how systems of property rights affect resource management. The current debate was initiated in the late 1960s by Garrett Hardin's critique (1968) of individual decision-making where resources are used in common, what he characterized as "the tragedy of the commons." Using communal grazing as his model, Hardin argued that the marginal benefits

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1. Examples include the USAID-assisted Forestry and Land Use Project (FLUP) in Niger, which developed a forest-management plan and established a fuelwood-marketing cooperative in a degraded forest reserve near Niamey; the Land Conservation and Range Development Project (LCRD) in Lesotho, also assisted by USAID, which established grazing associations in mountain areas; and the Eastern Senegal Livestock Development Project, assisted by the World Bank, which promoted establishment of pastoral associations.

to the individual herder of adding an additional animal to an optimally stocked commonage will exceed his marginal costs, measured in terms of reduced range productivity resulting from the animal's contribution to overgrazing.[2] This is because the marginal costs of overgrazing are shared among the community of users, while the herder enjoys the total benefit of the added unit of production. Under such circumstances, rational herders will build up their private herds even after the carrying capacity of the commons is exceeded. Ecological collapse results. For Hardin, the solution was tenure reform to something resembling private property.

Some programs of range tenure reform, such as the Tribal Grazing Lands Policy (TGLP) in Botswana, drew their rationale directly from Hardin's "tragedy of the commons." The TGLP, a World Bank-assisted program, granted individuals long-term, exclusive lease rights to previously communal grazing land (Picard 1980; Lawry 1983).

Over the last fifteen years, a literature critical of Hardin's "tragedy of the commons" analysis has developed. Ciriacy-Wantrup and Bishop (1975) faulted Hardin for failing to distinguish between open access and common property. Open access situations are characterized by an absence of property rights, or a "free-for-all." Under common property, individuals had certain specified use rights to a common resource.

For Ciriacy-Wantrup and Bishop, Hardin's hypothetical pasture was a valid example of open access. But they faulted Hardin for overlooking the existence or potential for common property arrangements. Under common property, the use rights of individuals could be defined and limited so that overuse of the common resource would not result. In

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2. Hardin implicitly assumes zero marginal herding costs. However, Stryker (1984, p. 178) shows that as more pasture resources are used, "increasing amounts of labor and capital have to be applied at the margin to obtain equal increments of production." Diminishing returns can exist in the absence of overgrazing and can lead herders to limit stock numbers before the technical limits to production are reached. See Gordon (1954) and Jarvis (1984) for the economic theory of "the tragedy of the commons."

many settings, communal use has economic and ecological advantages over individual use. The costs of delineating clear private property rights to many kinds of resources would be prohibitively high. Certain resource needs of poor people and small-scale users are more likely to be met within common property regimes. In arid or semi-arid rangelands, where range productivity varies seasonally and spatially with variable rainfall, communal use accommodates relatively easy herd movement in pursuit of available grazing.

The concept of common property provides a useful corrective to Hardin's oversimplified critique of collective resource use. However, we should not underestimate the difficulty of establishing common property arrangements. Credible common property rules will emerge from social and economic relationships which can sustain rule-making and rule-enforcing institutions. The changing nature of village economies and social relations, coupled with growing pressures on local resources, may limit the scope for local action. Care must be taken not to ascribe to common property arrangements extant under former social and economic conditions the ability to manage successfully resources under contemporary circumstances. In this regard, it is useful to distinguish between a "minimum" definition of common property and common property arrangements required to regulate resource use intensively.

A "minimum" definition of common property is met where rules define who has access to the commons. For instance, in many traditional African societies, only residents of a village would have use rights to surrounding pasturage or forest products; others would be excluded (Berry 1988; Uchendu 1971). Membership qualifications alone may facilitate sustainable use as long as demand remains in rough correspondence with supply and is relatively constant over time. In many low-technology, traditional economies, various technical constraints often interacted with low rates of population growth to maintain a de facto balance between demand and supply.

Explicit controls over the behavior of qualified commons users will become necessary where, due to technological change or population growth, local resource demand exceeds sustainable supply. If the

community of users cannot regulate its members under conditions of scarcity and competition, then, for all intents and purposes, "open access" prevails. Rules must be reformulated to account for changing circumstances. This will usually involve intensifying controls and limiting use rights of qualified users. Establishing and enforcing more intensive controls may entail higher costs and put unbearable political strains on management groups or local authorities. The balance of costs and benefits--political and economic--may shift in favor of other tenure systems, such as one based on private property or on controls administered by state authorities.

