POLICY · PLANNING · RESEARCH

PPR

57

World Bank Discussion Papers

The Management of Common Property Natural Resources

Some Conceptual and Operational Fallacies

Daniel W. Bromley
Michael M. Cernea

RECENT WORLD BANK DISCUSSION PAPERS

No. 1. Public Enterprises in Sub-Saharan Africa. John R. Nellis

No. 2. Raising School Quality in Developing Countries: What Investments Boost Learning? Bruce Fuller

No. 4. Country Commitment to Development Projects. Richard Heaver and Arturo Israel No. 5. Public Expenditure in Latin America: Effects on Poverty. Guy P. Pfeffermann No. 6. Community Participation in Development Projects: The World Bank Experience. Samuel Paul

No. 7. International Financial Flows to Brazil since the Late 1960s: An Analysis of Debt Expansion and Payments Problems. Paulo Nogueira Batista, Jr.

No. 8. Macroeconomic Policies, Debt Accumulation, and Adjustment in Brazil. 1965-84. Celso L. Martone

No. 9. The Safe Motherhood Initiative: Proposals for Action. Barbara Herz and Anthony R. Measham [Also available in French (9F) and Spanish (9S)J

No. 10. Improving Urban Employment and Labor Productivity. Friedrich Kahnert

No. 11. Divestiture in Developing Countries. Elliot Berg and Mary M. Shirley

No. 12. Economic Growth and the Returns to Investment. Dennis Anderson

No. 13. Institutional Development and Technical Assistance in Macroeconomic Policy Formulation: A Case Study of Togo. Sven B. Kjellstrom and Ayite-Fily d'Almeida

No. 14. Managing Economic Policy Change: Institutional Dimensions. Geoffrey Lamb

No. 15. Dairy Development and Milk Cooperatives: The Effects of a Dairy Project in India. George Mergos and Roger Slade

No. 16. Macroeconomic Policies and Adjustment in Yugoslavia: Some Counterfactual Simulations. Fahrettin Yagci and Steven KamTn

No. 17. Private Enterprise in Africa: Creating a Better Environment. Keith Marsden and Therese Belot

No. 18. Rural Water Supply and Sanitation: Time for a Change. Anthony A. Churchill, with the assistance of David de Ferranti, Robert Roche, Carolyn Tager, Alan A. Walters, and Anthony Yazer

No. 19. The Public Revenue and Economic Policy in African Countries: An Overview of Issues and Policy Options. Dennis Anderson

No. 22. Demographic Trends in China from 1950 to 1982. Kenneth Hill

No. 23. Food Import Dependence in Somalia: Magnitude, Causes, and Policy Options. Y. Hossein Farzin

No. 24. The Relationship of External Debt and Growth: Sudan's Experience, 1975-1984. Y. Hossein Farzin

No. 25. The Poor and the Poorest: Some Interim Findings. Michael Lipton

No. 26. Road Transport Taxation in Developing Countries: The Design of User Charges and Taxes for Tunisia. David Newbery, Gordon Hughes, William D.O. Paterson, and Esra Bennathan

No. 27. Trade and Industrial Policies in the Developing Countries of East Asia. Amarendra Bhattacharya and Johannes F. Linn

No. 28. Agricultural Trade Protectionism in Japan: A Survey. Delbert A. Fitchett

No. 29. Multisector Framework for Analysis of Stabilization and Structural Adjustment Policies: The Case of Morocco. Abel M. Mateus and others

No. 30. Improving the Quality of Textbooks in China. Barbara W. Searle and Michael Mertaugh with Anthony Read and Philip Cohen

(Continued on the inside back cover.)

57 World Bank Discussion Papers

The Management of Common Property Natural Resources

Some Conceptual and Operational Fallacies

Daniel W. Bromley
Michael M. Cernea

The complete backlist of publications from the World Bank is shown in the annual *Index of Publications,* which contains an alphabetical title list and indexes of subjects, authors, and countries and regions; it is of value principally to libraries and institutional purchasers. The latest edition is available free of charge from Publications Sales Unit, Department F, The World Bank, 1818 H Street, N.W, Washington, D.C. 20433, U.S.A., or from Publications, The World Bank, 66, avenue d'lena, 75116 Paris, France.

Daniel W. Bromley is a professor of agricultural economics at the University of Wisconsin and a consultant to the World Bank; Michael M. Cernea is the sociology adviser in the Bank's Agriculture and Rural Development Department.

Library of Congress Cataloging-in-Publication Data

Bromley, Daniel W., 1940-
The management of common property natural resources : some conceptual and operational fallacies / Daniel W. Bromley, Michael M. Cernea.
p. cm. — (World Bank discussion papers ; 57)
Bibliography: p. ISBN 0-8213-1249-9
1. Natural resources—Management. 2. Right of property. I. Cernea, Michael M. II. Title. III. Series. HC59.B763 1989
333.7—dc20 89-9201
CIP

ABSTRACT

1. The term "common property" has been largely misunderstood and falsely interpreted for the past two-three decades. Common property regimes are not the free-for-all that they have been described to be, but are structured ownership arrangements within which management rules are developed, group size is known and enforced, incentives exist for co-owners to follow the accepted institutional arrangements, and sanctions work to insure compliance.

2. Resource degradation in the developing countries, while incorrectly attributed to "common property systems" intrinsically, actually originates in the dissolution of local-level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable. Natural resource deterioration is also occurring widely outside the boundaries of common property systems, under private property and state property regimes.

3. When local-level institutional arrangements were undermined or destroyed, the erstwhile common property regimes gradually converted into open access in which the rule of capture drove each to get as much as possible before others did. While this has been referred to as the "tragedy of the commons" it is, in reality, the "tragedy of open access." The dissolution of traditional local institutional arrangements has not been followed by the establishment of more effective institutions, and national governments in most developing countries have not adequately substituted for these former resource management regimes.

4. Development assistance for agriculture, environmental protection and natural resource management will succeed only if programs and projects become more concerned with the people using natural resources, rather than primarily preoccupied with the particular commodities around which projects have often been organized. That is, projects must be conceived less as "livestock projects" or "fuelwood projects" or "water projects" and focus instead on the social actors who are the users and the producers of these commodities and whose very livelihood depends upon livestock, or fuelwood, or water points.

5. Natural resource projects in the developing countries that do not actively incorporate the local users will ultimately fail. The notion that national (or even regional) governments in the developing countries can effectively manage local natural resources is largely without empirical (historical) support.

6. Interventions aiming at sustainable agricultural development must explicitly address the social arrangements among people as they interact with each other and with the natural resource base and help build up forms of social organization conducive to sustainable productive use of natural resources.

7. An essential ingredient in program and project formulation and implementation Is the system of incentives and sanctions for influencing the individual behaviors of those who live in the local area, and who depend upon the natural resource in question.

ACKNOWLEDGEMENT

An earlier version of this paper was presented at the World Bank's Ninth Agricultural Symposium, January 10-11, 1989, Washington, D.C. We are grateful to Ajit Banerjee, Orhan Baykal, John Cleave, James Coates, Cornells de Haan, Gershon Feder, Richard Grimshaw, Scott Guggenheim, Jeffrey Lewis, Katherine Marshall, Augusta Molnar, Michel Petit, Raymond Rowe, Poul Sihm, and Jeremy Warford for discussions about — or comments on -- this work.

Table of Contents

		Page
I.	INTRODUCTIONS THE GROWING INTEREST IN COMMON PROPERTY	1
II.	PROPERTY ISSUES AND RESOURCE MANAGEMENT REGIMES	5
	A. Property Concepts	5
	(1) State Property Regimes	11
	(2) Private Property Regimes	12
	(3) Common Property Regimes	15
	(4) Open Access Regimes	19
	B. Environment, Resource Management and Property Regimes	20
III.	PROJECT STRATEGIES AND RESOURCE MANAGEMENT	27
	A. Project Approaches and Experiences	27
	B. Project Lessons	49
IV.	AN AGENDA FOR ACTIONS BUILDING RURAL MANAGERIAL CAPACITY	55
	NOTES	61
	BIBLIOGRAPHY	61

I. INTRODUCTION: THE GROWING INTEREST IN COMMON PROPERTY

The common property regime for managing natural resources is frequently misunderstood. Many planners or other development administrators observe a situation in which there is no management regime in place and conclude that it is a situation of "common property." They may even cite the logically contradictory aphorism that "everybody's property is nobody's property." When resource degradation becomes obvious, this will seem to corroborate the "inevitable tragedy of the commons" and the misconstrued picture is complete.

This inadequate diagnosis is very serious in its consequences since it further invites inappropriate policy recommendations and misguided operational decisions.

The topic of common property natural resources — and the tenurial regimes that come to be regarded as suitable alternatives for the purposes of accelerated growth — is critical to the practical work on development projects, primarily in agriculture, forestry, or fisheries. The job of designing or appraising such projects is a matter of complex craftsmanship. Central to this process are not only the technical and financial skills, but also a conceptual understanding of the socio-economic and cultural fabric within which individuals use and/or abuse their ecosystem. We deal in this paper precisely with such conceptual Issues about property regimes, attempting to shed some light on several difficult and often-controversial questions embedded in the art and craft of purposive development Interventions.

By way of introduction, it seems useful to point out the four primary reasons why the present paper has been prepared.

First, virtually every Bank--assisted project must inevitably deal,, explicitly or implicitly, with the economic and sociological question of tenurial systems over natural resources. Relatively often, Bank-assisted intervention induces a change in property regimes. Bank staff make judgments and reach decisions about maintaining, reinforcing, or changing a variety of property regimes. For example, decisions are taken to promote either states or group property regimes over a project-financed natural resource, or about privatizing a particular resource. Additionally, decisions might be taken about a mix of state ownership with group usufruct (use) rights. Further, by the very nature of their work, Bank staff continuously need to make a series of implicit and explicit assumptions about, the possible chain of consequences of projects which promote modifications in property regimes. Thus, much project work requires conceptual clarity about what those types of property regimes are, and how they work.

Second, environmental policy issues have moved up on the development agenda in recent years, In agriculture, the core of environmental concern is natural resources management. Recent project preparation work in the Bank for livestock and natural resource projects in Africa and Asia is creatively experimenting with new approaches to resource management. However, as any agriculturalist knows, no-one can recommend, invent, or impose resource management regimes that preclude any human use of the ecosystem. The ability to use — productively and sustainably — the ecosystem depends critically on the social organization forms and management patterns at work under one or another property regime — whether common property, state property, individual property, or some combination thereof. Hence, environmental policy reasons are another key motive for renewed attention to property regimes over natural resources.

Third, we would note the recent concerns with sustainable development, a notion that goes beyond environmental concerns as such, and speaks to the full array of socio-economic organization in a country. The establishment and strengthening of institutional arrangements can be essential for ensuring sustainable development and thus protecting the effectiveness of development investments and their stream of benefits.

Finally, common property resource management has recently become the subject of careful study by a number of social scientists -- economists, sociologists, anthropologists, social geographers, historians, and political scientists. We intend here to summarize some key findings of these recent investigations for their relevance to Bank project and policy work, as well as to the work of borrowing agencies. In particular, a research panel and conference organized by the U.S. Board on Science and Technology for International Development (of the National Research Council/National Academy of Sciences) addressed issues of common property resource management in the developing countries. This work has helped to dispel some of the myths, confusions, and exaggerations that have gained currency under the "tragedy of the commons" allegory. The current paper does not break new ground in this matter, but rather synthesizes recent research findings regarding common property.

