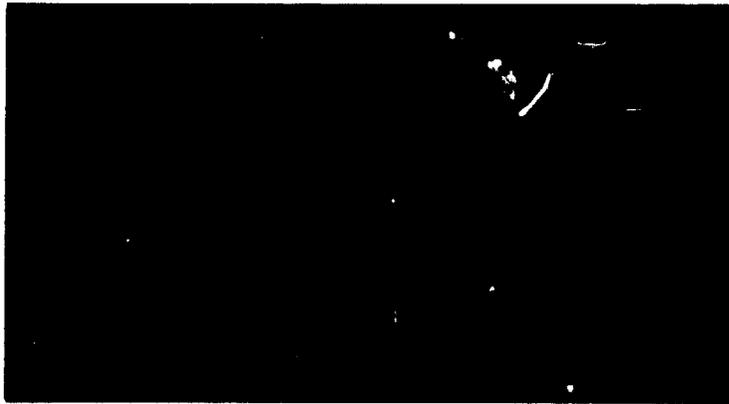


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THE WORKSHOP ON DEVELOPMENT AND
AFRICAN PASTORAL LIVESTOCK PRODUCTION

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Summary

I. INTRODUCTION

The Workshop on Development and African Pastoral Livestock Production, held in Marriottsville, Maryland in November 1981, brought together some forty specialists from the Agency for International Development, the private sector, universities, and other development agencies and organizations, to help formulate a strategy to guide AID's investment in the African livestock sub-sector. The positions advanced in this report emerged from Workshop discussions and presentations.

II. GUIDELINES FOR AN AFRICAN LIVESTOCK DEVELOPMENT STRATEGY

In drafting the livestock development strategy guidelines, workshop participants emphasized that livestock be seen as a component of an overall African strategy to increase food production and to improve food distribution systems. The constraints to African livestock development and the components of a strategy identified at the workshop which received a general consensus from the participants are summarized below.

Guidelines Summary

1. Nature of the Livestock Development Problem in Africa

1.1 Low productivity, given its potential

1.2 Constraints to livestock development (in order of priority)

1.2.1 Policy

1.2.1.a. Inadequate host government policies and programs

1.2.2 Institutional

1.2.2.a. Poor institutional capacity to implement livestock programs

1.2.3 Research

- 1.2.3.a. Inadequate information base (ecological and social) for technical packages, particularly in respect to range management.
- 1.2.3.b. Lack of clearly defined, economically feasible technical package.

1.2.4 Technical

- 1.2.4.a. Paucity of animal feed and poor animal nutrition.
- 1.2.4.b. Inadequate animal health services

1.3 Criteria for appropriate investments in animal-based versus mixed production enterprises

2. Framework for a Livestock Development Strategy

2.1 To improve the national policy environment

2.2 To develop long-term livestock programs

2.3 To develop host country institutions

2.3.1 To support national research institutes with multi-disciplinary foci

2.3.2 to support agencies that disseminate improved animal husbandry and veterinary practices

2.4 To strengthen local-level producers' organizations in the private sector by placing infrastructure management and cost recovery more squarely in the hands of these organizations.

3. Implementing the Strategy

3.1 To review national policy.

3.2 To implement longer-term, more flexible support programs than is normally practiced under project financing.

3.3 To increase the number of trained host government personnel who will manage livestock-related research and service institutions in their host countries.

3.4 To locate more project investments in local-level producer organizations.

III. GUIDANCE FOR THE IDENTIFICATION, DESIGN AND EVALUATION OF AID LIVESTOCK PROGRAMS AND PROJECTS

It was suggested in the issues paper and at the workshop that certain key indicators can be identified in each pastoral area of Africa. These indicators, in turn, can be used to inform upon project identification and design. The following are the most significant variables for project identification and design:

1. Relevant Indicators for Project or Program

- A. National policy environment
- B. Reliability of rainfall and environment
- C. Mobility of population
- D. Institutional capacity
- E. Income or wealth distribution among households
- F. Diversification of the regional and household economy
- G. The degree of direct dependence on pastoral products for subsistence and the role of non-pastoral foods in the diet
- H. The level of livestock development infrastructure

2. From Identification to Project or Program Objectives and Components

The identification and evaluation of these key indicators should inform project personnel of appropriate objectives and design for the particular activity. They should also indicate when project assumptions are misinformed or when they conflict with the objective of increasing the "well-being of the herder".