Some recent critiques of the breakdown of local common property management systems have placed primary blame upon obtrusive state action, where states have undercut supposedly viable local systems by asserting rights over natural resources (Bromley and Cernea 1988; McNeely 1988). Obtrusive state action has been a factor, but the decline of local control and the rise of national authority over natural resources are more properly seen as features of national economic and political integration and other changes associated with economic development.

This paper argues that the "modernization process" itself has reduced incentives for individuals to participate in localized collective arrangements, has undercut the economic viability of common property institutions, and has reduced the political legitimacy of local management authorities. Population growth and technological change have increased pressures on natural resources to the extent that "minimum" common property rules do not provide effective regulation. Local institutions, weakened by far-reaching economic and political changes, are unlikely to impose intensive controls, especially where there is little precedent for direct regulation.

Local common property management will not emerge simply by giving greater official rein to local action. Policy initiatives will have little impact unless an important array of incentives supportive of common property management are operating at the local level. I am not as sanguine as some about the scope for autonomous local action in this area.

II. Incentives and Constraints to Local-Level Management: Some Conceptual Issues

A theoretical argument for why local-level common property management *should* emerge has been provided by Runge (1986), who believes that strong incentives operate in favor of collective action in Third World village situations. Interdependent decision-making about resource use is characteristic of the "village economy." Runge cites three interrelated features of the village economy which should spawn collective action. First, relative poverty imposes a budget constraint on many forms of individual action to the extent that many activities are possible only through joint action. Joint-use fisheries, grazing areas, and forests may be necessitated by the fact that the high transactions costs of "well-defined and enforced property typical of the West may be too great for a subsistence economy to bear" (ibid., p. 33).

Second, where the productivity of the resource base is low and varies spatially and over time (Runge uses the example of rangelands), individuals will require access to various portions of the commons season to season and year to year. The third characteristic of the "village economy" is a function of the first two. In the face of relative poverty and environmental uncertainty, common property institutions may be created that "rather than emphasizing the right to exclude some . . . provide instead for the right of many to be equally included as a hedge against uncertainty" (ibid., p. 35). Furthermore, "interdependence places a premium on mechanisms that coordinate community decisions" (ibid., p. 43). Free-riding is implausible where common property institutions provide individual commons' users assurance about the behavior of others by making and enforcing common property rules (ibid.).

The incentives for the emergence of common property arrangements are not as compelling as Runge's model of the village economy would suggest, mainly because it fails to capture the true character of village economies in increasingly open economic systems. When analyzing village economies, we must think about the whole range of strategies available to villagers in pursuing a living. In many situations, reliance upon communal resources is declining. Natural resources used by

villagers are both private and communal in character. Principal sources of agricultural income are usually secured from crop production on individual holdings and not from the commons. Villagers seek and find substitutes for some communal resources, such as fuelwood, as local supply diminishes or take steps to develop private sources of supply. Increasingly, villagers pursue income in other, mainly nonagricultural sectors of the economy and are reliant on remittance income sent home by members working in cities. Villages are part of larger economies, which offer villagers a greater range of strategic choice than is the case in the isolated "village economy" posited by Runge.

The open character of today's village economy, and the fact that essential village resources are both private and collective in character, means that individuals have alternative income sources to declining common property resources. These factors reduce the stimulus for collective action which might result where income alternatives to communal resources are absent. These circumstances can lead to greater competition, and not cooperation, in the use of communal resources.

These features of the village economy give rise to several policy issues, which I summarize below as the problem of incentives and the problem of authority.

The first issue is the _problem of incentives_; more exactly, economic incentives are often insufficient to stimulate individuals to participate in or sanction local-level resource management. The economic returns to collective action will, for many individual users, be marginal or even negative. The resource in question may be of minor importance in relation to other sources of income, substitutes may exist, and its relative importance may vary from user to user. In the case of some resources, such as low productivity grazing land, optimum use may in fact be achieved where users exercise maximum individual discretion over management decisions.

The second issue is the _problem of authority_. This relates to the difficulties communities have in moving beyond the "minimum" definition of common property to establishing rules and procedures governing resource use locally and ensuring that community members observe them.

