

LESSONS FROM A CRITICAL EXAMINATION  
OF  
LIVESTOCK PROJECTS IN AFRICA

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## EXECUTIVE SUMMARY

This working paper suggests that the widely acknowledged poor performance of pastoral livestock projects results from:

1. The fact that they are based on incorrect assumptions about the nature of pastoral systems and their problems--about the range water and herd management strategies of pastoralists, and about the relationship of pastoralism to the wider environmental, political and economic context in which they are found;

2. Failure to take account of the interests and perceptions of the many diverse interest groups that are competing for the natural and governmental resources at stake;

3. The inappropriateness of many project inputs and desired outputs;

4. The fact that the procedures and organization of AID and other donor agencies have given their projects a narrowly technical orientation that does not take adequate account of institutional factors; and

5. Failure to build on the strengths of existing pastoral systems due to:

a. not taking adequate account of herdsman's knowledge of their physical environment and livestock and their experience and skills in transhumant herd management;

b. not using existing social groups to manage scarce range and range water resources and to finance capital and recurrent costs out of livestock sales; and

c. not seeking and facilitating the active participation of pastoralists in problem identification, project design, implementation, monitoring and evaluation.

In light of these problems and the comparatively long time frame for all livestock production activities, it is evident that the objectives of AID pastoral livestock projects are currently unrealistic.

The evidence from past project experience also indicates that some interventions have had negative environmental or economic consequences. The most important of these are broad spectrum veterinarian health services, unregulated range water development, and price stabilization through the creation or strengthening of marketing boards or other regulatory agencies. Many other interventions have proven ineffective because they are uneconomic and/or go against the interests of livestock herders. Unfortunately, both destructive and ineffective interventions continue to be financed by major donors.

While there is growing consensus among experts on many of these lessons, they are not yet reflected in the way projects are designed and are not common knowledge among the host country and American personnel responsible for implementing and evaluating them. There is also increasing emphasis in rhetoric on herder "rationality" that is not reflected in attention to pastoralist or the ways they cope with them. And despite increased verbal commitment to helping herders meet their needs, livestock and not people remain the "target population."

At the same time there are many other fundamental issues on which experts do not appear to be in agreement.

1. The extent to which various types of African rangeland are actually being degraded;
2. The extent to which this process, where it is occurring, is cyclical or uni-directional; and
3. The relative contribution to these environmental and ecological problems of increasing human population, increasing herd size, commercialization of livestock, encroachment of agriculture on dry season range and range water, herder range management practices such as burning and excessive stocking levels or other causes.

In view of this situation there is an urgent need to convene a group of experts experienced in pastoral livestock projects and research to review the issues raised in this and the accompanying papers by Drs. Ferguson and Horowitz--to assess what is known and what else needs to be known about the problems of pastoral systems and the best ways of dealing with them.

The main purposes of this conference, to be held in September 1979, are:

1. To provide AID with policy implementation guidelines concerning whether, when, where and in what ways to become involved in pastoral livestock projects; and
2. To identify key questions that should be addressed in additional research and evaluative studies.

Finally, the critical findings of this review are not limited to AID projects but are equally applicable to those of other donors. Nor are they limited to sub-Saharan Africa, for experience with pastoralism in other arid regions is similar. Above all, they are not limited to projects in the livestock sub-sector. On the contrary, many of the general or "emergent" issues raised in this critical review of pastoral livestock projects appear to be directly relevant to other types of projects intended to modify the indigenous production systems of low-income and politically marginal people.

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## INTRODUCTION

The purpose of this working paper is to identify issues to be discussed by participants at the Office of Evaluation--Africa Bureau conference on Pastoral Systems and Livestock Projects in Sub-Saharan Africa. The conference is part of a study of the impact of past livestock projects on pastoral people, undertaken to find out what lessons can be learned from past experience that will help the Agency for International Development, other donors, and African governments make their future livestock programs more effective. This paper, along with papers by Dr. Donald Ferguson and Dr. Michael Horowitz, are being circulated for comment to all conference participants.\*

The study was initiated because of a widespread perception that livestock projects in arid zones of Africa have not been successful in attaining their planned objectives of increasing productivity, arresting environmental degradation or raising herder income. Indeed in some instances interventions are believed to have been counter-productive. Nevertheless, in recognition of the serious environmental and socioeconomic problems faced by pastoralists and the productive potential of the arid regions they inhabit the Agency continues to make significant commitments to the livestock sector. In the past the Africa Bureau allocated roughly 15% of its funding to livestock activities. As of November 1978 AID had 17 active livestock projects in Africa with estimated life-of-project costs of U.S. \$94,622,000 and another 8 proposed projects with an estimated LOP cost of U.S. \$32,248,000. In addition the Bureau had 16 other active and proposed non-livestock projects with livestock sector implications with an estimated LOP cost of U.S. \$114,767,000. There is thus an urgent need to assess the reasons for past problems and to develop workable policy implementation guidelines for future programs involving pastoralists.

This working paper is not intended to be a final statement of lessons learned or of AID policy. On the contrary it represents my own synthesis of material and is meant to provoke written response and discussion on a broad range of issues that appear to me to affect the success or failure of pastoral livestock projects and other types of programs that attempt to change the production and/or marketing strategies of low-income rural people. For this reason I have tried to state positions and lessons clearly, preferring overstatement to ambiguity or compromise.

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\* These papers are: "The Sociology of Pastoralism and African Livestock Projects" by Dr. Horowitz and "A Conceptual Framework for the Evaluation of Livestock Production Development Projects and Programs in Sub-Saharan West Africa" by Dr. Ferguson.

Readers are urged to send their written comments to Dr. Michael Horowitz, P.O. Box 45, Westview Station, Binghamton, New York, 13905, USA. This feedback will help Dr. Horowitz prepare the agenda for the conference and his post conference final report. Comments will be most helpful if they refer to specific paragraphs and if they indicate agreement, disagreement, and evidence for opinions expressed. It will be particularly useful if readers can identify instances in which frequent encountered difficulties were overcome or innovative approaches are currently under way.

The emphasis throughout my discussion is on institutional and policy issues, rather than technical or management issues. When technical inputs are discussed, it is from the point of view of whether they are appropriate to the context in which they are applied and whether they will solve the problem to which they are addressed. For example, the circumstances in which deep wells are an appropriate intervention are of concern while technical questions concerning well drilling and pumps are not. The quality of project management obviously affects projects in all sectors including livestock. It has been given relatively little attention here because it has been given much attention in the past and because livestock projects appear to suffer similar difficulties in regard to effectiveness, regardless of the quality of their management.