In the following section we give special treatment to issues of property rights in natural resource management. The discussion will concern four possible management regimes (state property, private property, common property, and open access). We will then turn to a discussion of project strategies and resource management, drawing particularly on Bank project experience in livestock, forestry, and watershed protection. We will conclude with an agenda for action in natural resources, emphasizing the rehabilitation of rural managerial capacity.

II. PROPERTY ISSUES AND RESOURCE MANAGEMENT REGIMES

A. PROPERTY CONCEPTS

A resource regime is a structure of rights and duties characterizing the relationship of individuals to one another with respect to that particular resource. Sets of institutional arrangements are continually established to define the property regime over land and related natural resources — whether that regime be one we would call state property, private (individual) property, or one of common property. These institutional arrangements define (or locate) one individual vis-a-vis others, both within the group (if there is one), and with individuals outside the group. We can define property relations between two or more individuals (or groups) by stating that one party has an interest that is protected by a right only when all others have a duty. It is essential to understand that property is not an object such as land, but is rather a right to a benefit stream that is only as secure as the duty of all others to respect the conditions that protect that stream. When one has a right one has the expectation in both the law and in practice that their claims will be respected by those with duty.

Before defining several main types of property regimes over various natural resources, it is useful to recall that the recent interest in the nature and status of common property was triggered not by academic concerns, but rather by the practical problems faced in development interventions. The development community has gradually come to realize that it will not be successful in addressing resource degradation at the local level so long as the very nature of property and authority systems over natural resources are seriously misunderstood in policy formulation and in the design of donor-assistance programs. In this context, common property regimes have attracted considerable analysis and debate, with both researchers and development practitioners distancing themselves more and more from the stereotype of the "tragedy of the commons."

Our primary purpose here is to challenge the fallacy of what has been passing as received doctrine about group owned/managed natural resources in the developing world. Among these regimes, common property carries the false and misplaced burden of "inevitable" resource degradation that instead has to be causally attributed to situations of open access. At the same time, we note that widespread forms and embodiments of a common property regime -— a small-scale community irrigation scheme — are rarely recognized as representing the essence of common property.

For some time now, Hardin's allegory of the "tragedy" has had remarkable currency among researchers and development practitioners. Not only has it become the dominant paradigm within which social scientists assess natural resource issues, but it appears explicitly and implicitly in the formulation of many programs and projects and in other beliefs and prejudices derived from it. Unfortunately, its power as a metaphor is not matched by its capacity for aiding our understanding of resource management regimes. By confusing an open access regime (a free-for-all) with a common property regime (in which group size and behavioral rules are specified) the metaphor denies the very possibility for resource users to act together and institute checks and balances, rules and sanctions, for their own interaction within a given environment.

The Hardin metaphor is not only socially and culturally simplistic, it is historically false. In practice, it deflects analytical attention away from the actual socio-organizational arrangements able to overcome resource degradation and make common property regimes viable. Planners with incomplete knowledge of tenurial differences and systems of customary rights may well attribute resource degradation to an assumed — but not necessarily existing — regime of "common property." They will then often be led to reason that if only private property rights could be established to replace the "commons" the problem would be solved. Yet when resource degradation is observed on private lands -- soil erosion, water pollution — the cause is assumed not to lie with the property structure at all, but is attributed, instead, to unduly high rates of time preference on the part of the owner, or some incentive problem that can be rectified with taxes or bribes. This asymmetry of logic — blaming the absence of private property in one instance, and slipping to alternative causal explanations when private property is present — obscures rather than clarifies the real issues involved.

Resource degradation in the developing countries, while incorrectly attributed intrinsically to "common property systems", actually originates in the dissolution of local-level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable. The dissolution of community based institutional arrangements often arose from a combination of interference by powerful rulers at some remove from the village and by colonial administrations, and the rise of the nation state. The dissolution of common property institutions has also been a result of the socio-economic differentiation and growing stratification processes within communities that initially were much more homogeneous. With differentiation, the similarity and convergence in members' interests gradually gave way to increased divergence of interests and unequal concentration of power. This, in turn, enabled the more powerful families to press for exclusionary use and de facto appropriation of common resources, gradually subverting and eroding the corporate communal institutional arrangements.[2] After independence, however, the ascending national governments in most developing countries have not created a working alternative to these former community-based resource management regimes. But, natural resource deterioration is occurring not only on lands formerly under common property systems, but also quite widely outside their boundaries under private property and state property regimes.

Another conviction that warrants re-examination is the naive belief that only national governments can solve resource degradation. Individuals with this conviction will observe resource degradation and conclude that the answer lies in nationalization of the resource to bring it under more "scientific" management. They propose to create more government control so as to replace the decision-making authority of the resource users themselves. This fallacy is further compounded by equating government with <u>central</u> government, and thus overlooking the potential for various <u>local</u> authority systems and suitable forms of user organizations.

Technical assistance for sustainable development requires consistency of logic and concepts, not ethnocentric bias to one particular cultural norm, or to an ideological conviction that sees ultimate truth in the centralized control of a nation's natural resources. The development community must begin to address concepts and logic pertinent to the management of common property regimes in the developing countries in a manner sensitive to local cultures, yet careful not to fetishize these cultures into seeing them as intractable obstacles to change.

The issue is of undisputed importance in the African context where sub-Saharan pastoral/nomad or semi-nomad populations are well-known users of grazing lands managed under non-private conditions. Moreover, throughout the rest of Africa much farming occurs on lands that are not free-hold in nature. Such resource regimes are not confined to Africa. Recent research by N.S. Jodha in India indicates that for 21 dry tropical districts over 7 states, between 84 and 100 percent of the poor households relied on non-private lands for '...food, fuel, fodder, and fibre items [Jodha, 1986, p. 1172].' But even some 10 to 24 percent of the richer households in his study areas made use of such lands for pond silt to enrich their fields, and for timber. Thus, this vast domain of non-private land in the tropics is a subsistence source for many families. Yet it is these lands that are often the target for privatization efforts that deprive the poorest segments of access to the means of life. Indeed, Jodha's research indicates that the non-private lands in India have shrunk by 26-63 percent over the past thirty years, and that between 49-86 percent of these privatized lands ended up under the control of the better-off segments of society. Indeed, the process of privatization has often provided an impetus to, and was accompanied by, a faster rate of destruction of the native vegetation [Jodha, 1986].

Similarly, the shift from customary common property regimes to state ownership has often entailed similar adverse effects. In Nepal for instance, nationalization was the major facilitator of accelerated resource degradation on village forest lands [Bromley and Chapagain, 1984]. Evidence is thus accumulating that the promotion of privatization — or nationalization — carries with it the risk of depriving large portions of the population of their livelihood without delivering on the expected promise of more effective resource management. This makes it more critical to understand the essential connection between property regimes and resource management, and to conceptually locate the common property regime in a continuum between the free-for-all of an open access regime and complete individualization that is the essence of a private property regime.

Several recent events, including new findings from socio-economic research in various developing countries, give cause for optimism in the efficacy of common property regimes under well-defined circumstances. The above-mentioned panel of the U.S. National Academy of Sciences has produced an impressive volume reporting many instances of successful common property regimes in a variety of countries. The volume also documents the ways in which various pressures have caused the dissolution of particular resource management regimes [National Academy of Sciences, 1986]. The results of this research hold promise for a clearer design and implementation strategy for agricultural projects that deal with such natural resources. Another recent book, Village Republics, documents the successful collective management of irrigation systems under common property in a number of South Indian villages [Wade, 1988]. Along similar lines, the volume The Question of the Commons provides additional evidence of the confusion sown by the fallacy of "inevitable" degradation of collectively managed resources [McCay and Acheson, 1988]. The authors of this volume make clear that common property regimes survive and thrive. Finally, a well-selected anthology, Whose Trees? Proprietary Dimensions of Forestry, documents the property and/or usufruct rights on both land and trees that are pertinent for alternative reforestation approaches in the developing countries [Fortmann and Bruce, 1988]. Such socio-anthropological and economic research, plus a sense that the development community is increasingly open to innovative ideas about resource management regimes, suggest optimism that the simplistic answers of the recent past — when the routine policy "solution" to resource management problems was privatization (individual property) or nationalization (state property) —are now being reconsidered.

For most purposes it is sufficient to consider four possible resource regimes:

(1) state property regimes;
(2) private property regimes;
(3) common property regimes; and
(4) non-property regimes (open access).

Each will be considered in turn, and vis-a-vis the common property regime.

(1) State Property Regimes

In a state property regime, ownership and control over use rests in the hands of the state. Individuals and groups may be able to make use of the resources, but only at the forbearance of the state. National (or state) forests, national (or state) parks, and military reservations are examples of state property regimes. Shifts from state property to other types, or vice versa, are possible. For instance, the 1957 nationalization of Nepal's village forests by the government converted a common property regime at the village level into a state property regime.[3] The state may either directly manage the use of state-owned natural resources through government agencies or lease them to groups or individuals who are thus given usufruct rights over such resources for a specified period of time. The "tree growing associations" created experimentally in West Bengal (and elsewhere in India) consist of groups of landless or marginal farmers who are given a block of marginal public land for tree planting are examples. The members are not granted titles in land, but the group is given usufruct rights on the land and ownership rights of its produce [Cernea, 1985].

(2) Private Property Regimes

The most familiar property regime is that of private property. While most think of private property as individual property, note that all corporate property is private property, yet it is administered by a group. Also recall the pervasive duties that attend the private control of land and related resources; few "owners" are entirely free to do as they wish with such assets.

A few comments on private property seem appropriate at this time. Private property is the legally and socially sanctioned ability to exclude others — it allows the fortunate owner to force others to go elsewhere. However, those who see all ultimate wisdom in private property alone must answer for several phenomena. First, much of the world's landlessness is not attributable to an absolute physical scarcity of land but rather to the concentration of its ownership in the hands of a few powerful families. This is especially prevalent in large parts of Latin America. Second, we are often told that private property leads to the "highest and best use of land." With large segments of Latin America's best agricultural land devoted to cattle ranching — while food crops exist on poorer lands — skeptics should be excused if they challenge that particular truth. Private property is not necessarily — as Proudhon put it — "theft", but a good deal of theft has ended up as private property — especially in the western world where European colonizers appropriated vast terrain inhabited by tribal peoples.

The best land in most settings has already been privatized and the worst has been left in the "public domain" either as state property, as common property (res communis), or as open access (res nullius) . It is not legitimate to ask of common property regimes that they manage highly variable and low-productivity resources, and also to adapt and adjust to severe internal and external pressures when conditions beyond the bounds of that common property regime preclude the adaptation to those internal and external pressures. That is, the "internal pressure" of population growth may be impossible to resolve if traditional adaptation mechanism -- hiving off for instance — are now precluded by increased population growth beyond the confines of the common property regime under study.

Likewise, if private property and associated fences prevent the traditional movements of a people and their livestock it is hardly legitimate to blame them and their property regime. Private property regimes appear to be stable and adaptive because they have the social and legal sanction to exclude excess population, and effectively to resist — through the power of the state — unwanted intrusions. These powers have been eroded for common property regimes. To see the exclusionary aspect of private property, recall the effects of primogeniture. The dispossession of younger sons (to say nothing of all daughters) is regarded as a costless social process and therefore it looks as though private property is robust and adaptable; it "works." Private property in such a setting may "work" for the oldest son; but those with no rights in the estate may be harder to convince.