This problem is grounded in part in the incentive problem noted above. Where resource rights are granted as a matter of social right, or where projects promote user groups as management authorities, groups will have to achieve internal consensus on management policy. Democratically constituted user groups must rely on the sanction of their membership to enforce rules. Where interests are heterogeneous and views toward appropriate resource-use standards vary, sufficiently strong support for enforcement of many kinds of rules will not emerge. Reliance upon existing structures of elite authority (for instance, chiefs) may be appropriate in some situations. However, local authority generally is losing ground to state authority. Traditional authorities especially have lost or are losing their legitimacy, and patron-client relationships are losing their force.

These problems of incentives and authority are complex and their significance varies, depending upon the nature of the resource, the role of the resource in the local and national economy, and past and present policies toward resource management. It is worth considering them in greater detail.

III. The Incentives Problem

Over the last several years, a case study literature has developed which examines the problems that communities of users have in managing common property resources. Some policy lessons from that literature are considered below.

Collective action is more likely to result where the common resource is critical to local incomes and is scarce.

Rarely are both of these conditions present. If we accept that common property institutions are more likely to emerge where the resource is of critical economic importance to local users, then the prospects for bringing resources of relatively low economic value under improved local common property management cannot be very good. Where wildlife, complex forest habitats, and other biological resources have little economic value to local people, sustainable local management

institutions are unlikely to emerge, especially where these resources compete for land for agricultural purposes (Anderson and Grove 1987). Steps might be taken to improve the incentives for local management by increasing the value of the resource to local people, for instance, by granting hunting rights where none exist, or by granting communities a percentage of forest concession revenues. The Luangwa Valley project in Zambia and the CAMPFIRE program (Communal Area Management Plan for Indigenous Resources) in Zimbabwe are two examples of attempts by wildlife authorities to give villagers and local governments a share of revenues generated through wildlife hunting concessions and tourism (Bell 1987).

Many common property resources, such as fuelwood and grazing, are subject to increasing scarcity. Although fuelwood may be an important source of energy, it may be a relatively minor component of overall household income. Long-distance trade in fuelwood, common in the Sahel, may assure a continuing supply, albeit at higher cost. The new price may not be sufficiently high to offset the transactions costs associated with intensifying management of local woodlands. The importance of local fuelwood as an energy source may decrease as villagers make greater use of (less desirable) substitutes, such as crop residues and cow dung (Casey and Muir 1986). Poorer segments of the community may be most dependent upon local fuelwood for energy but may lack a power base within the community to assert control over its use (Shepherd 1985).

Resource scarcity can lead to cooperative management or greater competition and individual action to privatize the resource. Wade (1986), in a study of village management of irrigation schemes in south India, found that "corporate organization to manage common property is found, with hardly any exceptions, only towards the tail-ends of distributories (where resources are most scarce)" (ibid., p. 249). Upstream villages were wasteful in their use of water, and rationing institutions appeared not to exist, let alone operate. From this Wade concluded that "the opportunities for avoiding losses or making income gains by collective action will only be taken if the losses or gains are large" (ibid., pp. 248-249). Based upon his research findings, Wade deduced several lessons for the design of common property organizations.

Most important among them is that "villagers are likely to follow joint rules and arrangements only to achieve intensely felt needs that could not be met by individual responses" (ibid., p. 248). Similarly, Pinkerton (1986) shows that fishery cooperatives in North America evolve out of sometimes painstaking adaptations to the realities of declining resource productivity. Cooperation is usually a last resort and is achieved only when the high financial costs of individualistic, strictly competitive strategies prove to be unsustainable.

Scarcity will not necessarily result in common property solutions but may lead individual users to attempt to enclose the commons for private use. "Spontaneous" enclosure movements are taking place on rangelands in East Africa, including Kenya, Somalia, and the Sudan (Behnke 1986, 1988; Graham 1988). Behnke (1986) attributes range enclosure to three interrelated factors: (1) a decline in the supply and a corresponding increase in the scarcity value of grazing land, which leads to (2) increases in the commercial value of range or livestock production, and (3) decreases in the relative costs of enclosure, costs which are social and political in nature as well as monetary.

Collective responses were essential to operation of the irrigation systems studied by Wade but not essential to use of the extensive rangelands studied by Behnke. Depending upon the nature of the resource and local social and economic relationships, local action could result in privatization and not a common property solution. Those making a larger claim on the resource, by virtue of large herd size or ability to mobilize labor or other assets, can more easily position themselves to assert exclusive rights than can small claimants. Options for claiming and registering land titles available in national legislation can be used by the better-educated and more-influential to assert private claims to previously communal land. Here, policymakers may be concerned with impeding attempts by the powerful to capture the commons for private use.