The paper draws upon a wide variety of sources in addition to the papers by Drs. Ferguson and Horowitz. These include published and unpublished materials, project documents and evaluations, and interviews with AID and other Agency personnel. Many of these sources are not documented because some of the most insightful comments were made "off the record," and because I do not wish to single out particular agencies, projects or countries for criticism. I am grateful to Drs. Don Ferguson, John Lewis, Peter Little and members of the Office of Evaluation for their comments on an earlier draft. Needless to say, I alone am responsible for errors of fact or interpretation.

The content and organization of this paper reflect the Office of Evaluation's desire to extract policy relevant lessons from past experience by examining it from several partially independent perspectives. The first section examines common assumptions about pastoralists and their problems that are often stated explicitly or implicitly in project documents and discussions of pastoralism. The second is concerned with the competing and sometimes conflicting objectives of the many interest groups that affect the way projects are designed and implemented. The third section attempts briefly to summarize experience with specific project interventions. The fourth examines the way that donor organization and procedure and

the professional culture of experts shape livestock programs. The final section is concerned with policy implementation issues facing African governments and the Agency for International Development.

Each section contains a statement of the problem, a summary discussion of lessons derived from research and/or project experience, and a list of issues that require further clarification. In some instances I have also identified "emergent issues". These are issues which emerged in the analysis of pastoral livestock issues but which are relevant to a wider range of development activity and hence which may be of more general concern.

### ASSUMPTIONS ABOUT PASTORAL SYSTEMS

The data on pastoral livestock projects suggests that their poor performance can be attributed in significant part to the fact that they are based on incorrect assumptions about the nature of pastoral systems and their problems; about the range, water, and herd management strategies of pastoralists; and about the relationship of pastoralism to the wider environmental, political, and economic context in which they are found.\* While many experts no longer make these incorrect assumptions, they are still frequently encountered in project documents and evaluations and in the attitudes of technicians responsible for project implementation.

A widely held stereotype of pastoralists' systems holds them to be simple, backwards, inefficient, resistant to change, and inherently conservative. The pastoralists' range and herd management practices, in this view, are largely governed by tradition and an irrational desire to accumulate as many livestock as possible. His strategies are to accumulate ever larger herds, regardless of the available forage supplies, and to move this livestock about the range in an attempt to use up available pasturage and water supplies before these communally owned, presumably unrestricted resources are used by others. The inevitable result of this "zero sum" game of competition for limited resources is overstocking and degradation of the environment, often referred to as the "tragedy of the commons."

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\*The misunderstanding of traditional production systems is not peculiar to pastoralism but plagues many aspects of agricultural and rural development.

In economic terms pastoralists are often characterized as subsistence oriented, not interested in increasing productivity, and poorly articulated with national and regional systems. In political terms they are seen as weakly organized (and hence incapable of range management), unruly, poorly integrated into the national polity and stubbornly resistant to national marketing and pricing schemes.

While definitive data on the dynamics of Africa's diverse pastoral systems are still incomplete and uneven in quality, they do not support these common stereotypes. It is clear that rather than being simple, pastoralists' social and production systems are complex, involving as they do, inter-relationships between land, vegetation, and wild animal species, on the one hand, and between humans and their livestock on the other. It is also clear that the degree of symbiosis between these sub-systems is more complex than was formerly recognized. For example, it has been established that classic East African grassland floral and faunal systems have taken shape in part through pressures and range use practices of pastoralists.

The perception that livestock herders move their herds over excessively large areas, thus obviating rational and efficient land use planning, is not supported by research findings. On the contrary, it has been found that herd mobility and concomitant access to pasture are crucial adaptive strategies evolved by pastoralists because of the enormous and unpredictable variation in the availability of graze and browse. There are no known economically viable alternatives with wide applicability to current mobility practices. It is also evident that pastoral systems are highly specialized and flexible in the face of changing circumstances.

Cultural conservatism in terms of clothing, hairstyles, and other outward symbols of ethnic identity is indeed characteristic of many pastoral groups, but it seems to be associated with situations in which pastoralists feel that their group identity and/or natural resources are threatened by other groups or national governments. This conservatism does not extend to technical innovations, such as dips and bore holes, and has not prevented pastoralists from making substantial investments in trucks and other enterprises.

While the range, range water, and herd management practices of pastoralists are certainly the product of accumulated experience, they are not fixed or rigid but are based on intimate knowledge of the local natural environment and of livestock and involve

recurrent decision-making in response to indications of range and herd condition as well as economic circumstances. Moreover, it has been shown that many pastoral groups have, through their indigenous organization, been able to control access to range and that some of the longest used areas are least degraded.

The picture of pastoralist's herd, range, and water management strategies that is emerging from recent research is complex and reveals much variation but it does not support the ideas that the "tragedy of the commons" is inevitable or characteristic of indigenous pastoral systems. It is true that pastoralists try to accumulate livestock beyond their immediate subsistence needs, but they do so for very practical reasons, not because of an "irrational love of cattle." These include risk aversion in case of drought or disease and the fact that livestock serve as interest-bearing "inflation proof" capital which can be converted into labor, political alliance, and security through marriage and loans, and into commodities or cash through sales. In other words herdsmen try to accumulate larger numbers of livestock when, in their experience, there is no better form of savings, investment, or capital formation.

It is true that pastoralists, as economic men, have an interest in increasing their livestock holding. It is not true that their success in doing so is limited only by the rate of natural increase in herds. Nor is their herd management strategy to use natural resources before others do in unregulated competition. Herd size is limited by labor requirements and hence by the labor supply of the herd management unit. It is also limited by seasonally poor nutrition, diseases, and the hardships of long transhumance. Moreover, access to critical dry season range and range water was restricted in most indigenous pastoral systems. Dry season water points and/or pasture rights were held by particular households or more often, larger kin groups, territorial groups or tribes. Indeed, corporate control over access to these scarce resources was the material and political raison d'etre for supra-household sociopolitical organization. In times of adversity, controlling groups might allow allies access to range or water, but it was on a quid pro quo or "rental" basis. In some instances scarce resources controlled by a group were managed with conservationist objectives, through agreements regulating when and by whom they might be used.\* Frequently, these agreements were enforced by ritual, as well as by threat of warfare. Often they involved negotiation and treaties between otherwise autonomous groups.

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\* This does not mean that herders' perception of the environment or the need to conserve it coincided with that of a range scientist. There were, however, restrictions on early use of water, dry season pasture, and the trampling of young grasses in many groups. Unfortunately, we do not know the extent of these practices.

Frequently repeated assertions that pastoralists are reluctant to sell livestock, are isolated from markets and marketing information, are poorly integrated into the wider economic or are inefficient and make little contribution to the national economy are not supported by recent research.