3. Evaluation.

The success of flexibly designed livestock programs depends to a large extent on timely and appropriate evaluations. It is important that evaluations of livestock programs not be limited to a mid-term and "final" evaluation (the latter of which is often planned for an unrealistically early date, conforming to the 3-5 year implementation cycle). If possible, evaluations should be incorporated in the program perhaps in the form of a monitoring unit.

IV. DISCUSSIONS

There were a number of issues discussed at the workshop which cannot be adequately covered within the limits of a strategy or program guideline. These are topics which often led to lively debate and to some degree remain unresolved.

Much of the discussion centered around three general issues:

1. "Animal-based" production systems versus "mixed" production systems;
2. Land tenure and grazing control; and
3. Production and equity.

I. INTRODUCTION

The Workshop on Development and African Pastoral Livestock Production¹, held in Marriottsville, Maryland in November 1981, brought together some forty specialists from the Agency for International Development, the private sector, universities, and other development agencies and organizations, to help formulate a strategy to guide AID's investment in the African livestock sub-sector. The Marriottsville Workshop followed-up on the September 1979 Workshop on Pastoralism and African Livestock Development, held at Harpers Ferry, West Virginia. The earlier assembly examined the principal social, economic, and environmental assumptions that underlie livestock interventions in semi-arid and arid zones in Africa. Though it identified several problem areas of pastoral development, the three days allotted for the meeting and the state-of-knowledge at the time were insufficient to relate all the findings to several pertinent policy issues. The Marriottsville Workshop described in this report assayed to translate many of the ideas and problematics expressed at Harpers Ferry into guidelines for a sub-sectoral strategy.

Four papers -- the first of which was written specifically for the Marriottsville Workshop -- provided in advance to participants, served as background materials for discussion:

Peter D. Little

1981 "Toward a development strategy for Africa's pastoral sector: an issues paper," Institute for Development Anthropology.

¹ The phrase "pastoral livestock production systems" encompasses systems in environments where rainfall does not exceed 1200 mm per annum. It does not exclude mixed production systems where cropping may account for as much as fifty percent of rural income. It includes systems which produce only one species of ruminant livestock (camels, goats, sheep or cattle) and those which produce several or all of them.

Michael M Horowitz

1979 "The sociology of pastoralism and African livestock projects,"
Program Evaluation Discussion Paper No. 6, AID/PPC/E.

Institute for Development Anthropology

1980 "The workshop on pastoralism and African livestock development,"
Program Evaluation Report No. 4, AID/PPC/E.

Agency for International Development

1981 "Africa Bureau food sector assistance strategy paper," AID/
AFR/DR/ARD.

Workshop participants were invited to comment on the issues paper and, along with workshop discussions, the substance of many comments has been incorporated in this report.

Discussions with Africa Bureau officers prior to the workshop indicated a desire that (1) guidelines for an African livestock development strategy be drawn up based on workshop findings and (2) some guidance be given for the actual identification, design, implementation and evaluation of AID-funded livestock programs. In short, the objectives of the workshop were as follows:

- (a) to facilitate the drafting of an Africa Bureau livestock development strategy statement;
- (b) to provide guidance for Africa/USAID Mission Country Development Strategy Statement descriptions and analyses of the pastoral and livestock producer components of the rural poor; and
- (c) to provide guidance for the identification, implementation, monitoring and evaluation of AID-funded programs and projects in Africa.

All of these issues were discussed at the workshop, the major effort was devoted toward guidelines for an Africa Bureau livestock development strategy.

To reflect these objectives, the present report is organized at two different conceptual levels. First, there is the sub-sector strategy level indicating the general components of an African livestock development strategy. Second, there are the project or program-level considerations that provide guidance for identification, design, implementation and evaluation of African livestock projects and programs. While there is an obvious interface between the two, the former should be viewed at the more general policy-level and the latter in the context of specific actions. The strategy guidelines logically should inform upon program and project objectives. Guidance for the analyses of the pastoral and livestock producer components of the rural poor is provided at both the strategy and the program/project levels.