Collective action will be more difficult to achieve where interest in the resource as a source of income varies, or where resource use strategies differ significantly.

Widespread recognition of resource degradation will not necessarily provide a stimulus for collective action where interest in the resource as a source of income varies. In a pilot range-management project in Lesotho, USAID and the Government of Lesotho established a grazing association at Sehlabathebe in the Drakensburg Mountains and gave it management control over a badly degraded watershed (Lawry 1988). A popularly elected executive committee was responsible for administering a grazing management plan which provided for the seasonal rotation of livestock among winter grazing areas near villages and summer grazing areas in the surrounding mountains. Livestock found grazing in violation of the plan were subject to impoundment by range riders, local enforcement agents paid by the association.

Range conditions improved, but levels of rule violation were high. The executive committee proved unable to enforce rules in the face of nonadoption of the plan by many livestock producers. Supervision of the enforcement program fell to the Basotho and expatriate project staff, who as outsiders were perceived to be socially neutral and technically competent. Even then, many features of the plan proved onerous, and it was substantially amended to accommodate what subsequent research identified as considerable diversity of interest in livestock production in the local population.

Research showed that economic interest in livestock varied significantly among households. Only about 16 percent of households cited livestock production as their principal source of cash income, though 84 percent of households owned livestock. Livestock ownership patterns and livestock management practices varied with such household demographic characteristics as age, sex, and residential status of the household head. About 30 percent of households were headed by women, and another 30 percent were headed by men absent for work, mainly in South Africa. Smallholders and households short on herding labor and management skills were less able to adopt many of the more intensive range-management and livestock-production practices promoted by the plan, such as seasonal grazing rotations and production of forage crops.

Households more dependent upon remittances (which were the principal cash income source for 50 percent of households) were less likely

to be paid-up members of the grazing association. They were also less likely to own cattle posts--bases of operation in the mountain pastures during the summer months. Adoption of the grazing plan would have required them to make arrangements to share cattle posts belonging to others. This would involve new costs which many sought to avoid by keeping their livestock in the village year-round, in violation of the grazing plan.

This case suggests that when groups of households vary in their economic interests in the communal resource, and in their management practices generally, so too they may vary in their willingness and ability to adopt certain aspects of <u>any</u> communal management scheme. The diemma is one of achieving coordinated, common behavior in an environment characterized by producer diversity.

Reliance of rural communities upon external sources of income is not a phenomenon peculiar to southern Africa. One sees similar patterns of large-scale labor migration and reliance upon nonagricultural income in the Sahel and in other regions of Africa (Eicher 1989). Fernandez (1987), in drawing general conclusions from a study of community forests in Spain, argues that integration of local economies into larger systems contributes to "defection" from the commons, or declining support at the local level for common use arrangements. This results from a variety of factors but principally from processes which draw local people into extensive networks of market relations. This decreases the importance of local production and exchange relations which, among other things, may have acted to mediate access to the commons and underpinned its economic importance locally.

IV. <u>The Authority Problem</u>

Collective responses to commons problems often begin in efforts by local, usually small-scale users to defend their rights in the face of attempts by outside (and often large, commercial) interests to privatize the commons or to overexploit it (McCay and Acheson 1987). Local attempts to defend the commons against encroachment are based usually upon some assertion of social territoriality or defining who is "us" in

relation to "them." But integration into larger systems means the social and economic "center of gravity" shifts away from the community, and rural people become politically marginalized (Fernandez 1987). The impacts of new technologies and large-scale markets for resources cut across territorially based user groups and even local government units. Regulatory functions become more complex and must cover larger areas than the local political unit (Dorner 1986). Centralization of political authority reduces the ability of the community to defend its claims to the commons in the face of encroachment by outsiders and penetration of tenure arrangements prevailing in the rest of the system.

<u>Successful management by user groups requires widely shared commitment to management objectives.</u>

Democratically constituted user groups are especially vulnerable to the incentives problems discussed above. Where local management by user groups is effective, it often depends on an embedded egalitarianism and sense of moral obligation to one's neighbor, which is not easily created through policy initiatives but which grows out of convention and rough-and-ready experience. This is illustrated by Taylor's study (1987) of an Irish fishing community which steadfastly resisted outsider attempts to organize a local cooperative--in part out of fear that informal and fairly successful mechanisms for managing the fishery would fall victim to conflicts inherent to organizations with formalized decision processes.