Despite many statements to the contrary, herdsmen in most pastoral groups have proven to be price responsive over a reasonable period of time. A backward sloping supply curve only occurs in contemporary Africa as the reflection of a sound investment strategy to build up herds during good times because of uncertainty as to the future price movements or for risk aversion. While pastoralists may be geographically remote from marketing centers during all or part of the year, they are not disconnected from the national and regional marketing system. On the contrary, with few individual exceptions they are well informed about price differentials and transportation costs and are quick to shift their marketing strategy in response to changing conditions. In fact it is precisely this adaptive and well-informed marketing behavior that has frustrated many government-sponsored marketing schemes, herd owners generally being more concerned with economic returns than with political boundaries or centrally planned and administered economic development.

The assertion that pastoral systems are inefficient is based on a confusion of the technical and economic senses of efficiency. While it is true that sufficient investment in modern technology would greatly increase the production per head and per unit area of land, evidence is that in economic terms these investments would not be justified because of low prices, low productivity and high input costs. Indeed all of the micro-studies of which I am aware indicate that pastoralists realize maximum livestock output, given their capital and land resources, and that their decisions in regard to herd structure, offtake, transportation and marketing are, on the average, rational.

While the productivity of pastoral systems per unit area of land is low compared with that of many higher rainfall areas, it is generally underestimated because of two types of bias to which central planners are particularly prone. The first is a bias towards certain commodities, usually beef or meat, to the exclusion or underestimation of dairy products, hides and skins, and small ruminants.

The second is a bias towards the public sector and the formal part of the private sector because data are available for them and because they can be directly tapped as sources of government revenue. The contribution of pastoral systems to the private, informal sector of the economy is greatly underestimated, as indeed

is the contribution of indigenous agriculture. It seems likely that in most countries with significant pastoral populations governments spend far less on services to pastoralists than would be justified if their actual contribution to the economy were recognized.

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The persistence of misleading myths concerning pastoralists may seem puzzling in light of the large accumulation of research findings and developmental experience that does not support them. Several factors appear to account for the persistence of the myths. Firstly, many of the myths are enshrined in the older anthropological and generalist literature. Secondly, the mythic image of the proud, individualistic pastoralist roaming ad libidum outside the confines of sedentary, civilized society has intrinsic romantic appeal. Thirdly, there is a fairly high rate of turnover among contractors and host country persons implementing livestock projects. Fourthly, myth often serves as explanation for the failure of pastoral livestock schemes. This seems to account for the contradiction in many evaluative reports between statements that attribute failure to culturally determined resistance to selling livestock and complaints that pastoralists marketed their livestock through alternative illegal channels to obtain higher prices and avoid taxation!

Finally, many of the myths about pastoralists and pastoral systems provide a useful ideology for non-pastoralists interest groups, including traditional and modern agriculturalists, urban and governmental elites, and representatives of bilateral and multilateral donors, all of whom may wish to make alternative use of the scarce resources on which pastoralists depend.

The confusion of myth and reality in assumptions about pastoral systems is detrimental not only because it obscures the underlying dynamics of pastoral systems, their problems and the solutions to these problems, but because it contributes to incorrect problem identification, inappropriate interventions and inefficient and ineffective project implementation.

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Regardless of how well or poorly pastoral systems may have maintained a balance between men, livestock and natural resources in the past, pastoralism and pastoralists face serious problems today in many parts of Africa. In many areas increasing competition for resources is exacerbating inter-group conflict, contributing to seasonal problems in nutrition, creating eco-stress and, according to some experts, leading to long-term environmental degradation.

The immediate causes of these problems are increasing stocking levels and/or decreasing availability of forage and range water. While it is clear that many factors are contributing to these changes, their relative significance and their comparative regional incidence are speculative and need to be examined.

Factors contributing to higher stocking levels include:

1. Increased human population pressure due to natural increase, in-migration, or a concentration of population through planned or unplanned resettlement;

2. A breakdown of indigenous restrictions on access to resources due to:

a. the cessation of intergroup raiding and warfare;

b. erosion of self-governing institutions;

c. governmental refusal to enforce or permit the enforcement of traditional range and water rights;

d. the provision of unrestricted water points by governments and donor agencies;

3. Decreased livestock mortality, due to the control of epidemics, and the provision of improved veterinary services;

4. Wider ownership of livestock by classes and tribes not formerly permitted to do so; and

5. Increased commercialization of livestock, leading to more investment in livestock by sedentary farming groups, merchants, and government elites, as well as pastoralist herd owners.

Factors contributing to the loss of resources available to pastoralists include:

1. Short-term cyclical changes in rainfall patterns;

2. The encroachment of agriculture on dry season pasture and/or water;

3. Development schemes that pre-empt land and water;

4. The blocking of transhumant migration routes, due to alternative uses of land;

5. Desertification; and
6. Political changes that prevent pastoralists from controlling agriculturalists' use of land.

#### CONFLICT AND COMPETITION IN PASTORAL LIVESTOCK PROJECT OBJECTIVES

The success or failure of pastoral livestock projects depends not only on the extent to which they are based on correct understanding of particular pastoral systems but also on the extent to which they take account of the interests and perceptions of all groups concerned. While it is not possible to please all of these groups, it is essential to anticipate the ways in which their interests are likely to affect their willingness to cooperate with the design, implementation or long-term institutionalization of the program. In this sense, the development of pastoral livestock systems is a political as much as a technical or economic process, and the failure to give this fact more explicit recognition has been a persistent source of difficulty. Past experience indicates that the failure to take realistic account of different interest groups has been a weakness of most projects and of most national planning.

While the nature of the groups concerned and of their interests are variable and must be investigated in each case, general patterns can be discerned. Pastoralists themselves are typically interested in obtaining more range water, security of tenure over dry season range and seasonal migratory corridors, and health services for their livestock including veterinary services and dipping.\*

Traditional sector small farmers are often interested in encroaching on the pasture and water used by pastoralists, but particularly in West Africa, they are also interested in trade, in entrusting their own livestock to pastoralists and in obtaining manure by allowing livestock to graze their fields seasonally after harvest.

Urban middle and low-income groups, on the other hand, are primarily interested in lower meat prices and a larger and more reliable supply.

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\* There are, however, reports of pastoral resistance to forced vaccination from several countries.

Commercial and parastatal agricultural interest groups frequently desire to obtain large tracts of rangeland, which are presumed to be unused or underused, for large scale mechanized production of cereals or ranching. There is evidence from Sudan, Kenya and Tanzania that cultivation in general and mechanized farming in particular in arid zones is far more environmentally destructive than overgrazing.

Characteristically, there are also different competing and often conflicting interests in livestock policy between agencies and political institutions in the public sector. To begin with, even a ministry or other administrative unit with primary responsibility for livestock development is likely to have multiple objectives. Its formal responsibility, for which it may or may not be held accountable, is normally for increasing the quantity and quality of livestock produced and marketed at low prices for urban consumers. In some cases, public monopolies have been created to assure that livestock are marketed through public or formal private sector institutions and can consequently be measured and taxed.