Common property is in essence "private" property for the group and in that sense it is a group decision regarding who shall be excluded. But when options for gainful and promising exclusion of excess population have been destroyed by surrounding political, cultural, or economic events, then those engaged in the joint use of a resource are left with no option but to eat into their capital. However to blame this situation on their failure to create private property is absurd. Common property is <u>not</u> the free-for-all of open access resources. Individuals have rights and obligations in situations of common (non-individual) property, just as in private individual property situations. The difference between private and common property is not to be found in the nature of the rights and duties as much as it is in the number to which inclusion or exclusion applies. The difference is also in the unwillingness of the group to evict redundant individuals when that eviction will almost certainly relegate the evicted to starvation. In a sense, the group agrees to lower its own standard of living rather than to single out particular members for disinheritance.

Some may say that such lands must be "privatized" in order to save them. Since there is no clear evidence that privatization reduces land exploitation when other economic incentives are left unaltered, we challenge this simplistic tenurial explanation of economic behavior. Moreover, since privatization will simply mean exclusion and the shifting of population elsewhere (to city slums or to other common property areas) the appeal of privatization as a "solution" is suspect.

(3) Common Property Regimes

The third regime is the common property regime (*res communis*). First, note that common property represents private property for the group (since all others are excluded from use and decision making), and that individuals have rights (*and duties*) in a common property regime [Ciriacy-Wantrup and Bishop, 1975]. In one important sense then, common property has something very much in common with private property — exclusion of non-owners; common property is corporate group property. The property-owning groups vary in nature, size, and internal structure across a broad spectrum, but they are social units with definite membership and boundaries, with certain common interests, with at least some interaction among members, with some common cultural norms, and often their own endogenous authority systems. Tribal groups or subgroups, or subvillages, neighborhoods, small transhumant groups, kin systems or extended families are all possible examples. These groupings hold customary ownership of certain natural resources such as farm land, grazing land, and water sources.

Corporate group property regimes are not incompatible with distinct individual use of one or another segment of the resources held under common property. For instance, in customary tenure systems over much of Africa the ownership of certain farmland may be vested in a group, and the group's leaders then allocate portions of the land to various individuals or families. As long as those individuals cultivate "their" plot, no other person has the right to use it or to benefit from its produce. But note that the cultivator holds use rights only (usufruct) and is unable to alienate or transfer either the ownership or the use of that land to another individual. Once the current user ceases to put it to good use the land reverts to the jurisdiction of the corporate ownership of the group.

Note that common property of this kind is fundamentally different from the land-based property regimes in collective farms or agricultural cooperatives in the centrally planned socialist economies of Eastern Europe and the Soviet Union. Land in these entities does not belong to the members of the collective as common property. Rather, the land belongs to the state. The profound restructuring now going on within Soviet agriculture, (similar in some respects to what has happened in China) reveals the adverse consequences of state property, including its effects on management patterns for natural resources that are not common (or group) property. The most telling aspect is restrictions over the products of labor applied to those resources.

Contrary to such state ownership regimes, the customary common property regimes in the developing world are characterized by group/corporate ownership with management authority vested in the respective group or its leaders. In many developing countries, some of the resources in the public domain (that is, non-private land) are managed as common property, some are managed by the public sector as state property, and some are not managed at all but are, instead, open access. It is well to identify the differences among these regimes, and to formulate programs accordingly.

Let us mention, if only briefly, the incentives that exist in a common property regime. This is important in view of the fact that a widespread fallacy would have us believe that the only incentive is to pillage and plunder natural resources. To the contrary, the correct understanding defines a common property regime by group ownership in which the behaviors of all members of the group are subject to accepted rules and open for all to see. It is not stretching the truth to say that in many cultures conformity with group norms at the local level is an effective sanction against antisocial behavior. A viable common property regime thus has a built-in structure of economic and non-economic incentives that encourages compliance with existing conventions and institutions. Unfortunately, in many settings, those sanctions and incentives have become inoperative —- or dysfunctional — largely because of pressures and forces beyond the control of the group, or because of internal processes that the groups wasn't able to master. But that does not undermine the essential point that in a social setting in which individual conformity to group norms is the dominant ethic, common property regimes have a cultural context compatible and indeed vital for effective performance.

Essential for any property regime is an authority system able to ensure that the expectations of rights holders are met. Compliance, protected and reinforced by an authority system, is a necessary condition for the viability of any property regime. Private property would be nothing without the requisite authority system that makes certain the rights and duties are adhered to. The same requirements exists for common property. When the authority system breaks down — for whatever reason — then the management or self-management of resource use cannot be exercised any longer and, for all practical purposes, common property (res communis) degenerates into open access (res nullius).

It is not just the property regime (joint possession) alone that explains compliance and "wise" natural resource use. The common property regime as a system is broader than the set of possession entitlements that is its core; it includes also use rights, exchange rights, distribution entitlements, a management subsystem, and authority instruments as means of management. When any part of this complex system is undermined or annihilated, the entire system malfunctions up to a degree at which it ceases to be what it was. It is indeed the management subsystem, with its authority mechanisms and ability to enforce operating rules and system-maintenance provisions that insures that the particular property regime is adhered to, and that its systemic integrity (or system equilibrium) is well protected, thus enabling it to operate in a well balanced manner.

This, in principle, is not different from the ways in which the other property regimes operate as systems. For instance, in private property regimes the owner/manager also relies on the authority of the state and its coercive power to assure compliance and to prevent intrusion by non-owners. If this (or other) authority would not be exercised, the private property regime too would collapse and would become open access.

In common property regimes two problems may arise. The first is that a breakdown in compliance by co-owners may be difficult to prevent because this will entail loss of opportunity arising from changes elsewhere in the economy. If spreading privatization precludes seasonal adaptation to fluctuating resource conditions then overuse of a local resource may be necessary by members of the group. Secondly, if the modern state holds common property in low esteem — that is, if the state disregards the interests of those segments of the population largely dependent upon common property resources — then external threats to common property will not receive the same governmental response as would a threat to private property. The willingness of the modern state to legitimize and protect different property regimes is partly explained by the state's perception of the importance of the citizens holding different types of property rights. If pastoralists are regarded as politically marginal -- a common occurence in many parts of the world — then the property regimes central to pastoralism will be only indifferently protected against threat from others. If those threatening pastoralist property regimes — sedentary agriculturalists, for example — happen to enjoy more favor from the state, then the protection of grasslands under common property against encroachments for cultivation will be haphazard at best.

(4) Open Access Regimes

Finally we have the open access situation in which there is no property (*res nullius*). Because there are no property rights in an open access situation, it is logically inconsistent to assert — as many often do — that "everybody's property is nobody's property." It can only be said that "everybody's access is nobody's property." Whether it is a lake fishery, grazing forage, or fuelwood, a resource under an open access regime will belong to the party to first exercise control over it. The investment in (or improvement of) natural resources under open access regimes must first focus on this institutional dimension. If property and management arrangements are not determined, and if the investment is in the form of a capital asset such as improved tree species or range revegetation, the institutional vacuum of open access insures that use rates will eventually deplete the asset.

Open access results from the absence — or the breakdown —- of a management and authority system whose very purpose was to introduce and enforce a set of norms of behavior among participants with respect to the natural resource. When valuable natural resources are available to the first party to effect capture, it is either because those natural resources have never before been incorporated into a regulated social system, or because they have become open access resources through institutional failures that have undermined former collective or private property/management regimes.

B. ENVIRONMENT. RESOURCE MANAGEMENT AND PROPERTY REGIMES

A major distinction among the first three types of resource regimes rests with the decision-making process that goes with the respective property regimes. Specifically, the private property regime is usually regarded as one in which a single owner can decide what shall be done. Those inclined to regard private property as the most efficient institutional form for resource management and environmental protection will usually have this in mind. They would point out that even a well-organized common property regime still requires consensus among all of the co-owners before certain actions can be taken. It is this transaction cost that will be blamed for the cumbersome nature of common property regimes — even assuming that the collective has managed to solve the problems of group size and free riding. We hasten to add, however, that the very notion of "transaction costs" is culturally specific ■— one person's tedious meeting (a cost) may be another's most enjoyable activity (a benefit).

This specific difference between a common property regime and an open access regime can now be made clear. In a situation of open access each potential user has complete autonomy to use the resource since no-one has the legal ability to keep any potential user out. The natural resource is subject to the rule of capture and belongs to no-one until it is in someone's physical possession. There are no property rights in this regime, there is only possession. That is, property -- a social contract that defines an individual and an object of value vis-a-vis all other individuals — cannot exist when an individual must physically capture the object before he/she can exercise effective control. Having property means not having to stand guard over something; the social recognition that gives property its content means that others have a duty to respect the owner's interest in the thing owned.[4]

Some resource degradation arises from population growth within the relevant social unit. The entailed increase in the use of the given resource, though exceeding the ability of the renewable resource to sustain its annual yield, cannot be stopped because of the nominal "right" of every villager to take what he/she needs to survive. As a village grows, and therefore as the number of rights holders grows apace, the total demands on the physical environment and its resources will ultimately exceed the rate of natural regeneration. Failure to deal appropriately with the change in the size of the group affects the equilibrium and integrity of the system. If, for instance, the village believes that all of this larger population has a right to take what is needed, in a situation when the supply remains constant, then it is obvious that very soon no villager will be able to satisfy his "right" with anything other than what he/she can capture by being there first. A common property regime for the group becomes an open access regime for those within the group.

To improve the situation requires a reduction in total offtake entitlement (and in actual offtake) until the resource base can generate sufficient annual yield to meet the needs of the new (lower) harvesting, plus allow for some continued regeneration. The obvious problem is to meet the reduced needs of those deemed to be excessive claimants on the resource base until that regenerative capacity is restored. Alternatively, if it is determined that the given resource will never be able to sustain the increased level of demands to be placed on it, then there must be some capital investment to augment it and its output. But capital investment in the absence of a prior institutional solution will simply assure that the new asset is squandered as the old one was.

Hence with open access regimes the necessary precondition for any successful development assistance effort is that the property regime be converted away from open access. Whether it goes to private individual property, to common property, or to state property is a policy choice that will have to be made on the basis of the conditions at hand. Regardless of which specific regime is chosen, it will require work to establish a new set of rules. Those rules must be made known to all pertinent individuals, and new management patterns and social authority systems must be established to assure that those new rules are followed.

As regards the comparative advantage of one institutional choice over another, we point out that to bring resources under a regime of individualized private property in the developing countries will often conflict with prevailing socio-cultural values. Depending on the nature of the asset — and on the socio-cultural characteristics of its users — we suggest that it may sometimes be more appropriate to consider to restore a common property regime than to attempt to promote thoroughgoing privatization. Recall also that a common property regime at the village or subvillage (neighborhood) level constitutes <u>private property</u> for the group, with the attendant co-equal rights and duties for the individual members.

Obviously, converting open access situations to common property systems is a complex process that cannot be done by administrative decree. When such a process is attempted, the design of the change process must take into account a number of general variables and their local context. These variables pertain both to the physical environment and to the existing socio-cultural systems. The National Academy of Sciences volume suggests that there are at least four main sets of variables that are critical for such a process and must be meticulously considered if this process is to be deliberately pursued. They are:

(1) the nature of the resource itself?
(2) the supply-demand conditions of the resource?
(3) the characteristics of the lasers of the resource? and
(4) the characteristics of the legal and political environment in which the users reside.