Since the sessions formed a workshop rather than a conference, no formal papers were presented. The sessions were organized with the goal of eliciting from discussion guidelines for a livestock development strategy for Africa. The agenda was thus limited to those topics (policy, institution building and research) pertinent to an informed livestock development strategy. Participants voiced opinions on a number of different issues, many of which were ventilated in the issues paper. There was a gratifying convergence of opinion on most issues. This was well illustrated in Session IV (see Appendix I) when spokespersons for the three case study groups (Mali, Niger and Kenya) concurred that substantial pre-intervention research, institution-building and participation among beneficiaries should be stressed in an African livestock development strategy, and are unfortunately often slighted in the design cycle. In two of the three projects examined in detail insufficient information resulted in

flawed design. In this report, areas where consensus among participants was not achieved will be pointed out; no effort was made at the workshop, however, to measure precisely the arena of difference on any issue.

II. GUIDELINES FOR AN AFRICAN LIVESTOCK DEVELOPMENT STRATEGY.

Workshop participants did not agree on where in Africa AID should focus its assistance. Some favored the lower rainfall, pastoral regions, while several persons sought to limit investments to the so-called higher potential, mixed farming areas where annual precipitation is in excess of 1000mm. Fragmentary and often contradictory statistics were proffered in support of competing claims for the numbers of animals located in the two zones, and consensus was not reached on the actual quantitative importance of low-rainfall animal-based systems vis-à-vis the higher rainfall mixed animal/crop systems. Table 1 presents recent estimates of the distribution of livestock and human populations found in the different climatic/ecological zones of Africa.

Table 1

Livestock Population in Different Ecological Zones in Tropical Africa*

Zone	Livestock Population (10 ⁶ TLUs)**	% Total	Human Population (x10 ³)	% Total
Arid	40.2	30%	25.0	7%
Semi-Arid	36.4	27%	50.5	14%
Sub-Humid	27.6	21%	274.5	79%
Humid	7.3	5%		
Highlands	23.0	17%		
	<u>134.5</u>	<u>100%</u>	<u>350.0</u>	<u>100%</u>

* Based on ILCA Bulletin No. 13, September 1981 and Kates, R. W., D. L. Johnson and K. Johnson Haring, Population, Society and Desertification, UN Conference on Desertification, 1977.

** TLU (tropical livestock unit) is equivalent to 1.43 adult bovines, 8.33 sheep, 8.33 goats, or 1 camel, or 250 kg. liveweight.

As the table indicates, in Africa more than half the livestock units and a fifth of the human population are in dry (arid and semi-arid) regions; in the semi-arid areas some of the stock units and human population are in mixed-farming rather than purely pastoral zones.

Because of the numerical importance of the arid and semi-arid areas in terms of both livestock and human population, most participants favored continued investment in these regions. This is especially important for those African countries, like Somalia and Niger, where livestock production occurs mainly in low rainfall areas. The recognition that much of Africa's livestock wealth is located in the drier areas does not preclude livestock investment in the higher rainfall areas. As participants noted, the linkages (in trade and grazing) between the animal-based and mixed farming areas are such that a focus on one at the expense of the other may distort the true picture of a country's livestock sub-sector. The occasional meat consumed by the urban poor in higher rainfall areas is usually produced in the drier zones.

It was suggested initially in the issues paper and reiterated at the workshop that the complexity and diversity of Africa's livestock sub-sector is so great that a single development strategy representative of all the livestock producing regions is very difficult to formulate, and might be so general as to provide little effective guidance for action. As one participant remarked, "Such a task would involve from ten to twelve different strategy statements." It was agreed nevertheless that guidelines for a single strategy paper could be provided, premised upon the need to improve food production and food distribution systems in rural Africa. Livestock is seen as an important component of the agricultural sector and as a component of an overall African

strategy to increase food production and to improve food distribution systems.

The constraints to African livestock development and the components of a strategy identified at the workshop which received a general consensus from the participants are summarized below. In subsequent sections of the report the strategy components are discussed in greater detail.

Guidelines for an African Livestock Development Strategy: Summary

1. Nature of the Livestock Development Problem in Africa
 - 1.1 Low productivity, given its potential
 - 1.2 Constraints to livestock development (in order of priority)
 - 1.2.1 Policy
 - 1.2.1.a Inadequate host government policy and programs
 - 1.2.2 Institutional
 - 1.2.2.a Poor institutional capacity to implement livestock programs.
 - 1.2.3 Research
 - 1.2.3.a Inadequate information base (ecological and social) for technical packages, particularly in respect to range management.
 - 1.2.3.b Lack of clearly defined, economically feasible technical package
 - 1.2.4 Technical
 - 1.2.4.a Paucity of animal feed and poor animal nutrition
 - 1.2.4.b Inadequate animal health services
 - 1.3 Criteria for appropriate investments in animal-based versus mixed production enterprises
2. Framework for a Livestock Development Strategy
 - 2.1 To improve the national policy environment
 - 2.2 To development long-term livestock programs
 - 2.3 To develop host government institutions

2.3.1 to support national research institutes with multi-disciplinary foci

2.3.2 to support agencies that disseminate improved animal husbandry and veterinary practices.