The original design of group ranches in Kenya provided for a committee of elders to manage the ranches. Project designers assumed that high levels of social integration and deeply shared cultural values provided sufficient basis for intensive group control of livestock and rangeland. While Maasai have traditionally worked out arrangements for sharing grazing and herding tasks, traditional management practices in fact entail high levels of individual autonomy in range use and livestock management, and especially in financial matters involving purchase of inputs and livestock marketing. Management committees rarely functioned, and the trend is for group ranches to be broken up and registered under individual title (Jacobs 1984; Graham 1988; Grandin 1989).

The authority of traditional authorities and local elites is eroding.

Where incentives are insufficient, or democratically constituted user groups have difficulty asserting control over "free riders," it may be appropriate to draw on traditional authorities or local elites, especially to enforce rules. Wade (1986, p. 249) observes that if common property management organizations are to be sustained, they should "draw on existing structures of authority." Irrigation councils in the south India villages studied by Wade were effective where councils were made up of large holders, people with substantial private interests in seeing that the irrigation scheme worked and who thereby found it in their "interest to bear the transaction costs of organizing others to share in the cost of providing the collective good" (ibid.). They were able to enforce rules on smallholders through manipulation of the patron-client relationships that existed between elites and the mass of poor water-users. But an accompanying feature of national economic integration is that the bounds between patrons and clients are dissolving as the poor pursue a wider range of income options and as the elite shed their social obligations to former clients (Scott and Kerkvliet 1973).

Traditional authority over resources rarely extended to intensive control over individual use.

Analysts sometimes assume that traditional authorities such as chiefs have more power, or exercise more authority in certain realms, than is in fact the case. Centralized control over livestock and range management has generally not been a feature of pastoral societies in sub-Saharan Africa. An anthropologist makes the following observations on livestock and range management projects in Sahelian West Africa.

> Many development documents exhibit a "take me to your leader" optic; they advise getting the approval of traditional chiefs for any proposed changes, under the assumption that the rest of the community will follow along. Few pastoral societies are in fact so hierarchically organized. On the contrary, the more likely situation is that there is no individual who has the authority to tell any other member of his community how the latter should handle his animals. Many pastoral societies have no centralization of managerial decisions relating to access to grazing lands and water, and therefore herd size, composition, and movements (Horowitz 1979, p. 67).

The nature of rangeland resources complicates the whole question of corporate management for livestock and range production. Some analysts dispute the conventional wisdom in range management that stocking levels should be maintained at a carrying capacity usually defined by the lowest average rainfall level (and hence lowest average range productivity). Range productivity varies greatly with highly variable rainfall in space and in time. An optimum strategy is one which accommodates adjustment of herd size to available forage and/or accommodates movement of herds over extensive areas in pursuit of forage where it is available. Sandford (1982) defines such a strategy as "opportunistic," as distinct from a "conservative" strategy of maintaining stock numbers at levels which could be supported by low average forage production. Riesman (1978), in a study of Fulani range management, suggests that independent, "opportunistic" decision-making is essential to successful livestock production in the Sahel.

> It is important to understand that both Fulani political organization and their love of independence contribute significantly to the Fulani ability to take advantage of the economic resources of the Sahel. . . . We have seen that the land is best utilized when people and cattle spread out to the maximum degree, and for this to happen people have to be relatively independent of one another, able to make their own decisions and take their own risks, and like being in that situation (ibid., p. 28).

Postindependence political reforms have reduced the authority of local chiefs all over Africa; in many cases, they now act as minor government functionaries. Economic and social changes have also undercut their authority. Isaac Schapera made the following observations on the implications of labor migration to the political authority of Tswana chiefs in an article published in 1928. This passage provides a graphic example of how the "center of gravity" shifts away from the local unit toward the center.

> Instead of working for their Chief [villagers] now worked for themselves: the accumulation of wealth became a motive in the life of every individual. Travel and the absence for longer or shorter periods from their home environment widened the breach between the chief and his subjects. The economic reciprocity which entered so strongly into the relations between

> chief and subjects, and which formed one of the vital features of the economic system, has broken down almost completely. The chief no longer plays the part of tribal banker: his function as the holder and distributor of all the surplus wealth has been obliterated by the new economic forces (Schapera 1928, p. 150).