Each one of these sets of variables must be detailed and examined in a given context, to determine at which specific values these variables would lend themselves, in a higher or lesser degree, to such a profound conversion.

With respect to the nature of the resource, if open access is to be converted to an effective common property regime, then the existence of clear resource boundaries, small (manageable) resource size and scope, and accessible information about the condition of the resource are critical. With respect to supply and demand conditions, the resource's relative scarcity vis-a-vis the demand placed on it will be critical, as will situations in which some users have a sufficiently large stake in the careful management of the resource. With respect ,to user characteristics, the conversion from open access to common property will be facilitated in those instances in which the size of the user group is small, the users are reasonably homogeneous in important socio-economic characteristics, and the users reside in close proximity to the resource. Finally, it is important whether local users are prevented by the government from exercising local initiatives regarding management, whether they have prior experience with organizations for solving similar problems, and whether there are overlapping institutional arrangements and organizations that can complement the nascent resource management effort.

The introduction of a state property regime may sometimes be proposed to address the resource degradation problem. Indeed, a striking feature of the last two decades has been the rise of national government formal authority on the management of local natural resources through central regulatory policies, new legal frameworks, project financing, and direct administration [Korten, 1986]. However, most analysts agree that this shift in the locus of control has not resulted in effective natural resource management. It has, instead, simply weakened local customary regimes. We are not optimistic about the prospects for many state property regimes [Bromley, 1986].

The appearance of environmental management created through the establishment of governmental agencies, and the aura of coherent policy by issuance of decrees prohibiting entry to — and harvesting from — state property, has led to continued degradation of resources under the tolerant eye of government agencies. If the current degradation of state lands is to be arrested it will require that current practices of indifferent enforcement be corrected [Thomson, 1977], and that staffing levels and incentives be sufficient to administer and manage that domain which the government has taken unto itself. Unfortunately, most state property regimes are examples of the state's "reach exceeding its grasp." Many states have taken on far more resource management authority than they can be expected to carry out effectively. More critically, it sets the government against the peasant when, in fact, successful resource management requires the opposite. This is confirmed also by the structural changes that appear to be promoted since 1987 in Soviet agriculture. The striking systemic failures of nationalized land and state-centralized management control may well hold one of the most important development lessons of the last half-century.

III. PROJECT STRATEGIES AND RESOURCE MANAGEMENT

A. PROJECT APPROACHES AND EXPERIENCES

There are many illustrations of what happens when projects proceed in the absence of a clear understanding of the sociological context and institutional arrangements (including property rights) out on the ground. A recent Bank review of livestock project experience notes the relevance of misunderstood institutional factors in explaining the rather dismal record in that sector. The decline in Bank lending for livestock projects, and the general unease within the development community over interventions in the livestock sector, suggest that much work remains to be done before donor agencies could confidently move forward on livestock lending. The indifferent success of social forestry projects is further evidence of the difficulties still to be faced.

Problems arising from such projects occur not simply from a failure to understand the institutional dimensions of economic behavior at the village level, though this is undoubtedly important. Rather, the more serious failure occurs because of ethnocentric analysis that is unable to connect intellectually with the world into which such projects are introduced. The absence of sociological analysis as part of project preparation work, and the insufficient consultation of local people lead, time and again, to plans and projects that are unrealistic and unsustainable beyond disbursement completion. This was the hindsight conclusion, forcefully expressed, reached by the performance audit report on Somalia's Trans-Juba Livestock Project. There, it is stated that :

> By all accounts, little was definitely known at the time of appraisal about the (population's) way of

> life, grazing rights, motivation, etc. Only the scantiest literature exists on these matters and not even that was examined either at project preparation or appraisal, since neither team had included a social anthropologist. Therefore it would have been wiser not to raise Government's expectations by devising such a complex project but to phase it, in shorter time slices and fewer components in each slice. The outcome may well have been not only a more gradual and less daunting buildup of staff, skills and equipment, but also the kind of flexibility that, for all intentions to the contrary, simply cannot be built into a single project with necessarily set objectives...The lack of a solid data base at the time of appraisal. . .would also have suggested a far more cautious approach, further underlined by the lack of local managerial expertise...recognized by the preparation and appraisal missions, and not disputed by the Borrower [Somalia: Trans-Juba Livestock Project, PPAR, 1983, p. 10].

Such problems are not confined to external appraisers. The lack of adequate sociological understanding and competence is often common among local government officials and technical specialists, who mistakenly assume that simply belonging to the local culture automatically gives them the skills needed to manipulate and change it. For instance, in the First Livestock Development Project in Botswana the government agency in charge based its approach on the belief (faith) that "commercial" ranches would fix a very complex local problem and would modernize animal husbandry. By failing to understand that the owners of the largest herds were least likely to take an abiding interest in a new kind of enterprise with an unclear (to them) tenure basis and uncertain outcome of ownership arrangements, the project committed a serious mistake. The common fallacy of confusing the <u>establishment</u> of ranches with ensuring their <u>long-run sustainability and viability</u> was again manifest. The Tribal Grazing Land Policy of 1975 simply compounded the problem. Tribal lands were used to establish large ranches, while also assuring those not involved in the ranches that adequate "communal" land would remain available for their needs. Now district Land Boards replaced tribal chiefs in the role of allocating grazing use rights but the Land Boards were ill-equipped to develop meaningful land-use plans. More bureaucrats and committees became involved, all attempting to do what the now-defunct village councils had previously done. There were concerns about the equity implications of the allocations that emanated from these new bodies. The central government usurped, as we have seen again and again throughout history, local prerogatives. The project introduced land zoning arrangements that were quite unrelated to existing agricultural practices. A misallocation between communal and commercial lands left too little of the latter, and so commercial ranchers continued to use communal areas at their whim. The failures of Botswana livestock interventions have been adequately analyzed subsequently, when a follow up project was designed. [Botswana: SAR for the National Land Management and Livestock Project, 1985].

Project appraisal reports will often contain rather specific provisions regarding the physical components, but become vague and incomplete when addressing, if at all, the development of patterns of social interaction and the establishment of organizations and group structures at the local level. An example of this is found in the Thailand Northern Agricultural Development Project. Here village woodlots were to be established and operated by the Government's Watershed Management Division "...until the villagers are in a position to assume responsibility for them "[Thailand: SAR for the Northern Agricultural Development Project, 1979]." This vague and fleeting reference not only failed to articulate exactly how this was to happen and to be supported, and what were the anticipated tenurial regimes over land and trees, but there was no indication as to how it will be determined that villagers are finally "ready". Moreover, it suggested that official administration of the woodlots will, in all probability, preclude the villagers from ever acquiring the management skills requisite to a determination that they are, indeed, "ready." If experience with other "turnkey" gifts is any teacher, we should not be surprised if things do not work out as planned. As the same project report indicated, the administration's highly centralized administrative structure and decision-making processes, its traditional reluctance to delegate authority to local levels, and the lack of coordination between line agencies operating in the field have impaired its ability to perceive and respond to the real needs of the rural poor.

There are numerous instances in which traditional rights in land are modified in the interest of the national government? we note another example from Thailand. The King has traditionally been regarded as the supreme authority in which ownership of all land was vested, while villagers were usually able to make use of land as the need arose. With a low ratio of people to land — and with subsistence agriculture being the dominant pursuit — the system was able to respond to population growth. Recently, however, this system has put increasing and damaging pressure on the resource base. This has led the authorities to solidify their control over "forest reserves", and to introduce a system that would "...control land use, determine ownership and <u>generate revenues from land</u> "(emphasis added) through strengthening the legal framework for private land ownership [Thailand: SAR for the Land Titling Project, 1984, p. 1]. The Government gave itself the power of land titling through the 1954 Land Code, and has set about recently to undertake a massive land titling program. The rationale was that the prior situation in the status of land has led to

> . . .inappropriate land use classification, increasing numbers of landless, increasing tenancy especially in rural areas, illegal cultivation in government reserves, lack of secure tenure for many land occupiers who have possessory rights, a high rate of squatter settlement in rural and urban areas, and increasing concern about soil erosion and general environmental degradation as shown most dramatically by loss of forest cover in the mountainous regions and increased flooding in the plains [Thailand: Staff Appraisal Report for the Land Titling Project, 1984, p. 2].

That so much bad could emanate from the mere absence of land titles, and — by implication — that corrective action can be so easily purchased by dint of mere titling, suggests an exaggeration, if not naivete, about the role of the full complex of institutional arrangements within which peasant agriculture operates. Of course security of land ownership is important; its impact has been documented in the case of Thailand by recent Bank-sponsored research [Feder, et. al., 1988]. We do not question the notion that clarification in land rights is helpful, but titling alone will hardly be sufficient to remove the problems that conceptually seem to have been attributed in the report to their absence.

There are encouraging signs that the problems engendered by the excessive centralization of state authority over natural resources are now becoming known. Some projects go to great detail in analyzing the local social structures, family systems and forms of social organization and attempt to obtain improved management of natural resources by strengthening these local structures rather than by inflating the authority of the state apparatus and agencies. For instance, in Morocco, the Middle Atlas Central Area Agriculture Development Project financed a set of activities whose purpose was to integrate and rationalize the use of forest, range and agricultural resources. Better social analysis during project preparation made it possible to design linkages between these activities and the population's forms of social organization. The project was to?

> ...use the traditional social structure as a framework for its implementation...Project activities would be planned at the level of extended families or tribes, taking into account all resources of the units (private and collective) . Project implementation would require continuous dialogue with the population and a reorganization of agricultural support services to emphasize proper coordination among local supporting services...A contractual arrangement between the social units and the technical services would define the actions and responsibilities of each participant, the management of the resources and the recovery of costs [Moroccos SAR for the Middle Atlas Central Area Agriculture Development Project, 1981, p. 17]."

Indeed, a major objective of the project was to develop adequate organizational arrangements for farmers' participation in the definition and execution of the project's activities. The existing tribal structure and village councils would mobilize and secure the compliance of individual farmers. For improved range management, the project put considerable authority and reliance upon local tribal councils (jemaa). The jemaa would identify rights holders, define project works on the range, define the grazing regulations including stocking rates and rotation schedules, issue grazing cards, and set the grazing fees. The jemaa also would be responsible for compliance, to be assisted in this by range and local authorities when necessary. The project intended to achieve this increased population involvement in the rational use and protection of natural resources by-creating

> ...an extension effort to explain the benefits of range management;.. implementing only range activities which have been agreed upon with the population;...assuring that the population has the means to comply with the regulations by increasing forage availability outside the rangeland and by creating forage reserves for seasonal or annual forage shortages...; and...providing the necessary means to control grazing (fences, the identification of animals, range police). Grazing regulations would be enforced at two levels. Overall grazing rates would be controlled by the range police to avoid collective breakdown of discipline. The enforcement of the repartition of overall stocking rates and rotation patterns among the members of each social unit would be the responsibility of the population. The definition of grazing rights,.. , the application of collective sanctions in case of overgrazing, and the required charge for grazing would assure that collective grazing land would no longer be considered as a free good, and that any transgression by one member would be at the direct cost of the other members of the tribe, thus providing the necessary incentive for self discipline, which is now lacking at the social unit level [Morocco: **SAR for** the Middle Atlas Central Area Agriculture Development Project, 1981, p. **29].**

One of the more successful Bank experiences with project induced changes in property regimes has been the Eastern Senegal Livestock Development Project. One of the authors of the present paper was on the appraisal team of that project and followed it up during implementation, and we believe that the experience accumulated in this project in converting an open access regime back to common property management deserves reflection and emulation.