As in all administrative structures, there are inevitably bureaucratic pressures to increase the unit's budget and staffing levels, to obtain funding for ambitious capital intensive, visible and visitable "show" projects, to defend and extend "turf" vis-a-vis other administrative units, to obtain new buildings and vehicles, and to gain support for training and research which will enhance the careers of the professional staff.

Because of the way their task is defined, administrative units responsible for pastoral livestock projects are not normally held accountable, even in formal terms, for the welfare of pastoralists. Moreover, their employees have little incentive to help pastoralists or view them as constituents, since the latter tend to be politically and geographically marginal, rural and undereducated, and with few exceptions belong to an ethnic and linguistic group that is poorly represented in national administrative circles. The sociocultural gap between pastoralists and officialdom has been exacerbated by the fact that most long-term training has been given to members of other ethnic groups and that its content has been narrowly technical and focused on conditions that are characteristic of livestock production in the West.

In short, the personnel of livestock units have had little background, training or rewards that would motivate them to deal sympathetically with the needs or aspirations of the pastoralists. Even in those cases where those responsible for administration of livestock development are highly motivated to help pastoralists, they are severely hampered by the fact that they generally are not able to plan resource management for pastoral land and water resources.

Ministries or agencies responsible for irrigation, agriculture and wildlife are often interested in making alternative uses of land and water resources in ways that have a major impact on pastoralists. Ministries of Health and Education have interests in sedentarization simply to facilitate their access to herders. Other ministries that are usually concerned with pastoral livestock projects include Finance, which is interested in raising exports for foreign exchange and tax revenues, and Interior (or its equivalent) which is concerned with security and with gaining better political control over nomads.

Donors themselves may have a variety of official interests, including environmental conservation, increasing the offtake, higher production, better quality meat, modified herd structure and raising the standard of living of pastoralists, though this last objective has figured more largely in rhetoric in recent years as a reflection of increased emphasis on basic human needs. Unofficially, it must also be recognized that there are strong pressures within donor organizations to have projects and hence to move ahead quickly once an initial decision has been made, to obligate funds in large sums, to please governing elites and to have project components that are visible to their political constituents.

Host country political leaders must try to respond realistically to all of the interest groups in the decision making arena. In most fundamental terms pastoral livestock development, like other kinds of development, is a political process involving the allocation of scarce natural and governmental resources. Pastoralists are usually marginal to the central political processes of the countries in which they live and are consequently accorded low priority in development.

#### THE APPROPRIATENESS OF PROJECT INPUTS

The problems that have been encountered with specific project inputs, illustrate the difficulties that have been analyzed in the earlier sections of this discussion and anticipate some of the organizational issues raised in the next section. The descriptions of project experience in this section are very concise and assume that the reader has read the previous sections. Comments will be particularly helpful if they identify and discuss instances in which the endemic problems dealt with here have been resolved.

## Settlement

In the past, a number of countries in Africa and the Near East have pursued policies, programs and projects designed to settle pastoralists in permanent residential communities. Some of these were designed to convert livestock dependent households into sedentary agricultural ones, while others were intended to provide a permanent settlement for the non-herding members of pastoral groups.

Agricultural settlement projects have variously had a number of different objectives. These have included: raising household productivity and income, reducing risk, resolving political problems, promoting the cultural and political integration of the pastoralists into national society, and reducing damage to the environment through overgrazing.

Experience in Ethiopia, Kenya and the Near East has shown that it is possible successfully to settle pastoral households and turn them into farmers, or at least landlords, provided they are given large enough holdings of (usually irrigated) land and subsidized, supervised inputs. There are, however, major drawbacks to this approach. The cost per household is so high that only a small proportion of the group can be settled, even if land and water are available for development. Projects involving irrigation often reduce the amount of dry season pasture and water available to pastoralists who have not yet been settled, causing hardship, inter-group conflict, and environmental degradation. Because of this reduction in dry season resources, pastoralists may be unable to utilize wet season pasture on the previous scale and the entire scheme may have very high, though unrecognized, costs in terms of lost livestock production.

The forced sedentarization of pastoralists unaccompanied by investment in infrastructure has resulted in starvation, hardship and degradation of the environment in settlement areas.

Experience has also shown that many households and groups depend on both crop production and pastoralism and that spontaneous population transitions towards more dependence on either form of production are not uncommon in West Africa and in the Near East. The direction of change appears to vary with the availability of resources depending in large part on rainfall and the returns to be realized as well as more particularistic factors. It should be emphasized that the assumption that pastoralists will settle down when they become more developed or that they will be better off when they settle down has not been borne out by experience.

Indeed, many marginal agriculturalists become pastoralists when they can afford to.

The settlement of pastoral communities or rather of their non-herding members near dry season pasture and permanent water, has been carried out in several places in order to give them access to social services and bring them under closer governmental control.

Rather limited experience from Tanzania indicates that this approach may be acceptable provided that the services are in place before resettlement, that people want to resettle and that the size and location of settlements is planned so that human and milking herd pressure do not erode dry season resources. From an ecological and economic perspective attempts to concentrate human and animal populations, in pastoral areas, are not justified at the present time and should be approached with great caution.

#### Range Management

Range management objectives and personnel have played a major role in many pastoral livestock projects. Recently, some of the assumptions on which current range management strategies are based have been called into question. For this reason, it is important for conference participants to review the present approach, its underlying assumptions, and possible alternative range management strategies.

A consistent objective of projects involving range management in pastoral areas has been to limit stocking levels to avoid over-grazing and not to exceed the carrying capacity of the range land and cause its degradation. Few projects are reported to be successful in attaining this objective.

The proponents of this objective, including many AID experts, maintain that whatever the situation may have been in pre-colonial times, for the political, demographic, economic and developmental reasons discussed above, stocking rates on most public range lands are so high that the productivity of the range lands is being degraded. The management of range lands, in this view, involves the planned utilization of a given area in order to optimize the value of animals or products produced on that land over a period of years. Through the management of range lands, using such techniques as rest and rotation of range sites, the productivity of each site can be enhanced over time. Optimum

management techniques vary with soil conditions, vegetation, rainfall and rainfall patterns, history of previous use, and various price and demographic factors.

From this range management perspective, it may be necessary to at least temporarily reduce stocking densities on some sites to allow natural vegetation to recover and the carrying capacity to become re-established at former levels. Once productivity has been re-established, it is held, the numbers of animal units which could safely be grazed on a given area without resource degradation would, in many cases, exceed current stocking rates. Further, because of substantially improved herd nutrition which would result, the output of product per animal and per unit area would be expected to increase substantially from current levels. For these reasons, range use management of this type is seen as critical to improving incomes and need not result in a permanent reduction in animal units.

While range management experts of this persuasion agree that there is much to learn about the technical aspects of range management in Africa and debate continues as to appropriate stocking densities for specific sites, they are in agreement that little can be done to improve herd productivity without some method of regulation of the numbers of animal units using given range land areas and the patterns of utilization in time and space.