2.4 To strengthen local-level producers' organizations in the private sector by placing infrastructure management and cost recovery more squarely in the hands of these organizations.

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3.1 To review national policy.

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3.4 To locate more project investments in local-level producer organizations.

* * * * *

1. The Nature of the Livestock Development Problem in Africa.

The constraints and factors cited in this section are dealt with under the four general headings that oriented workshop discussion: policy, research, institutions, and technical considerations.

1.2.1 Policy. It is recognized that host government policies regarding land tenure, marketing, and other policy-oriented issues may be as severe as the technical constraints to increased herder income and food production. Policy constraints should be taken into account before project investments are made. For example, production incentives may be limited by unfavorable pricing policy, both for meat (including live animals) and grain. Under such conditions efforts to improve herder income may have negligible outcomes. Investments in livestock

marketing should be cognizant of the grain distribution system, since increased livestock sales among herders are in part dependent upon the herders' ability to buy agricultural products (non-pastoral foods) at fair prices. One of the findings of the current AID Niger Range and Livestock I project is that Wodaabe and Tuareg herders in the project zone identify affordable millet as the principal desired outcome from the intervention, rather than, as might be expected, improved animal health or improved range production.

Perhaps the most critical national policy area regarding livestock development in Africa is land tenure. This is particularly true for the animal-based systems of the semi-arid areas. Most African governments do not have clear land tenure policies for the pastoral areas in general, and there are often gross discrepancies between formal (i.e., governmental) and effective (or locally recognized and accepted) land tenure systems. For the producer, this creates uncertainties regarding access to water and to dry season graze. Such a situation is well illustrated in the Malian rangelands, where major constraints on increased livestock production are dry season bottlenecks, such as shortages of feed and water. Among the herders, insecure tenure arrangements exist for both these critical resources. Lack of government policy for livestock development in Mali (as elsewhere) has resulted in the gradual loss of these critical resources to alternative land use forms (i.e., large-scale crop production). Rather than reducing producer uncertainty, the government's position, or non-position, has further complicated herder decision-making in a context where risks are already great due to climatic variables.

1.2.2 Institutions. There are few African countries that have the institutional capacity to conduct adequate research and to monitor on-going livestock development activities. Donor organizations have not focused enough attention on improving African government institutional capacities to conduct their own livestock-related research and to allow that research to inform on livestock development programs. Not only are the research and monitoring capacities rudimentary, few African countries have either the personnel or the institutional infrastructure adequately to implement projects however they may be designed. Consequently, AID livestock projects in Africa often find themselves without an "institutional home" in host countries. This then results in a lack of continuity in livestock sub-sector activities as well as in a limitation of the host government's ability to learn from these activities.

There are also a number of local producer organizations and institutions in the private sector which could benefit from an enhancement of their management and implementation capacities. Many of these local or intermediate level organizations are charged with activities such as water management, livestock and milk marketing, and, in a few cases, the provision of veterinary supplies. The recent trend in AID toward decentralizing investments and thus locating them at sub-national levels has meant that such producer organizations are more involved with implementation activities. This emphasis on locating investments more squarely in the hands of local institutions should be encouraged in livestock development programs. It also suggests that they be effectively supported prior to the implementation of specific livestock development activities.

1.2.3 Research. Lack of adequate information on existing pastoral and mixed-farming production systems remains a major constraint to livestock develop-

ment in Africa. Project assumptions regarding the nature of the African range and herder populations are often misinformed due to the lack of adequate prior investigation. This is particularly true in respect to range management projects, which are often implemented without a good understanding of either the ecology or spatial economy of the pastoral system. Moreover, problems frequently emerge during implementation attributable to an inadequate internal project research capacity for monitoring and readjusting activities as new information is gathered and new understandings are achieved.