The Senegal Livestock Development Project covered an area of about 1 million ha of grasslands in the eastern part of the country north of the Tambacounda-Dakar line. During the pre-appraisal/appraisal stages it was realized that this area was undergoing rapid resource degradation owing to excessive grazing, lack of protection, and the disregard of traditional property rights of local pastoralists by incoming herders from the more arid northern Ferlo region. The traditional authority systems of the eastern Senegal pastoralists had also been eroded by the interference of the central government and regional administration. A region of former common property had become an open access regime.

Not unusual for such situations, the project preparation/ feasibility report prepared by a foreign consulting firm, little attuned to the pastoralists' needs and social potential, proposed a project design based on converting only several small portions of the 1,000,000 ha area into fattening ranches to be owned and administered by the government or by private entrepreneurs. The remainder of the area -- approximately 80 percent — was to be abandoned. In other words, the larger area was to be left to further degradation under the open access regime.

The Bank's appraisal mission — consisting of staff with skills in animal husbandry, economics, and sociology -— considered but rejected the consultant's project design. The mission proposed, instead, the reclamation of the entire area from its status as open access and its conversion into a common property regime managed by pastoralists, to be grouped and organized into pastoral/grazing units by the new project.

Thus redesigned, the project became a combined social/ institutional and technical package and was approved and welcomed by Senegal's **borrowing** agency. The 1 million hectares were to be divided **among** groups of pastoralists, with the groups being constituted by the project's social-organizing staff along cultural/ethnic affinity lines. The social extension agents (incorporated by the appraisal mission into the project's provisions for staff and budget) went from zone to zone identifying 3, 4 or 5 neighboring settlements willing to associate themselves into a pastoral unit. The goals and proposed procedures for such units were carefully explained to the prospective members, who were given sufficient time to discuss among themselves whether or not such associations were desirable. When established, these associations selected their own leaders and management committees. To ensure legal protection of these associations and their rights vis-a-vis land, range and trees, at the Bank's suggestion the Government of Senegal defined the entire grazing area as a "pioneer zone". It also passed legislation granting to each grazing association long-term rights over segments averaging approximately 20,000 hectares each. This was intended to help legally define both group size and natural resource boundaries. The government also promised to use its authority, when needed, to support these associations against non-members, including intruders from the north, thus creating a mechanism to support the groups' exclusionary rights. The exception was the provision of delineated corridors for traditional transhumant herders.

During the first four years of the project some 53 grazing associations were established. Gradually the project created a network of wells, provided animal health services, and assisted in livestock marketing to encourage offtake. Most importantly, the project financed technical expert services to support the new social units in their improved management of the rangeland. A specialist team under the project carried out technical evaluation and mapping of the forage and water resources available within each pastoral association, and then proposed to each management committee a rational grazing plan.

The local-level authority structures, developed as part of the institutional arrangements creating the associations at the early stage of the project, increasingly assumed a managerial role and established a common property regime for managing the range. Use (abuse) by outsiders of the project area was effectively reduced, though it has not been completely eliminated, through vigilance on the part of the respective grazing associations backed up by the authority of the regional administration. The cattle remained, as expected, the private property of the participating families.

Among the factors that contributed to the impact of the project was the functional literacy program among pastoralists that by 1985 had included over 4,000 individuals in various short courses. The themes used by the training and extension component of the project were linked to the other project components — establishment of grazing associations, provision of animal health programs, etc. The interest elicited by this educational component improved people's receptivity to the project's motivational and organizational efforts that were so essential to the overall effectiveness of the project. The new grazing associations gradually introduced improvements in pasture utilization and quality. Credit was provided under the project for improved breeding stock and for supplementary feed. Continued provision of credit to a grazing association was conditional on full repayment by the group. The emphasis of credit programs shifted during implementation from breeding stock to the provision of larger amounts of short-term credit for feed and veterinary services. Credit recovery at project completion was 89 percent.

At the end of the project, the audit evaluation report concluded that:

> The project developed an innovative approach to the extremely difficult questions surrounding the arrangements for rational use of grazing resources in a situation of common ownership. In promoting pastoral groups throughout the project area, it has struck the right balance between taking sufficient initiative to stimulate the process of change and...on...encouraging self-reliance and active participation within the pastoral groups. In consequence, the groups hold out the promise of providing a sound basis for development in the area [Senegal: Eastern Senegal Livestock Development Project, OED, Project Performance Audit Report, 1986, p. 6].

The overall success of the project is attributable to a number of factors. The most important was the presence of a clearly conceptualized and effective operational strategy for building institutional and organizational structures at the local level as opposed to just a "technical package" devoid of sustaining social/institutional structures on the ground. This strategy was patiently but tenaciously carried out in genuine cooperation with the area population by an adequately designed, selected and trained project staff. Besides an effective project director, there was an excellent community development officer recruited from the area. His staff of about 30 social extension agents were also recruited from the local population. The staff were trained to use sociologically inspired methods for establishing the pastoral units. It is interesting to note that these methods were deliberately tested and refined during the Bank's appraisal and post-appraisal field missions. Specifically, a distinct post-appraisal mission was scheduled by the Bank for the express purpose of experimentally establishing the first two grazing associations so as to formulate and test a social methodology of identifying and creating such units, to be subsequently applied by the project staff. There was regular Bank supervision of the project — particularly in the early stages — and this carried over throughout the life of the project. In addition, rainfall conditions during project implementation, although somewhat below average, were quite favorable.

While the Audit Report does not regard the project as directly or easily replicable, in light of the particular or unique features that need to be considered in each location, it is clear that certain aspects of the project are universal in nature. The lesson derived by the independent evaluation report was that projects must

> ...attach pre-eminent importance from the start to active participation by members in the formation and development of their associations; and to develop a base for pasture management that is ecologically sound, is strongly rooted in existing social norms and behavior, and is financially beneficial both for the individual and the group as a whole. In short, pastoral development must not be seen principally as a technical issue but rather as a process of social and economic change that, to be sure, needs a sound technical base but which principally calls for motivation, training and participation of the pastoralists [Senegal: Eastern Senegal Livestock Development Project, OED, PPAR, 1986, p. 8]. (emphasis added).

Because this project addressed the difficult constraints of open access regimes on communal grazing areas, it represents the very essence of restoration of a <u>common</u>

property regime. The OED's audit report correctly recognized that the long-term sustainability of such regimes — which will protect the ecological sustainability of the natural resource managed by the social regime -— is the essential challenge in development. The report properly identifies the central ingredient in the viability of such regimes as that of the managerial and financial self-reliance of the pastoral groups. With that in mind, project administration (obtrusiveness, perhaps) was reduced sequentially as the groups became more competent — and more confident. This pattern was followed in the literacy, animal health, and credit components.

We would also call attention, nevertheless, to the inherent fragility of these innovative institutional arrangements. There is always the risk that new institutional arrangements will be undermined by various causes before they have become strong enough to withstand various external and internal pressure. Potential threats arise from (1) the improper management of the group's financial assets; (2) the logistic and cultural difficulties of the group of common "owners" when intrusion by non-members into its land must be prevented or repulsed; (3) the problem of each individual family's compliance with the rules and authority system of the association; and (4) the possibility that alternative organizations may challenge the right of the pastoral associations to manage their resources; in Senegal, such a threat may come from the Rural Councils instituted by the Government, or from the various bodies of the regional prefecture. Each of these possibilities would become more critical if general government economic policy were to place unnecessary stress on the embryonic local self-management structures, and the Eastern Senegal experience deserve to be further followed and analyzed in all these respects.

Earlier discussion has mentioned the strategic fallacy of usurping resource management prerogatives from the local communities and vesting such management prerogatives in administrative bodies or in outside economic agents. This strategy would not be inadequate if it actually improved resource management; unfortunately, this is too often not true. In the Ivory Coast, commercial loggers have long engaged in wanton high-grading of timber stocks, leaving only the lesser-valued timber to the local population, which often resorts to poaching and burning so as to clear plots for agriculture. As the better stocks have disappeared, the value of recent timber marketings has fallen, putting yet more pressure on the remaining stands to sustain export earnings. These practices have sometimes been legislated against, but only indifferently enforced. In fact, since independence the Government of the Ivory Coast has pursued a destructive course of action toward its forests in the effort to increase its foreign exchange earnings and tax revenues. As a results

> ...loggers continue to exploit the remaining forests, more or less uncontrolled, and farmers have followed roads developed for logging operations, establishing cocoa, coffee and food crops, with the widespread practice of "slash and burn" farming. Such intrusions have also begun in the classified forest reserves and national parks. Government now estimates that this process transforms about 0.4 million ha of unspoiled high forest per year. Were these trends to continue, Ivory Coast could become a net importer of timber before the end of the century [Ivory Coast: SAR for the Second Forestry Project, 1985, p. 2].

The report for this project continues by pointing to a persistent practice in renewable resource management — showing more interest in the symptoms of problems than in the root cause of those problems. We are told by the report that the continued degradation of forests poses scant ecological threat. However, it is reported that the subsequent invasion by land-hungry farmers imposes severe damage on the remaining forest cover causing increased soil erosion, reduced rainfall, and lower water tables. Hence, the Government is becoming more conservation-minded in its approach to forestry in particular, and to natural resources in general [p. 3]."

Notice that while the government is unwilling to threaten the political power of the commercial loggers who savage the forest, the entrance of small farmers into the cleared space is viewed as an important ecological crisis that motivates the Government to become "conservation minded." Is it easier to get "conservation minded" against small armers than against loggers who generate foreign exchange and commercial timber?. There seems little interest in dealing with the conditions that cause farmers to invade the cleared forest. But it seems clear in the administration's mind that the farmers are the "enemy" of the forest. "Conservation" then becomes an <u>anti-fanner</u> activity, doing little to endear it (conservation) to the masses in the villages upon whose shoulders the success of such programs will ultimately fall. It would seem more reasonable to undertake development interventions to deal with the land-use problems of the farmers than to blame them for degradation and set them against conservation. Successful conservation programs in the developing countries <u>must</u> be coincident with farmers' interests, not opposed to them.

We see another example of this in the Bhutan Forestry Development Project. The project lands happen to fall on areas designated by the Government of Bhutan as "reserve forests", even though farm families have been using these lands for years. Grazing permits have been issued for cattle on approximately 200 ha, and approval has been given for farmers to cultivate approximately 70 ha. Now, however, the Government plans to reassert its "ownership" of these lands, assuring the farmers that they will be "minimally displaced." The dislocation is said to affect only twenty families, and compensation is planned in the form of employment on the project. The project report notes that there would be ". . .little impact on the project if these areas were not included [Bhutan: Forestry Development Project, 1984, p. 11]." That being the case, one must wonder why it is necessary to evict established farmers in order to include these areas?