Because of the misconception, discussed above, that overstocking and overgrazing are the inevitable result of public ownership of range resources and of long distance transhumance grazing patterns, another recurrent range management objective has been to restrict the movement of herds to specific locations and to initiate land tenure modifications. In the comparatively well-watered regions of East Africa, some range areas were subdivided and fenced and individuals were given lease hold or freehold title to the land. While some of these attempts have established viable commercial ranches, they are reported to have deprived many herders of access to their former lands. This problem is reported to have been exacerbated in the Ankole region of Uganda by the fact that the donor financed project triggered a more general enclosure movement.

Elsewhere in East Africa, attempts are being made to establish "group ranges" which give a group of herders corporate ownership and common interest in a fixed territory. Herd owners have responded favorably to these initiatives partly, it appears, because they recognize the need to secure their indigenous land rights against further encroachment. The ranches have encountered many difficulties,

in the more arid areas, including problems arising from random differences in wealth between individual herders at project outset, and the impossibility of keeping herds within the confines of group ranches during drought.

In general, it appears that range management inputs are most effective when they are based on pre-existing transhumant territories and patterns of movement, and work to modify and strengthen existing rights and restrictions. For this reason it should be recognized that while opening new lands through tsetse control may be a useful goal, all of the problems concerning stocking levels, herd, and range management that exist in "old areas" are likely to be even more acute in new areas where no indigenous systems of resource control and allocation exist.

Recently, two of the assumptions on which range management objectives are based have been questions. These concern the extent and causes of degradation, and the concept of carrying capacity. Since these technical issues have important and far reaching policy implications, they should be given serious attention at the conference.

The extent of degradation seems to have been frequently overestimated by outside experts who examine range conditions during the harshest period of the annual or multi-year cycle and who consistently underestimate its capacity to regenerate with the resumption of rainfall. It may also be that reports of degradation are enhanced by governments and donors for public relations purposes.

There is also a tendency for outsiders to assume that "overgrazing" inevitably causes degradation without giving sufficient attention to the types of grasses and use patterns involved. It appears, for example, that Sahelian annual grasses can be grazed do the ground, once they have gone to seed, and that they are not generally subject to degradation except where governments have put in public wells. Moreover, these grasses provide good forage, are near salt, and are in comparatively disease free areas. While they can only be used seasonally, they seem to have a large and as yet, unrealized potential.

Savannah annual grasses, on the other hand, are more problematic because they are found in areas with more water and denser sedentary populations. While pastoralists traditionally have moved out of these areas during the season of growth, settled agriculturalists are now keeping increasing numbers of livestock around their villages permanently, causing the most severe desertification in the region. Moreover, the situation is being exacerbated by the breakdown of

trust relationships, whereby agriculturalists formerly sent their herds to the Sahalian pastures seasonally with pastoralists.

Savannah perennial grasses, by contrast, are used by pastoralists as fall-back fodder during the dry season. They are not damaged by heavy grazing during this period but are rapidly degraded if they are grazed during the wet season, when the hooves of the livestock trample roots. Flood plain perennial grasses are similar and must not be grazed too soon after the recession of the annual flood. In Mali, where use patterns have been studied by ILCA in detail, traditionally regulated entry dates for these areas have been getting earlier under increasing pressure on trekking route water supplies by agriculturalists from nearby development schemes.

Issues concerning carrying capacity may have been greater implications for optimal range management strategies. In a seminal paper, Stephen Sandford distinguishes what he calls a conservative from an opportunistic pastoral strategy and argues that, while range management objectives have been of the former type, the opportunistic strategy, followed by many pastoralists is, under a wide range of conditions, far more productive.\*

He defines a conservative pastoral strategy as:

behavior which leads to a relatively constant number of animals grazing, but not overgrazing, an area through good and bad years alike, and producing a relatively constant level of economic output which may be directly consumed, exchanged or sold.

He also notes that:

Since the quantity of forage that grows in each period of time varies with rainfall in that period and since rainfall in dry areas is notoriously variable from year to year, a conservative strategy implies that livestock numbers are not allowed to increase during good years to utilize all the forage then available.

Sandford defines an opportunistic pastoral strategy as:

behavior which leads to the number of animals grazing varying according to current conditions, mainly in

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\* Sandford, Stephen; "Opportunism and Conservatism in Dry Areas;" Xth ICAES; Jodhpur 19-21 December, 1978; mimeograph.

accordance with the amount of forage available, which itself varies with the amount of rainfall. This strategy enables the extra forage available in good years to be converted directly into economic output (milk, meat) or into productive capital in the shape of a bigger breeding herd.\*

Most range scientists, Sandford points out, agree with the view that "a conservative strategy presents less risk of degradation to the environment," and hence favor it in their range management planning. This is reflected in the dictum of one expert that "carrying capacity is limited by the harshest period during the climatic cycle. For instance, the carrying capacity of the Sahelian desert areas would be limited to the number of animals able to maintain themselves during the driest year of the drought."\*\* Sandford then argues that, depending on the region and the length of the climatic cycle one chooses to use, the conservative approach reduces the average annual output of livestock up to 100%!

I will not attempt to adduce Sandford's entire argument here, but what he suggests is that under a wide range of conditions, it may be preferable to build on pastoralists' existing opportunistic strategies and to allow stocking levels to increase in periods of increased rainfall.

The critical problem in this approach to developing the potential of pastoral systems is to eliminate bottlenecks that restrict rapid marketing at the onset of drought (e.g., transportation, processing, working capital, veterinary regulations that prevent the rapid movement of herds, and size of final market) so that destocking can occur before the grazing system or livestock prices collapse\*\*\* Livestock programs geared to producing and marketing high value products cannot solve these problems because they entail high fixed capital costs in relation to output and hence require a steady supply to be economic.

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\* IBID, pp. 1-2.

\*\* IBID, p. 2.

\*\*\* As has been noted, the collapse of the grazing system may or may not lead to longer term environmental degradation, but it should not be assumed, as it often is, that it will.

If Sanford's conclusions are correct, they have far reaching policy implications, for it follows that in areas characterized by opportunistic strategies\* and hence fluctuating stocking levels, project emphasis should be on low value products, mechanisms for rapid marketing, and shifting the balance of incentives for pastoralists between destocking and retention during harsh periods.

### Range Water

The development of permanent sources of water in arid and semi-arid pastoral grazing zones is a seductive activity. To many host country officials, the lack of permanent water points appears to be an obvious constraint to achieving full utilization of range resources, and it aids in sedentarizing pastoral families. Permanent water supplies are at least initially popular with pastoral peoples (and hence with local government officials anxious to please or appease pastoralists). They are particularly popular with the largest herd owners, not infrequently government officials, who would otherwise be forced to move herds to locations where surface water is available.