1.2.4 Technical Considerations. African livestock production is constrained by poor animal health and, particularly in the dry season, poor animal nutrition related to the scarcity of dry season grazing. In some areas of Africa, lack of stock watering facilities also limits production. While it is difficult to confront these constraints in isolation from each other (for example, poor animal health is very much a function of poor nutrition), a proven technical package to improve production is limited in that it only includes veterinary and water development and does not include cost-effective measures to overcome animal nutrition bottlenecks. These nutrition constraints, as noted above, are usually a result of inadequate year round grazing. Range management procedures practiced in the Western United States have not proven to be successful in Africa in improving range condition and hence animal feed. There is still a firm belief that a range management technical package or packages that are ecologically, economically and socially sound can be developed. But at present they are experimental. Successful technical interventions in pastoral Africa in the near future will probably remain in the veterinary field and, to a lesser extent, water development. High calf mortality rates (often caused by poor nutrition) and contagious diseases are major constraints to livestock

production in Africa and imply a continued role for animal health assistance in Africa. But even veterinary interventions would profit from an enhanced participation of the herders in the identification of animal health issues, and more attention should be paid to involving the herders as active participants in veterinary efforts (D. Sandford 1981).

2. Framework for a Livestock Development Strategy and Its Implementation.

A strategy for the development of Africa's livestock sector should emphasize investments in three different areas. The components of the strategy and their relevance to implementation are described below. Note that this section combines 2 and 3 in the strategy guidelines outlined on pages 6 and 7.

2.1 The Improvement of National Policy Environment. It is recognized that AID's ability to influence host government policy is limited even when its efforts are coordinated with those of other donor groups. Further, it is suggested that potential national political repercussions resulting from a change in government policy, particularly in regard to domestic price-structures, warrant a cautious approach. Nevertheless, in some cases policy changes in the livestock sub-sector may be the only means by which herder income and livestock production can be improved. Policy formulation and planning in the livestock sub-sector may be best achieved by the creation of a host government secretariat or policy unit which, among other things, would relieve ministers from some of the administrative duties involved in coordinating development policy. The secretariat would be responsible for organizing policy meetings and for coordinating livestock development policy with other elements of an agriculture sector strategy.

An administrative structure such as a secretariat would permit greater inter-departmental or inter-agency coordination on policy issues. It could also ensure that heads of technical departments participate in policy formulation activities. The latter is desirable so that the heads of technical offices are not asked to implement policies in which they had very little input. The particular administrative structure a policy unit would assume depends on where responsibility for livestock development lies in that particular country (e.g., in either a Ministry of Livestock Development, a Ministry of Agriculture, or a Ministry of Rural Development).

A secretariat or policy unit should also have the capacity for data analysis and evaluation or have easy access to institutions or agencies which have such a capacity. Accurate evaluation data are essential for formulating sound livestock sector policy guidelines. The secretariat should be responsible for informing policy makers of information available within the country. Often these data may have accumulated as a result of a specific livestock development project and may not be easily accessible to policy makers. For example, it was pointed out at the workshop that much policy-relevant information had been collected during Phase I of the Niger Range and Livestock Project, yet these data had not yet been organized in a form facilitating their use in guiding subsequent actions. In some countries, project experience may be the country's most valuable source of information for policy making. In the context of livestock development policy,

AID's role could be to supply a senior level advisor to a policy unit. In some cases, it might be best if the person were associated with an AID livestock intervention which has important policy implications in the country. The advisor could serve to inform senior government officials of the policy implications of AID and other donor activities. This would apply to countries where large-scale investments in the livestock sector are recent. The long term goal of AID interventions at the policy level should be to enhance host government's capacity to formulate and evaluate its own livestock development policies.

2.2 The Development of Long Term Livestock Programs. The slow pace of accumulation of benefits from livestock sub-sector interventions in Africa suggests that activities longer than the normal five year project cycle of AID be supported.² This would provide livestock development activities with a more permanent status than current with pastoral projects. A program approach would also allow for greater flexibility in development design and encourage continuity in livestock activities and experience. Since much of our livestock sector technical package (including technology delivery systems) is at an experimental stage, it is important that programs be flexible enough to modify activities as new information is gathered. This would apply to situations where animal-based production systems dominate as well as where mixed animal/crop systems are important. Kenya's Arid and Semi-Arid Lands Program is an example of such a development.