There are other examples where the existing uses of land by the weaker segments of society are deemed to be unimportant. In Morocco, those relying on collective grazing areas seem powerless to prevent incursions by farmers seeking cultivable lands, while the authorities do not provide them legal or political help. As one report concluded, Government interest in implementing solutions has been hampered by "...the initial cost of investments, the difficulty of securing initial support and participation of the right holders to these lands and the <u>relative lack of priority attached to the subsector</u> [Morocco; SAR for the Loukkos Rural Development Project (Morocco), 1980, p. 4]." (emphasis added). Involvement of small farmers is often difficult, but crucial, in watershed projects. India undertook in the Himalayan foothills the River Valley Project whose intent was to create 300 small watershed projects in 30 river valleys. The purpose of such projects was to reduce accelerated siltation of dams located on these rivers, and to enhance irrigation capacity. The Government of India now recognizes that its failure to involve local people in the planning of such projects, and its failure to undertake a "multi-disciplinary and integrated approach to the planning and implementation of watershed rehabilitation and development, was a major cause of poor project performance" [India! SAR for the Himalayan Watershed Management Project, 1983, p. 4]."

A similar situation arose in the Philippines. There, the Government undertook a number of small projects to achieve the short-term objective of re-establishing ground cover. However, no attention was paid to developing an enduring system of land use management with adequate incentives for local inhabitants that would sustain those plantings, and would prevent other areas being similarly destroyed. The approach was conceptually flowed because the existing tree planting campaigns, by offering employment only for planting were, in fact, providing the local population with an incentive to destroy the seedlings in order to get more employment. As a Bank analysis correctly pointed out, any successful watershed management program would have to give the local population a stake in the survival of the trees.

Some of the conceptual fallacies about property systems that can be encountered in some Bank project appraisal reports or other operational materials may be traced clearly to uncritically "received truths", to ethnocentric perceptions about land use and rights, and to obvious cliches about the "proper" way in which those rights should be arranged. "Received truths" have a high chance to be used as ready-made and handy explanations particularly when project preparation work and socio-economic analysis are superficial. Short of in-depth sociological studies about the land tenure systems at work in the project area and their consequences, planners are often prone to apply stereotyped interpretations, apparently plausible but not necessarily true, which remain unchecked in the field. Of course, such conceptual fallacies and misinterpretations lead to misguided practical recommendations and operational fallacies. As an illustration of such stereotyped explanations, we quote from the staff appraisal report of a rural development project prepared several years ago in a north African country:

> There are major land tenure issues in [...] including: (a) skewed distribution of private land; (b) extreme fragmentation of farms which reduces the efficiency of operation on the larger ones, and contributes to the lack of viability of the smaller; (c) lack of land titles which are required by the National Bank...to extend long-term credit, and which could provide security of tenure thereby encouraging investment in the land; (d) lack of security of land tenure for tenant farmers reducing their incentive to invest in farm assets and to conserve the soil; (e) a high incidence of absentee land ownership and a tendency for absentee owners to under-exploit their land; and (f) the tendency for collectively owned land to be poorly managed and over-exploited causing...low productivity".

It would be difficult to find a quote of comparable length containing more conventional wisdom about land, property, tenure and incentives. We will comment on several dimensions of this issue, indicating our judgment as to the nature of the fallacy of certain "truths" about land use, agriculture, and economic behavior.

Land Titles, Collateral, and Investment. We are often told that secure titles are needed so that banks will extend credit to farmers, and so that there will be an incentive for farmers to invest in land improvements. We call this the investment fallacy. Note that we do not quarrel with the fact that banks will not extend certain kinds of credit without secure land titles. Our question focuses, rather, on the logical necessity of having secure title in order to obtain long-term credit.

There is, in theory, no compelling reason why agricultural credit cannot be extended to farmers in the absence of land as collateral. Since interest rates are the price of money — including the risk of default -— there is a market-clearing price for agricultural credit for farmers able to pledge only their crop -- or their bullock -- as collateral. The fact that lending organizations demand ownership does not make it necessary in theory — only in practice. Agricultural credit markets have operated throughout history without private ownership of land. And the local saving societies (or circles) so frequent in most developing countries have default rates significantly below those of the "formal" credit sector for which titles seem to be so essential. If the argument is that land as collateral is a necessary condition for adequate levels of agricultural lending then that is an empirical question that can be addressed in different settings in which the term "adequate" is defined, and in which other policy instruments for mobilizing credit are also considered.

The second part of the "investment fallacy" is that farmers will not invest without secure title — that is, ownership. The assertion fails to admit that a lease for 15-25 years provides security of tenure over a planning horizon that is relevant under most reasonable assumptions of farmers' rates of time preference. Recall that at a discount rate of 10 percent, future benefits beyond 20-25 years are essentially zero? it is therefore unnecessary to provide security beyond that time. Leases can easily have rollover provisions that protect some reasonable planning horizon for the farmer. The necessary condition for security is an enforceable lease, not deed of ownership. The confusion in thinking under discussion here arises from a failure to distinguish policy instruments from policy objectives. Security is the policy objective, property (or ownership) is the policy instrument; when an alternative way can be found to accomplish the objective, no great loss is suffered by the choice of instrument [Tawney, 1978, Bromley, 1989a]. By definition, policy instruments are mere mechanisms for accomplishing particular objectives. If private property and a corresponding title is the policy objective of the Government — or of the Bank — then that should be so stated. In the absence of that declaration secure tenure is the policy objective and one can then undertake a search for the most effective policy instrument. Private property rights may be one of these candidate instruments, but it is certainly not the only one.

In this regard we call attention to research currently underway in the Bank on land titles and agriculture in sub-Saharan Africa. The authors suggest that it is prudent to avoid "broad generalizations about the supposed inefficiencies of indigenous land tenure systems in sub-Saharan Africa, and of the need for simplistic interventions such as the enactment of national land laws or land registration" [Migot-Adholla, et al. 1988, p. 14]. The same researchers continue by noting that

> ...where indigenous social fabric has been eroded so that the traditional institutions are weak, reliance on "elders" who are often no more than government appointees not conversant either with customary tenure rules or the niceties of land registration statutes may lead to injustices. This

> then suggests a strategy that predicates land registration programs on demand from the bottom rather than imposition from above. It also suggests the need to make adequate provisions for efficient administration of land including the updating of records. Kenya's experience over thirty years suggests that land registration without other supportive services and appropriate macroeconomic conditions is not likely to improve security or promote credit markets in most of sub-Saharan Africa. Given its high cost of implementation and maintenance it is doubtful that universal land registration should be adopted as a national program by most African countries at present [Migot-Adholla, et al., 1988, pp. 15-16].

To conclude this aspect, it is interesting to note that the report we are taking issue with did not quote any specific element from the culture of the given North African country which would justify with local evidence the "linkage" between titles, investments and incentives. The report contented itself merely with the invocation of a received "truth", extrapolating it to the local context.

Tenancy, Security, and Soil Conservation. We now turn to the fallacy of stewardship, in which one is concerned with the relationship between land tenure and, say, soil conservation. This argument overlooks the possibility for long-term leases with various incentives to cause tenants to behave in ways consistent with the owner's wishes. There is absolutely no reason why tenants cannot have secure leases, and there surely is no reason why leases cannot have clauses outlining acceptable — and prohibited -— practices. That is, such contracts would contain performance criteria defining conditions under which the terms of the lease shall continue to be honored by the lessor. One is required to assume absolute ignorance — or indifference — on the part of landowners to suggest that tenants can squander soil at their discretion. If there is a problem with tenants dissipating soil, the fault lies with the objective function of the owner, or with the nature of the contract between tenant and owner. We note, in this regard, that empirical evidence in the United States has yet to demonstrate that tenure is in any essential way related to soil conservation behavior. Again, the problem is not found in the particular property regime in force, but in the objectives of those with ownership rights, and/or with the nature of the contracts that exist among economic agents.

Absentee Ownership and Under-Exploitation of Land. Having just been told that absentee ownership and the correlated tenancy leads to over-exploitation of land, it is now said that the same conditions — absentee ownership — lead to "under-exploitation." This is the fallacy of absenteeism. We understand that in the African context some absentee owners do the absolute minimum to retain control of land. But if land is producing less than it otherwise might then this is a matter of the relative prices of agricultural inputs and outputs, the level of technology or skills, and the expected agricultural income vis-a-vis other alternatives. To focus on tenure is to miss the essence of the issue, and it is to confuse fundamentally different things.

Collective Land and Over-Exploitation. This is the metaphor of the "tragedy of the commons" already addressed above, which in this case explicitly (mis)explained low productivity as a consequence of common property. We refer to this as the fallacy of misplaced causality, that distorts the real relationship between ownership and productivity. The proponents of this view fail to understand the difference between open access regimes and common property regimes. To equate "collectively owned" land with the absence of ownership under open access regimes is to betray a conceptual confusion that is, unfortunately, all too common. The Swiss summer pastures are "collectively owned" but can hardly be described as degraded; this points to a fundamental issue that has never been well understood. That is the following: the summer pastures of Switzerland are collectively owned precisely because they are of low productivity, in other words, they have a lower agricultural potential than the farmed lands. Notice that we did not say that such pasture lands are of low productivity because they are collectively owned. In the developing countries, indeed even in Switzerland, land at the extensive margin is collectively owned because it is not of sufficient inherent productivity to justify private ownership.[5] One of us makes this point more fully elsewhere [Bromley, 1989b].

These fallacies, separately or combined, can often be detected in the rationale for privatizing property in land and related natural resources in the developing countries. Therefore, it behooves us all to examine our implicit or explicit faith in such propositions and seek conceptual clarity and adequacy when we next undertake project or program responsibilities.

B. PROJECT LESSONS

The lessons to be drawn from the preceding brief review of project experience at the extensive margin are probably quite familiar to those who have worked in development for some time; there are no real surprises. The failures, epitomized by the Trans-Juba Livestock Project (Somalia), the Botswana Land and Livestock Project, the watershed projects in India, and others show glaring examples of administrative arrogance and condescension towards local institutional arrangements and organizations. Sometimes the provision of assistance is accompanied by so little trust that turnkey projects are "dropped into" rural areas, complete with managers until the locals are "ready" to assume managerial responsibility.

Several projects covered in our review show, however, particularly encouraging processes and results. The Middle Atlas-Central Area-Agriculture Development Project in Morocco, the Eastern Senegal Livestock Project, and others illustrate, in various ways, the trust of the central government and Bank that is the very essence of the strengthening we seek here. In these projects local people were consulted in conception and formulation, managerial authority was ceded to the local level, external administration was both unobtrusive and withdrawn in a timely and delicate fashion, and the necessary discipline was imposed by the local authorities where it was both knowledgeably administered, and not resented by the locals.

One has the fear, however, that these success stories are in a way almost random events, occurring more as a result of felicitous circumstances rather than the outcome of a systematic and well-established method of designing the institutional and social arrangements and strategies of projects with the participation of the affected population. Such projects necessarily require patient preparation and closely monitored implementations. But the conditions in the recipient countries are most often the stochastic element. In the next section we will propose a Bank program with the explicit purpose of regularizing those fortuitous conditions that can lead to project success.

Before turning to that, we offer the observation that successful projects related to the management/development of a common pool natural resource will usually hinge, as a rule, on the careful identification of the relevant social unit or the relevant unit of social organization — which is best suited to be the "agent of development" in a project [Cernea, 1985]. By that we mean great care must be exercised in determining, at the local level, the appropriate body (or population group(s), associations, etc.) that will assume primary managerial responsibility for one or more components or activities of the project. One of us has previously written about the problems that arise when an improper unit of social organization is singled out for project responsibility [Cernea, 1985]. The example was a community forestry project in Azad Kashmir, Pakistan, but the principle applies to any type of project.