Although in many areas water is available at depths that can only be tapped by motorized bore holes (a deep well requiring modern technology) the technology is known. It is easy to "projectize," it can absorb large amounts of capital and the results are dramatic and visible.

Despite these factors and its humanitarian appeal, it is now widely recognized that unlimited supplies of water from deep wells have caused over-concentration of stock, serious overgrazing, and probable environmental degradation in many areas. Indeed, the experience with wells provides the most dramatic proof that pastoral systems must be dealt with as systems.

In several countries programs are being designed to avoid past errors by "spreading" water from motorized wells through systems of pipelines (very expensive), enlarging or creating surface water supplies calculated to become exhausted before the surrounding forage has been overgrazed, and by constructing networks of small hand-drawn or animal-drawn wells. However, deep wells have not lost their appeal to host country politicians and donors from European countries with no expertise in arid land management. It is indeed tragic that in preparing this paper, I have encountered a number of instances where African countries are yet constructing large capacity wells with donor assistance without appropriate safeguards.

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\* These appear to be areas characterized by a high degree of variation in annual rainfall and a preponderance of small ruminants.

The most important lesson that can be drawn from experience is that additional range water should not be developed unless its use can be regulated. This regulation should normally be maintained by a viable local group, which in many cases means a pre-existing group. Indeed, reinforcing local control over water points, re-establishing and creating local control over "new" range water would appear to be a promising approach to problems of range management and overstocking.

### Modification of Herd Structure

Criticism of the herd structure is based on the assumption that African pastoralists keep unwarranted numbers of unproductive animals, such as old and sterile females and castrates, in their herds and flocks. Analysis of data indicates that existing herd structures are generally reasonable, given existing African herd owner incentives:

1. Mature livestock tend to be hardier in time of drought or disease than younger animals and hence are kept for risk aversion; and

2. Older animals, particularly castrates, may be used as pack animals and may have a calming influence on the entire herd, and hence save labor during critical transhumant migrations.

Moreover, micro-economic analyses carried out in the Sahel indicate that, under actual production cost and marketing conditions, it would be uneconomic for herdsmen to sell immature livestock, rather than range mature animals.

Several West African livestock projects have as an objective to reduce overgrazing in the Sahel by encouraging the sale of immature stock to be grown out in higher rainfall ecological zones. There are a few examples of function systems of this type (see Ferguson Chapter IV and V for a more detailed discussion.) Critiques of this approach maintain that these efforts are unwise because:

1. Southern latitudes are unsanitary and unhealthy for most Sahelian breeds, particularly during the rainy season--at present tsetse eradication does not hold much prospect of changing this situation.

2. Southern pastures deteriorate much more quickly than Sahelian ones when grazed, particularly during the rains, when the wetter ground in the south is more vulnerable to the stomping effect of the animals;

3. Sahelian pastoralists depend on southern pastures for dry season grazing; therefore, it is in their interest to leave these pastures unused while surface water points are available to them in the north; and

4. Southern pastures are in close proximity to farms leading to conflict when animals browse growing fields.

### Livestock Health Services

Experience with livestock health services, has been similar in some respects to that with range water. It is desired by beneficiaries and effective in reducing mortality and morbidity. However, it can and does assist in accelerating herd growth and, without changes in the management of a pastoral system, contributes to overstocking and resource degradation.

Nevertheless, it would not be feasible to eliminate vaccination programs which presently control communicable diseases. They are low cost per animal protected and are an effective way to contact and gain the confidence of pastoral people in remote areas.

A critical problem of host governments is to provide the recurrent costs for veterinary health programs. It may be possible in many situations to establish user fees at a high enough rate to cover most, if not all, input, purchase, and distribution costs. Livestock owners have repeatedly shown their willingness to seek out and pay for veterinary services. Moreover, veterinary extension workers have little incentive to serve herders unless they are rewarded for the service they actually deliver.

It may be possible to train practitioners or to provide incentives to extension workers to provide certain services. Herds are widely dispersed over a wide area and relatively little supervision can be provided to veterinary staff. It may be possible to allow them to buy some items such as acaricides (pesticides) and trypanocides for resale at well-publicized prices. This approach has been tried with some success in basic human health programs and reflects the consistent finding that subsidized services, credit, and commodities are extremely difficult if not impossible to deliver to the lowest income people and groups in remote zones.

For political and bureaucratic as well as philanthropic reasons most host country governments are reluctant to charge user fees for veterinary or other services or to permit, much less encourage, competition between extension workers. Nevertheless, this approach to the provision of low-cost services should be given more attention in projects and programs.

## Marketing

Programs intended to reduce marketing costs are part of a strategy intended to increase offtake (particularly of immature livestock), to increase the price of livestock at "farm gate" and herder income and to improve the overall productivity of the livestock sector.

The disappointing performance of campaigns to jaw-bone owners to sell more animals to cause destocking of rangelands can be attributed in large part to the fact that they are not based on accurate micro-economic data on the economic world of the herdsman or an understanding of existing livestock marketing systems. The evidence is clear that marketing decisions are not significantly skewed by "cultural" predilections. The services provided and efficiency of existing livestock marketing systems are also underestimated. In every case of which I am aware, in-depth anthropological and micro-economic research has revealed that herders' failure to respond positively to non-monetary marketing incentives can be accounted for by the fact that it would not be in their economic interest to do so.

Reducing range-to-market transportation costs has been shown to stimulate livestock sales. Unfortunately, most efforts to provide public participation in the transportation of livestock or carcasses have been based on inaccurate estimates of numbers of available for purchase, and an overestimate of the cost, hazards, and effects on livestock of trekking. Assisting the private trade to reduce transport costs by any means, including the provision of water, pasture (fodder), and inoculation, still appears to be the most cost-effective means of reducing marketing costs.

Marketing boards have been established in some countries on the stated assumption that the supply of animals to deficit markets can be increased by stabilizing prices thus reducing price uncertainties for the producers. Experience indicates that, as has generally been the case with other commodities, marketing board interventions have not achieved these objectives. Moreover, the marketing board controls and unofficial gratuities associated with their operation have tended to squeeze herders and the middle-range and smaller traders out of the market place, leaving it dominated by larger traders and marketing board agents. This trend towards monopsonistic marketing systems would be expected to depress producer prices. In some instances, producers have been found to be holding more animals while waiting for the proper black market opportunity!

There has been an assumption that there are "too many middlemen" in the livestock trade each taking a small markup and thus reducing prices received by producers. As with other commodities, research and experience has shown that private traders have lower costs than

parastatals or other government entities and that they provide better marketing service to producers when they are in competition with one another. Schemes that restrict or reduce the number of middlemen can be expected to result in higher costs and less efficient marketing of livestock.