V. The Role of the State

The breakdown of local management systems results in part from the integration of local communities into larger economic and political systems. The state becomes the principal unit for making and implementing public policy. In many cases, states have taken it upon themselves to administer use of communal resources. Upon independence, many African states nationalized all communal land. Former French colonies already had in place forest codes and pastoral codes which provided for a direct state role in resource management through administration of use permits and policing of the state's resource domain, usually defined very broadly to include all but urban land (Elbow and Rochegude, forthcoming).

Direct state management has rarely worked well. State agencies lack timely information on resource condition and use practices. Rule enforcement can be capricious and arbitrary. Local input is often not solicited and local initiative is obstructed. State authority is still weak, especially in Africa. While states have usurped the last vestiges of local control through legal reform, they have been unable to put in place an effective, alternative system for managing collective resources. But the kinds of social and economic changes discussed above preclude a strategy based wholly upon a return to local control. The result is a hiatus, in which economic and political changes have combined to forestall effective local action and state regulation has proven ineffectual.

Under these circumstances (which are likely to pertain for some time to come), it may be useful to think in terms of policies for shoring up the respective weaknesses of states and communities in managing collective resources. For instance, government action can help create

the conditions for local action. The government can clarify group territorial rights, adjudicate boundary disputes, and provide technical assistance to local groups attempting to intensify management.

In some situations, gains might be achieved where communities and government enter into "co-management" arrangements. Government would assign group rights to a specific territory, provide technical guidance on resource management practices, and help create a more positive economic environment for cooperation by, for instance, giving a local cooperative preferential marketing rights to a local resource such as fuelwood, fish, or grazing. The local cooperative organization would distribute income among members, mobilize community participation, and advise the government on the social and economic acceptability of proposed management practices and rules.

A co-management model could be especially helpful when dealing with the problem of rule enforcement. The government can assist in enforcement of rules which have broad support in the community, especially where community authority is not strong enough to curb free-riding. Co-management is exemplified by the approach taken by the USAID project in the Guesselbodi Forest Reserve in Niger and has evolved, more or less out of trial and error, at Sehlabathebe in Lesotho. In both cases, co-management represents a major departure from ineffective policies to regulate resource use through administration of rules. These approaches rarely worked well, were costly, and contributed to hostile community-state relations on resource issues.

Co-management would require relatively high levels of technical input by trained staff. Such staff are in short supply, and this could be a constraint to widespread implementation of co-management programs.

VI. Conclusions

The apparent breakdown of local common property management arrangements is not simply attributable to capricious state actions. Breakdown has been the result of fundamental changes in rural economies. Communal resources are increasingly marginal to the economic well-being of many

individual villagers. The relative importance of communal resources to household income varies considerably, undercutting the ability of democratically constituted user groups to assert control over all users. The political decline of traditional authority is in part due to their reduced economic roles. The social and economic bases for collective control of individual use are eroding. Policies must be based upon a recognition of the limits and opportunities for local management. The role of the state can be decisive in providing a legal framework and in improving economic incentives for desirable management practices. To date, state actions have usually been inappropriate and have rarely led to improvement. Offered below are some summary observations and recommendations for improving common property management.

1. Policymakers wishing to promote local control of common property resources should consider, in any given situation, whether appropriate incentives exist for individuals to participate in collective resource management. Sustained local action is most likely to result where the resource in question is scarce and of critical importance to the economic well-being of a large proportion of the community, and where the transactions costs associated with collective action are less than would be the case if resources were under individual control.

2. In some situations, government action can help create the conditions for local action by clarifying group territorial rights, adjudicating boundary disputes, and providing technical assistance to local groups attempting to intensify management. Local and state "co-management" may also improve collective resource management. However, this will often require higher levels of technical assistance than many developing countries can afford.

3. It will be difficult to interest local communities in programs to improve management of resources which are not of high value, particularly if their conservation conflicts with use of resources which are of high value (for instance, wildlife and forest resources in areas of expanding cultivation or grazing). Community attitudes might change if a wider range of economic rights to the resources in question were extended to villagers. For instance, villagers might be given hunting

rights where none previously existed or might be given a percentage of revenues generated by state leases of hunting concession rights, as is being attempted in Zimbabwe in the CAMPFIRE program and in Zambia in the Luangwa Valley project. Devolution of use rights may not always be appropriate (for instance, rights to rare or endangered plant and animal species), and direct state regulation may have to remain the principal means of management.

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