An important lesson resulting from many projects refers to the compatibility necessary between the type of property regime over the natural resources with which the project is concerned and the units of social organization around which the project should be designed. For instance, a number of community woodlots financed in the 1980s under Bank social forestry projects (e.g., in Gujarat, Uttar Pradesh and elsewhere in India, as well as in several West African countries) have failed because of undue expectations from communities that long ceased to be able to act as corporate bodies and thus were not adequate social actors for such schemes (Cernea, 1989).

In some of those schemes, the land deemed to be under a regime of common property simply wasn't so, but instead had already converted into a private regime; of course, it isn't possible to induce articulated group action on natural assets that are under private ownership and control. But even when the land for the woodlot is still genuine commons lands, belonging to the entire community, it is extremely difficult to engender the type of longer-term collective action required for woodlot enterprise. Communities and villages are geographical residential units, not necessarily corporate organizations; they are usually heterogeneous population clusters, stratified and split in subgroups with fragmented socio-economic interests, and changing the use of the commons through woodlot development may be advantageous for one subgroup but opposed by other subgroups. Moreover, benefit distribution arrangements based on labor contribution to the woodlot would not satisfy the non-contributors, who nevertheless maintain an entitlement in the land (Cernea, 1989). Projects have usually failed to negotiate contracts for the distribution of project benefits before the benefits begin to appear and can be appropriated by the powerful segments of the community.[6] The hard-won lessons from such operational complexities point, first, to the need for conceptual clarity from the outset about both the nature of the common pool asset used or created and the unit of social organization established around it; and second, to the need for considering community subgroups, more manageable in size and more homogeneous in their interests, as potential social actors of common property regimes. And certainly, promoting a community woodlot or any other group-based productive activity requires more than a simple pronouncement in the project appraisal reports it requires a meticulously designed social strategy to identify or create the unit of social organization and build up the prerequisites of collective action and of re-establishing viable common property systems.

The burden of development assistance is not just to introduce projects in a developing society context, it is, instead, to facilitate and simplify the conditions under which people living in those countries can engage in meaningful actions that will improve their lives. The success of such efforts will depend, critically, on how projects deal with local people — and how local people are encouraged to deal with exogenously introduced projects.

IV. AN AGENDA FOR ACTIONS BUILDING RURAL MANAGERIAL CAPACITY

The enhancement of managerial capacity at the local level in the developing countries involves both rural institutions and rural organizations. There is often confusion about institutions and organizations, with some individuals failing to see the critical distinction between them. Banks, hospitals, schools, and government agencies are often called "institutions." This unfortunate confusion causes considerable mischief when we turn to the serious matter of revitalizing rural managerial capacity. For it fails to reveal that two things are missing in most rural areas. We earlier suggested that the problems in rural managerial capacity arose for two reasons; (1) unclear institutional arrangements — including property rights; and (2) the absence of an authority system to give meaning to those institutional arrangements. Colonialism first, and the rise of the nation-state subsequently, have been particularly hard on local institutional arrangements, and on the organizational mechanisms that served those institutions. Our argument regarding building rural managerial capacity is centrally concerned with the revitalization of necessary institutions and organizations. Of course, effective results from strengthening rural managerial capacity would also depend, as has been demonstrated elsewhere (Warford, 1989) on improving the overall policy environment and designing broad economic policy instruments and national legal frameworks conducive to a better protection of natural resources.

In rural areas, meaningful organizations will need to be legally empowered to take certain actions, and they will then need to formulate the working rules that will define how they propose to function. These newly empowered organizations whether pastoralist associations, water-user's associations, a health service cooperative, or a group collectively managing a new tree plantation — will then proceed to manage renewable natural resources in a way that will, if all goes well, arrest continued degradation and possibly enhance the resource stock. It is such organizations that would also be established and/or strengthened through a program to build rural managerial capacity.

The questions that require an answer are: (1) how can projects influence the way that people interact with natural resources? and (2) how can people effectively influence the way that externally induced projects affect their lives? Development assistance efforts have been predicated on various assumptions and answers to the first question — but not always with great success. The second question has rarely been asked, but the answer is certainly implicit in every project — whether success or failure. We urge that these two questions be regarded of equal pertinence, but that the second be seen as logically prior to the first. That is, if people have no influence on the way natural resource projects affect their lives, then it follows that projects will have no influence on the way that individuals at the local level interact with natural resources.

We emphasize the need for Bank and government supported projects and programs to pursue more systematically and explicitly the objective of <u>building rural managerial capacity</u>. A consistent orientation to this goal would de-emphasize the traditional and often one-sided sector/commodity focus of project intervention and balance it with an emphasis on the institutional arrangements and the enduring grassroots organizations that could result in long-term sustainability and improved management of natural resources (Cernea, 1987). To build rural managerial capacity, any project would necessarily have one or more commodity components to give it tangibility. But the emphasis and the concentration would need to remain on the strengthening of local institutional arrangements and organizations. Thus, instead of livestock projects, or watershed projects, or village water supply projects, this orientation would go primarily toward building managerial capacity. Forestry or livestock (or other) components would be the <u>means</u> (or instruments) whereby the real objective to strengthen local managerial capacity — would be accomplished. In this way, if a drought prevented a forest planting from surviving, it would not necessarily imply that the project was a failure. The local organization survives to plant another day, and the enduring institutional arrangements are in place to make sure that the planting will not be dissipated by the same forces that led to the original resource degradation. This will ensure the <u>sustainability</u> of the development process, overcoming transitional and Inevitable difficulties. Notice that we are advocating projects with a single overriding objective. That objective being to develop the capacity for resource management regimes to assert control over their local assets. A number of Bank projects processed recently — or others in the early stages of formulation — seem to follow this proposed priority orientation. We note encouraging aspects of several projects in social forestry, in land management projects in West Africa, and the Bank-assisted recent "people's irrigation project" in Thailand.

Rather than seeking locations in which livestock projects, or range Improvements, or tree plantings are possible, the Bank would cooperate with national governments to search for places that show an interest in -- and some promise for — self help. The necessary condition for accepting a project by the Bank then becomes the existence of a local management regime. Once that has been found, the country's preparations team, and then the Bank appraisal team, would survey the locale to ascertain which purposes — trees, range improvements, village water supply, watershed enhancement — would be appropriate policy instruments to accomplish the policy objective. Note that the core objective of the project is not just to raise incomes of livestock keepers, or to provide fuelwood — although these may well happen. <u>The objective of the project is to strengthen local managerial capacity</u>. Notice that these projects would turn the emphasis from <u>things</u> — grass, trees, water, livestock -- to <u>processes</u> (enhanced managerial capacity). A condition the Bank would require in order to proceed with a project would be a contractual agreement between a village body (or other social group) and the relevant government agency as to the circumstances —- the rights and obligations — that will govern the particular effort to strengthen local managerial capacity.

We suggest that the after-effects of the transition from colonialism to the nation-state require extraordinary measure to overcome. Development assistance has, for too long, been predicated upon an assumption that money and some technical assistance — where "technical" usually meant agronomy, silviculture, engineering, or hydrology — would facilitate the process of self-help at the village level. While these domains of expertise are not unimportant, they must be understood to parallel, not substitute for, the critically needed competence for understanding the socio-cultural relationship among village people, their position vis-a-vis their natural resources, and their standing with respect to the national government.

This approach is not offered as some new version of disciplinary imperialism for the social sciences. It is offered because logic, common sense, and Bank experience, all conspire to show convincingly that "business as usual" wastes scarce funds, enhances the position of those already quite able to look out for themselves, entrenches the bureaucrats and technocrats of various agencies, and breeds discontent among those at the local level who desperately seek a better life. It is time to look for new alternatives to development assistance at the extensive margin. An emphasis on building rural managerial capacity as the backbone for institutional sustainability seems to offer promise when agricultural programs are formulated to deal with the rational use of natural resources and to ensure environmental sustainability.

We are encouraged by a new attitude that seems prevalent within the international donor community, including the Bank. One recalls the various phases and fads in development assistance — from import substitution, to appropriate technology, to the "poorest of the poor", to basic human needs, to integrated rural development, and now on to -- apparently — sustainable development and the environment. But sustainable development and natural resources cannot really be passing fads since they are at the very core of the development problem. Perhaps the fact that Bank staff are not certain exactly how to proceed in this new situation is the most encouraging sign of all. Over-confidence can lead to the arrogance of simple answers to complex problems, or to the futility of worn-out old recipes to new and different challenges. There are no easy solutions to these problems and caution and searching are quite appropriate.

Our discussions with a large number of Bank staff during the course of this review reveal a renewed curiosity about the processes by which poor people in marginal environments make a living. There seems to be a recognition that the lending portfolio will — and must — shift from one that saw natural resources as extractive opportunities, to one that sees the natural resources of agriculture as the very foundation upon which poor people will build their future. One should not despair that the easy answers are elusive. Let us search for those answers with the assurance that the right answer will only emerge as we ask the right questions. We are encouraged that the development community seems to have passed through the reductionist phase of development assistance — a phase in which all solutions were reduced to simple technical or economic absolutes. Planning procedures must be dialectic and flexible, open to probes and searches for the right questions to ask, and to the discovery of feasible answers. Out of this process it seems reasonable to suppose that all of us will once again discover the economic and social role of land and related natural resources, and the patterns of social interaction that influence how people use and depend upon those resources. The new era in project work should be marked by an attitude of confidence but not condescension; aggressive programming without arrogance. It is more difficult to do projects now that we know more than we did ten years ago. But with that learning comes the chance to do even better.

NOTES

1. Particular examples are found in projects in Somalia, Chad, Burkina Faso, Nepal and India.

2. Three main stages in this long historical process have been described, for instance, for the Azad Kashmir part of Pakistan: (1) informal participation; (2) gradual appropriation; and (3) formal privatization (see Cernea, 1989, forthcoming).

3. However, in the absence of effective enforcement of the new property regime, coupled with the villagers' perception that "their" forests had been expropriated by the government, the resource became — for all practical purposes — an open-access resource which villagers felt free to squander.

4. This assumes compliance with existing property regimes.

5. The extensive margin is at the point where the ratio of labor and capital applied to land is exceedingly low; economic activity here is usually confined to grazing and forestry activities. Contrast this with the intensive margin where labor and capital per unit of land are very high. Typical economic activities at the intensive margin consist of urban-based production.

6. For a discussion of the need for a "constitution" early in the project cycle — with specific reference to irrigation — see [Bromley, 1982; and Bromley, Taylor and Parker, 1980].

BIBLIOGRAPHY

Behnke, Roy H. Open-Range Management and Property Rights in Pastoral Africa; A Case of Spontaneous Range Enclosure in South Darfur, Sudan. London: Overseas Development Institute, Pastoral Development Network, August 1985, paper 20f.

Bhatia, B. M., "Disintegration of Village Communities in India," in: Readings in Indian Economic History ed.

by B. N. Ganguli. Asia Publ. House, London, 1964. pp. 88-101.

Botswana: National Land Management and Livestock Project, Staff Appraisal Report, World Bank: Washington, D.C., 1985).

Bromley, Daniel W., Economic Interests and Institutions. Basil Blackwell, Oxford, 1989a.

Bromley, Daniel W., "Property Relations and Economic Development: The Other Land Reform," World Development, 17(6):867-77, June 1989b.