In some areas projects have installed marketplace infrastructure on the assumption that remote location and movement of herds prevented access of urban market demand. Experience with public intervention has not been encouraging. Studies have shown that private traders make it their business to know a great deal about the movements of animals at various times of the year. It costs the merchant very little to walk the purchased animals to a market closer to transportation infrastructure. Moreover, many sales have been found to take place at remote points of the transhumance because of the absence of government marketing controls. The producer often receives a higher price from the traveling merchant than that he can obtain in an established official cattle market. The installation of scales in cattle markets has also been found to have little significance, since many factors affect price other than the weight of the animal. Experienced cattle traders are experts in estimating the approximate value of animals without precise weights.

Some projects have directed mass media broadcasts of market information to pastoralists on the assumption that herd and flock owners would sell more surplus animals if they were better informed about the flux of far-away market demand. Research has found that current price information in marketing centers reaches even remote producers in approximately two days. It is unlikely that better price information will have significant effect on sales.

In sum, it appears that, except for improvements in transport and trekking water points, programs introduced to facilitate the livestock marketing have generally been ineffective and in some cases have introduced regulation and distortions that are counter-productive.

### Training and Extension

Training a cadre for extension is a major component of most livestock projects, on the assumption that it is necessary if services are to be delivered to pastoralists and they are to be taught better range and herd management practices. While projects are often successful in identifying and training participants and placing them in bureaucratic positions, several factors seriously reduce their developmental effectiveness. The most important of these are that:

1. trainees are often from agricultural or urban backgrounds and from a different ethnic group from the project beneficiaries;

2. the content of the training is generally narrowly technical and has little relevance to the complex economic, ecological and sociological problems that actually face pastoralists;

3. training generally enhances the attitude that herdsmen are ignorant and follow inefficient practices because of blind tradition;

4. extension workers have few immediate or long-term career incentives to deliver services to pastoralists; and

5. extension workers are accountable to centralized urban-based bureaucracies, rather than to pastoralists and in some instances have abused their authority by exercising it for their personal gain.

The proliferation of salaried government employees also creates recurrent costs that are hard to justify and may not be sustained after the end of project funding. As far as I know, there have been no comparative studies of efficiency, effectiveness, or relevance of these extension service cadres.

### Research

Total expenditures for livestock research appear to be very small in relation to the contribution of the sector to the African economy. Furthermore, much of the research in the past has focused on interventions that were primarily of value to commercial producers, while their relevance to pastoral systems seems to be limited. Improved breeds of livestock for example are generally less hardy and well adapted to contemporary African conditions than existing breeds. Moreover, it appears likely that the productivity of present livestock, at least in regions of the Sahel, can be increased greatly by marginal and inexpensive improvements in feeding, trekking and pricing. Much herd management research in francophone countries has been based on the unrealistic assumption that livestock will or should stay in the same locality throughout the year. This has, in some instances, led to the creation of expensive "hot house" research stations in Sahelian zones occupied by transhumant pastoralists for only a few weeks each year.

The International Livestock Centre for Africa is an exception to most of these generalizations and has been actively pursuing a program of multi-disciplinary research aimed at improved understanding of pastoral systems. It is, therefore, important for the conference to review both their approach, their findings, and the implications of these findings. The Center for Research on Economic Development at the University of Michigan is currently completing excellent in-depth studies, livestock production and marketing in West Africa which promises to make a major contribution.

# THE EFFECTS OF THE ORGANIZATION, STAFFING AND PROCEDURES OF DONOR AGENCIES

## The General Problem

The organizational, staffing and procedural problems identified in this section are not confined to pastoral livestock projects or to AID, though some of them may be particularly acute in projects of this type. Indeed, they appear to be so severe that donor agencies may need to re-examine their whole approach to technical assistance intended to foster broadly participatory development by enhancing the performance of indigenous production systems.

Despite recent improvements, AID and other major donors' approaches still have a narrow, technology import orientation that does not take adequate account of the strengths and weaknesses of pre-project systems of production and distribution. Little attention is normally given to the efficiency, environmental effects, labor requirements, or the interrelations of existing technologies. Little attention is normally given to people's income and risk aversion strategies, or to the way they perceive their problems or the ways they are organized to deal with these problems and obtain access to scarce natural and governmental resources.

As a result of this tech fix orientation, all too often projects begin with the selection of one or more "off the shelf" technical inputs developed for use in a radically different setting. Subsequent design efforts center on justifying the initial choice and solving logistic problems pertaining to input delivery. The delivery of inputs tends to be seen as the goal of the project and monitoring and evaluation efforts focus on them rather than on the economic, environmental, or social impact of the project.

What is particularly discouraging about this tech fix syndrome is that it has been recognized as a general problem for a least two decades, yet little has been done about it. For this reason, it is particularly important that the conferees at the AID livestock conference identify and discuss pastoral livestock projects that, from their inception, have made innovative efforts to gather and use in-depth information about pastoral systems and their problems.\*

Donor personnel, contracting and implementation procedures further reduce the chances of success by making it likely that the same individuals or firms will not be responsible for design

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\* Projects of this type include USAID's Niger Range and Livestock project.

and implementation, by creating endemic problems of coordination and logistics, and by allowing considerable "drift" in project objectives. Nor do donor management incentives encourage field staff to give sufficient attention to project implementation. Finally, monitoring and evaluation procedures, though improving, still tend to focus on input delivery rather than their effects on people, on livestock, and on the range.

### Problems in the Design and Implementation of Pastoral Livestock Projects

Regardless of whether their objectives are primarily production oriented, environment oriented, or people oriented AID classifies all of its pastoral zone projects in the livestock sub-sector of agriculture. Because of the professional background and experience of host country persons, donor specialists, consultants, and contractors working in this sub-sector, livestock production and land use management, rather than the nutrition, health, security, or income of pastoralists, become project objectives. In the words of one senior AID official, "Cattle rather than people are treated as the target population."

Furthermore, because of the experience of those involved, the primary focus of livestock projects is almost invariably on cattle, rather than sheep or goats, and on beef production, rather than dairy products (including ghee and cheese) or hides. This is true regardless of pastoralists' actual pre-project income sources and strategies, the risks to which they are exposed, or the ways they cope with them.

The composition of most project design and implementation teams reflects these biases and is subject to the decisions of field and home office personnel, who are generally not familiar with pastoralism. In the ensuing process of project design, economic and institutional considerations tend to be subordinated to the more immediate task of providing specific and concrete technical inputs related to the consultants' subject specialties.

Factors that contribute to poor projects are bureaucratic deadlines and pressures, problems of coordination and logistics, and in some cases, failure to include design team members familiar with local languages, cultures and conditions. The duration of the design period—often only a month or two—militates against data collection for analysis that should cover, at a minimum, a full transhumant and cropping cycle.