² The length of the project cycle is a present concern in AID and a recent AID review committee suggests that it be extended from five to ten years.

2.3 Development of National Institutions. An African livestock sub-sector strategy should focus on institution building. In addition to enhancing the institutional capacity of governments to implement livestock programs, efforts should be toward improving host government ability to monitor and evaluate them. It is preferable for this research and monitoring to be vested in national rather than in externally contracted or international research organizations, in order to facilitate more direct relationships between host country research institutes and development activities in the field.³ An appealing aspect of systems or farming-systems oriented research is that it can be a mechanism for linking training and research to extension and field activities. Under these conditions, host country nationals enrolled in training programs at national research institutes could gain field experience during the training period. It is recognized, however, that many persons need to receive additional schooling (e.g., animal science) in the U.S.; continued support for overseas training in AID livestock programs is recommended.

Another major component of institution development should be the support of host government and non-government research and service organizations including veterinary, marketing, and water management organizations. In the case of veterinary research and veterinary services, host country institutes or agencies should benefit from the animal health program of ILRAD and coordinate their

³ This statement is not intended to underplay the important roles of the International Livestock Center for Africa, the International Laboratory for Research on Animal Diseases and the International Institute for Tropical Agriculture in livestock research and development in Africa. Little attention is directed here to the IARCs because the workshop's agenda focused on AID activities alone.

research efforts accordingly. As noted above, animal health interventions have been the most successful technical inputs in Africa's livestock sub-sector.

2.4 Strengthening Local-Level Producer Organizations. It is important that local participation be supported in African livestock sub-sector programs. Where possible, infrastructure management and cost recovery should be implemented through local producer organizations. Specific livestock development activities, such as bore-hole construction, which can be operated, maintained and financed by livestock owners or organizations once the project begins, should be encouraged. The involvement of government in the implementation of specific livestock development activities should, where feasible, be limited to monitoring and extension (although the same person or office should not be responsible for both activities). Ideally, the host government's contribution is most effective at the policy or program level.

Caution similar to that recommended when implementing technical packages is called for also in the context of local producer organizations. The risks entailed in supporting producer groups such as herder associations or group ranches may be great. AID and other donor attempts to work with local herders have had mixed success. the Fotswana Range Management and Livestock Development project attempts to communally regulate access to water and grazing through the organization of producer groups; the Chad Range and Livestock Herder Training project sought to utilize herder groups for extension purposes; in Kenya groups of elders have been involved in identifying group ranch boundaries. The effort in Botswana has been encouraging. In Kenya, on the other hand, the involvement of pastoralists in boundary and project identification, especially among the Maasai, has pointed to the social differen-

tiations (between rich and poor, young and old) which characterize the community. Failure to recognize the social heterogeneity of pastoral communities in regard to income and other socio-economic indicators, such as the role of women in livestock production, is a recurrent feature of arid and semi-arid livestock development efforts, and frequently leads to problems that might have been avoided or at least anticipated had an adequate social analysis been undertaken at the outset.

III. GUIDANCE FOR THE IDENTIFICATION, DESIGN AND EVALUATION OF AID LIVESTOCK PROGRAMS AND PROJECTS.

This section of the report emphasizes the application to projects of the strategy and policy variables discussed above in accordance with the objectives specified on page 2. When livestock development in Africa is discussed at the project or program level rather than at the sub-sectoral level, it is even more difficult to generalize. The focus at this level should be on specifying certain key indicators, or, as Stephen Sandford says "circumstances", which can be identified in each area, although not necessarily all on the same scale. This is preferable to attempting to elaborate a single project "prescription" applicable to all of Africa's different pastoral production systems.

The following are the most significant indicators that should be examined at the project identification and design stages of each pastoral-related project (items B and C are from S. Sandford 1981).

1. Relevant Indicators for Project or Program Identification.⁴

A. National policy environment. This is an important criterion to explore before establishing a livestock program. Though marketing and pricing policy is a production disincentive for livestock owners in many African countries, there are some West African and Southern African countries where marketing and pricing policies are quite favorable for the herder. The impact of government policy on the private sector's role in livestock marketing also should be assessed.

B. Reliability of rainfall and environment. Climatic and environmental factors are critical criteria that distinguish different pastoral regions. The overriding importance of these parameters is that they greatly influence other key indicators (i.e., mobility and diversification of local economy) which, as stated below, are essential to a framework for project action. Of all the indicators, these are perhaps the most difficult to identify because of the time-depth needed properly to evaluate environmental conditions (Warren and Maizels 1977).