Bromley, Daniel W., "Natural Resources and Agricultural Development in the Tropics: Is Conflict Inevitable?" in: Agriculture in a Turbulent World Economy ed. by Alan Maunder and Ulf Renborg. Gower, Oxford, 1986.

Bromley, Daniel W. and Devendra P. Chapagain, "The Village Against the Center: Resource Depletion in South Asia," American Journal of Agricultural Economics 66:868-73, December 1984.

Bromley, Daniel W., Improving Irrigated Agriculture: Institutional Reform and the Small Farmer, World Bank Staff Working Paper 531. Washington, D.C, 1982.

Bromley, Daniel W., Donald C. Taylor, and Donald E. Parker, "Water Reform and Economic Development: Institutional Aspects of Water Management in the Developing Countries," Economic Development and Cultural Change 28:365-387, January, 1980.

Cernea, Michael M., "Alternative Units of Social Organization Sustaining Afforestation Strategies," in: Putting People First: Sociological Variables in Rural Development ed. by Michael M. Cernea. Oxford University Press, Oxford, 1985.

Cernea, Michael M., "Entrance Points for Sociological Knowledge in Planned Rural Development," Research in Rural Sociology and Development 3:1-25, 1987.

Cernea, Michael M. Farmer Organizations and Institution Building for Sustainable Development, World Bank Reprint Series No. 414, 1987.

Cernea, Michael M., User Groups as Producers in Participatory-Afforestation Strategies, World Bank Discussion Paper, 1989 (forthcoming).

Ciriacy-Wantrup, S. V., and Richard C. Bishop, "Common Property as a Concept in Natural Resources Policy," Natural Resources Journal 15:713-727, October 1975.

Commons, John R., Legal Foundations of Capitalism. University of Wisconsin Press, Madison, 1968.

Feder, Gershon, at. al. Land Policies and Farm Productivity in Thailand. Johns Hopkins University Press, Baltimore, 1988.

Fortmann, Louise and John W. Bruce, eds., Whose Trees? Proprietary Dimensions of Forestry. Westview Press, Boulder, 1988.

Geertz, Clifford The Social History of an Indonesian Town. MIT Press, Cambridge, 1965.

Gupta, Sulekh Chandra "The Village Community and its Disintegration in Uttar Pradesh in the Early Nineteenth Century," ins Readings in Indian Economic History ed. by B. N. Ganguli, Asia Publ. House, London, 1964. pp. 102-113.

Indias Himalayan Watershed Management Project (Uttar Pradesh), Staff Appraisal Report, World Bank, Washington, D.C., 1983.

Indonesia: North Sumatra Smallholder Development Project, Project Performance Audit Report, World Bank, Washington, D.C., 1982.

Ivory Coast: Second Forestry Project, Staff Appraisal Report, World Bank, Washington, D.C., 1985.

Ivory Coast: Forestry Project, Staff Appraisal Report, World Bank, Washington, D.C., 1979.

Jodha, N. S., "Common Property Resources and Rural Poor in Dry Regions of India," Economic and Political Weekly 21:1169-81, July 5, 1986.

Korten, Frances F. "The Policy Framework for Community Management" in: Community Management: Asian Experiences and Perspectives ed. **by D. Korten,** Kummarian Press, 1986.

Lewis, David, Convention; A Philosophical Study. Basil Blackwell, Oxford, 1986.

McCay, Bonnie and J. A. Acheson, The Question of the Commons. University of Arizona Press, Tucson, 1988.

Migot-Adholla, Shem, Peter Hazell, Benoit Blarel, and Frank Place "Land Tenure Security and Agricultural Production in Subsaharan Africa," World Bank, Agriculture and Rural Development Department, processed, December, 1988.

Morocco: Loukkos Rural Development Project, Staff Appraisal Report, World Bank, Washington, D.C., 1980.

Morocco: Middle Atlas-Central Area-Agriculture Development Project, Staff Appraisal Report, World Bank, Washington, D-.C, 1981.

National Academy of Sciences, Common Property Resource Management National Academy Press, Washington, D.C., 1986.

Niger: First Forestry Project, Project Performance Audit Report, World Bank, Washington, D.C, 1983.

Niger: Second Forestry Project, Staff Appraisal Report, World Bank, Washington, D.C, 1982.

Odell, Malcolm J. Local Institutions and Management of Communal Resources: Lessons from Africa and Asia. London: Overseas Development Institute, Pastoral Development Network, August 1982, paper 14e.

Perrier, G. K. Limiting Livestock Pressure on Public Rangeland in Niger (London: Overseas Development Institute, Pastoral Development Network, February 1986, paper 21d).

Philippines: Watershed Management and Erosion Control Project, Staff Appraisal Report, World Bank, Washington, D. C, 1980.

Senegal: Eastern Senegal Livestock Development Project, Staff Appraisal Report. World Bank, Washington, D.C, 1976.

Senegal: Easterly Senegal Livestock Development Project, Project Performance Audit Report, World Bank, Washington, D.C, 1986.

Senegal: Eastern Senegal Rural Development Project, Staff Appraisal Report, World Bank, Washington, D.C., 1983.

Senegal: Terres Nueves II Resettlement and Eastern Senegal Technical Assistance Project, Project Performance Audit Report, World Bank, Washington, D.C., 1981.

Shepherd, Gill The Reality of the Commons: Answering Hardin from Somalia (London: Overseas Development Institute, Social Forestry Network, May 1988, paper 6d).

Somalia: Trans-Juba Livestock Project, Project Performance Audit Report, World Bank, Washington, D.C., 1983.

Sweet, R. J. The Communal Grazing Cell Experience in Botswana (London: Overseas Development Institute, Pastoral Development Network, February 1987, paper 23b).

Tawney, R. H., "Property and Creative Work," in: Property: Mainstream and Critical Positions, ed. by C. B. Macpherson. University of Toronto Press, Toronto, 1978.

Thailand: Land Titling Project, Staff Appraisal Report, Wold Bank, Washington, D.C., 1984.

Thailand: Northern Agricultural Development Project, Staff Appraisal Report, World Bank, Washington, D.C., 1979).

Thomson, James T. 1977: Ecological Deterioration: Local-Level Rule Making and Enforcement Problems in Niger, in: Michael Giantz ed., Desertification: Environmental Degradation in and Around Arid Lands. Boulder, Colorado: Westview Press, 1977.

Tunisia: Northwest Agricultural Production Project, Staff Appraisal Report, World Bank, Washington, D.C., 1985.

Tunisia: Northwest Rural Development Project, Staff Appraisal Report, World Bank, Washington, D.C., 1981.

Vaidyanathan, A. "The Indian Economy Since Independence (1947-1970)," in: The Cambridge Economic History of India, Vol.2: c. 1757-c. 1970, ed. by Dharma Kumar, Cambridge University Press, Cambridge, 1983.

von Albertini, Rudolf European Colonial Rule, 1880-1940; The Impact of the West on India, Southeast Asia, and Africa. Greenwood Press, Westport, CT, 1982.

Wade, Robert Village Republics. Cambridge University Press, Cambridge, 1988.,

Warford, Jeremy J. Environmental Management and Economic Policy, In vol. Environmental Management and Economic Development, edited by Gunter Schramm and J. J. Warford, Johns Hopkins University Press, Baltimore and London, 1989.

World Bank, Desertification in the Sahelian and Sudanian Zones of West Africa. Washington, D.C., 1985.

RECENT WORLD BANK DISCUSSION PAPERS (continued)

No. 31. Small Farmers in South Asia: Their Characteristics, Productivity, and Efficiency. Inderjit Singh

No. 32. Tenancy in South Asia. Inderjit Singh

No. 33. Land and Labor in South Asia. Inderjit Singh

No. 35. Global Trends in Real Exchange Rates. Adrian Wood

No. 36. Income Distribution and Economic Development in Malawi: Some Historical Perspectives. Frederic L. Pryor

No. 37. Income Distribution and Economic Development in Madagascar: Some Historical Perspectives. Frederic L. Pryor

No. 38. Quality Controls of Traded Commodities and Services in Developing Countries. Simon Rottenberg and Bruce Yandle

No. 39. Livestock Production in North Africa and the Middle East: Problems and Perspectives. John C. Glenn [Also available in French 139F)]

No. 40. Nongovernmental Organizations and Local Development. Michael M. Cernea

No. 41. Patterns of Development: 1950 to 1983. Moises Syrquin and Hollis Chenery

No. 42. Voluntary Debt-Reduction Operations: Bolivia, Mexico, and Beyond... Ruben Lamdany

No. 43 Fertility in Sub-Saharan Africa: Analysis and Explanation. Susan Cochrane and S.M. Farid

No. 44. Adjustment Programs and Social Welfare. Elaine Zuckerman

No. 45. Primary School Teachers' Salaries in Sub-Saharan Africa. Manuel Zymelman and Joseph DeStefano

No. 46. Education and Its Relation to Economic Growth, Poverty, and Income Distribution: Past Evidence and Further Analysis. Jandhyala B.G. Tilak

No. 47. International Macroeconomic Adjustment, 1987-1992. Robert E. King and Helena Tang

No. 48. Contract Plans and Public Enterprise Performance. John Nellis [Also available in French (48F)]

No. 49. Improving Nutrition in India: Policies and Programs and Their Impact. K. Subbarao

No. 50 Lessons of Financial Liberalization in Asia: A Comparative Study. Yoon-Je Cho and Deena Khatkhate

No. 51 Vocational Education and Training: A Review of World Bank Investment. John Middleton and Terry Demsky

No. 52 The Market-Based Menu Approach in Action: The 1988 Brazil Financing Package. Ruben Lamdany

No. 53 Pathways to Change: Improving the Quality of Education in Developing Countries. Adriaan Verspoor

No. 54 Educating Managers for Business and Government. Samuel Paul, Jacob Levitsky, and John C. Ickis

No. 55 Subsidies and Countervailing Measures: Critical Issues for the Uruguay Round. Bela Balassa, editor

No. 56 Managing Public Expenditure: An Evolving World Bank Perspective. Robert M. Lacey

No. 57 The Management of Common Property Natural Resources. Daniel W. Bromley and Michael M. Cernea

No. 58 Making the Poor Creditworthy: A Case Study of the Integrated Rural Development Program in India. Robert Pulley

No. 59 Improving Family Planning, Health, and Nutrition Outreach in India: Experience from Some World Bank-Assisted Programs. Richard Heaver

No. 60 Fighting Malnutrition: Evaluation of Brazilian Food and Nutrition Programs. Philip Musgrove

No. 61 Staying in the Loop: International Alliances for Sharing Technology. Ashoka Mody

The World Bank

Headquarters
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.
Telephone, (202) 477-1234
Facsimile: (202) 477-6391
Telex: WUI 64145 WORLDBANK
RCA 248423 WORLDBK
Cable Address: INTBAFRAD
WASHINGTON DC

European Office
66, avenue d'Iena
75116 Paris, France
Telephone: (1) 47.23.54.21
Facsimile: (1) 47.20.19.66
Telex: 842-620628

Tokyo Office
Kokusai Building
1-1 Marunouchi 3-chome
Ctnyoda-ku, Tokyo 100, Japan
Telephone: (3) 214-5001
Facsimile: (3) 214-3657
Telex: 781-26838

$06 . 95 9-210X / ISBN 0-8213-1249-9 DP0057

Paper Number 57

The Management of Common Property Natural Resources

The Worl