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Critically important economic and financial analyses resulting from this design process tend to be centered narrowly on beef production and range management, rather than on relations of production and marketing in the existing pastoral system. Frequently, implicit assumptions are grounded in experience with modern commercial beef production and range management systems found in the United States, Canada, or Australia. Maco-economic analysis tends to displace micro-economic analysis in project documents, and technical analyses assume that existing technologies result in low productivity per man hour, per head, and per land area unit without examining their economic, social, or political context. Consequently, existing technology and socio-cultural factors are treated as constraints to be lifted, rather than as the base of existing production, interest and motivation to be improved, strengthened and build upon. Institutional factors are generally relegated to a special section of the project paper which describes the existing structures and which has little bearing on the project's design. Rarely are the socio-economic analyses and the implementation plans combined in a coherent manner.

The task of the design team and implementation team is made still more difficult by the fact, noted earlier, that AID policy objectives, field mission strategy, host government desires and pastoral interests may all be different.

As a result of this compressed design process, project inputs are often inappropriate and, therefore, ineffective and inefficient in achieving planned objectives. Some inputs may be irrelevant and projects may be unacceptable in terms of herd owners' interests. Some inputs are desired by individuals but cause or exacerbate problems in the pastoral system since they are not combined with effective management of resources. Some inputs have logistic and management requirements that cannot be sustained by the host government after project funding ends.

It is interesting to hypothesize that a fundamental problem with most pastoral livestock projects has been the failure to sufficiently involve pastoral groups, through their existing organization, in design and implementation in such a way that they will have the means and significant responsibility for maintenance and recurrent costs and for the regulation of the resources created by the project. While such participation is always desirable, it appears to be particularly feasible for pastoral projects, since pastoral groups usually have some indigenous organizational capacity to manage resources and since livestock owners can raise considerable sums through sales. Although there is some evidence that pastoral groups have the organizational and the fiscal capacity to participate in projects in this way, they have not generally been given a chance to do so.

## POLICY ISSUES

Five types of policy issues face the Agency:

1. Should AID continue to support pastoral livestock programs and projects if it does not fundamentally alter its approach?
2. Under what host country conditions should AID undertake such projects?
3. Are there any inputs or organizational features which should never be included in projects, should always be included or should be included only in particular combinations and/or sequences?
4. Should AID modify its objectives in pastoral livestock projects?
5. Should AID modify its procedures for classifying, designing and implementing pastoral projects?

The first set of issues concern the poor performance of pastoral livestock projects and whether AID should continue to obligate funds for livestock projects of this type. In answering this question, conferees should attempt to evaluate both the positive and negative impacts of project interventions and whether or not AID activities are contributing to environmental and institutional distortions (such as growth of counterproductive bureaucracy) that will make it still harder to solve the problems facing pastoralists in the future.

The second set of issues involves host country policy. They concern the extent to which the host government recognizes the nature of pastoral systems, their problems and potentials, and has the political will and the administrative capacity to deal with them realistically. More specifically which, if any, of the following conditions should be prerequisites for further AID funding of pastoral project interventions?

- a. existence of a range policy incorporating ecological guidelines.\*
- b. existence of legislation to regulate land use based on the recognition of pastoralists' rights to range and water.\*

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\* These points are from the joint FAO/UNDP experts' consultation, The Ecological Management of Arid and Semi-Arid Rangelands in Africa and The Near East (Rome, 1974).

c. existence of an executive agency with the authority to coordinate all interdepartmental activity in the zone to be affected (including veterinarian health, water development, forestry, and irrigation)\*

d. existence of a long-term development plan based on adequate ecological and socio-economic studies.\*

If any of these preconditions are considered essential prerequisites to the funding of pastoral livestock projects, what type of assistance should donors give to host countries so that they will be able to meet them?

3. The third set of issues concern the appropriateness of specific approaches and inputs.

a. In the absence of comprehensive plans and commitments, are there specific interventions that should not be funded, such as: (1) range water development schemes; (2) broad spectrum veterinary health services; (3) marketing boards and price stabilization programs; and (4) the training of extension workers.

b. Are there elements that should always be included in pastoral livestock projects, such as: (1) the participation of pastoralists in problem definition, design, implementation, monitoring and evaluation; (2) building on existing range management systems and existing forms of social organization to make them work; (3) requiring existing local groups to contribute to the capital costs and the recurrent costs of the services they receive; (4) requiring that community level extension workers be selected for training by the community and be accountable to it for the services they provide; (5) designing training programs that would not require formal secondary school education as an entry requirement; (6) requiring that members of the pastoralists' ethnic group be trained for responsible positions in the project authority.

c. Are there general findings about the combination, timing, or sequencing of frequently-used inputs that should be incorporated into pastoral project policy guidelines?

4. The fourth set of issues concerns the redefinition of program and project objectives.

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\* These points are from the joint FAO/UNDP experts' consultation, The Ecological Management of Arid and Semi-Arid Rangelands in Africa and The Near East (Rome, 1974).

Changes in AID's legislation and policy that call for greater attention to the needs of low-income people and to environmental issues are not yet well reflected in the objectives (as measured by budgetary allocations between inputs and technical services) of many of the Agency's livestock projects.

In light of the findings summarized in this paper, the Agency should consider making the well-being of pastoralists and the ecologically sound management of the resources on which their present and future well-being depends primary project objectives. If pastoralists, rather than livestock, are to be the direct beneficiaries of projects, it would follow that: (1) projects should be identified only after there has been an assessment of the problem actually faced by particular groups and categories (e.g., women, herders without livestock, particularly ethnic groups) of pastoralists and with their perception of these needs; (2) socio-economic feasibility studies would focus on understanding pre-project production systems and income strategies, rather than on constraints to beef production and marketing alone;\* (3) possible project interventions should be broadened to include the provision of those human services or consumer goods which are locally desired and which individuals or groups are willing to support.

5. The last set of issues concern AID procedures and organization.

a. In order to focus projects on people, would it be desirable to change the way they are classified so that they do not fall into the livestock sub-sector? If so, how should they be classified or should a special category be created which would call for a unique combination of design and implementation skills?

b. Whether or not a new classification category is established, should the Agency specify the skills that must be included on design teams and the issues to be addressed in feasibility studies?

c. Should the Agency specify the types of experience and skills that must be included in the staffing pattern for project implementation and the types of skills to be included in participation training? If so, what qualifications should be required?

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\* This approach is necessary even if project objectives focus primarily on production.

d. Should the Agency adopt or establish minimum requirements for social, economic, demographic and environmental monitoring that must be included in all pastoral projects? If so, can ILCA provide AID with acceptable guidelines?

e. In view of the difficulty that has been encountered in the past in getting new findings into project design and implementation, should the Agency establish a special group of direct hire and contract people that would oversee or participate in AID's pastoral projects?

f. Are pastoral livestock projects too complicated or long term for AID design, staffing, and implementation capacity?

g. Does the USA have expertise in this area? If so, where does it exist? How can the skills and experience of experts in different subject areas best be integrated?

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