C. Mobility of population. This is important in regard to applying organizational structures (group ranches, grazing blocks, etc.) and is a very basic and quantifiable phenomenon which can be used to distinguish pastoral areas and proposed development interventions. The more mobile or nomadic a pastoral group is, often the more difficulties will be involved with applying standard development interventions, such as veterinary, institutional, or marketing services. And, consequently, the higher the costs of providing services for the population.

D. Institutional capacity. A consideration of institutional capacity must entail an investigation of institutions, community organizations, etc., which are indigenous to the pastoral system, as well as those which are outside of the system. The latter includes government or university research institutes, project implementation agencies of ministries, and other organizational structures which could potentially assume a role in livestock development related activities. Essential to the identification and design of a pastoral development project is recognition of the host country's institutional and implementation capacities, which are by no means equally developed among the major livestock producing countries of Africa.

⁴ Much of this section is drawn from the workshop issues paper and from participants' comments.

E. Income or wealth distribution among households (i.e., equity issues). This is an important variable to consider when designing projects aimed at the rural poor in a country. Contrary to common belief, livestock ownership, especially cattle, in most pastoral areas of Africa is polarized with large segments of the pastoral population (often 20-30% of households) having little or no access to livestock. This is less the case for goat ownership. An exaggerated case of this is Botswana where in the livestock sector the poorest fifty percent of households obtain only seven percent of their total income from livestock (USAID 1980 :16). Similarly in Niger and the Sudan, many pastoralists have not been able to reconstitute the herds lost during the great drought (1968-1974), and a large number have effectively no animals at all. Under such circumstances, livestock sector interventions such as veterinary services, water development and marketing inputs have little benefit for the poorer segments of the population.

F. Diversification of the regional and household economy (role of off-farm employment, crop production, etc.). This is an essential variable to identify in regard to the appropriateness of mono-sector (livestock) vs. integrated projects in the pastoral area under consideration. Where the economy is rather diversified, especially in regard to the role of crop production, strict livestock sub-sector projects may be inappropriate. Development experiences and lessons from the areas more specialized in livestock production may be inapplicable to regions where diversification is the norm. It should also be noted in the mixed farming areas whether livestock are entrusted to herders or maintained directly on the farm.

G. The degree of direct dependence on pastoral products for subsistence and the role of non-pastoral foods in the diet. Often neglected in research is the role of non-pastoral foods in the herders' diet. This is a relatively easy indicator to quantify and has important social and economic implications for a development intervention such as zonal marketing which may conflict with the subsistence base of the pastoral community. Such marketing inputs are likely to be less detrimental to populations where alternative foods assume an important part of the diet. They may include the mixed farming areas.

H. The level of livestock development infrastructure (i.e., marketing, veterinary services and water development). The lack of proper livestock infrastructure and maintenance capacity restricts the development options available to the planner. By contrast, the availability of established marketing infrastructure and veterinary services may allow project activities to focus on interventions which assume some appropriate development level of this infrastructure. Where such infrastructure does not exist, it can often be used as a preliminary development input which in many cases is amenable to herders and thus is an important mechanism for obtaining their confidence.

The above indicators can be identified, often quantitatively, in each pastoral situation. They are not static indicators because they can change dramatically in a relatively short time; they thus imply the need for a flexible project design framework. The level of research at the project identification stage which is needed for items B-G requires extensive ecological and socio-economic inquiries at both the household and regional levels. The length of time required for adequate field inquiry depends very much on local circumstances, such as the degree of spatial dispersion of settlements, the nature of transportation infrastructure, and the mobility of the pastoral population. As noted earlier, systems-oriented, multi-disciplinary research is preferred and should be carried out within the framework of the project. Of course not all queries can be adequately resolved prior to implementation,⁵ and the research and monitoring component of the program will continue the data collection and analysis during implementation.

2. From Identification to Project or Program Objectives and Components.

The identification and evaluation of the key indicators listed in the previous section should inform project personnel of appropriate objectives and design for the particular activity. They should also indicate when project assumptions are misinformed. While it is not our goal to provide a "checklist" for identifying proper livestock interventions, the relationships between information requirements, design and some of the most frequently stated objectives of AID livestock interventions can be listed as follows:

⁵ It is recognized that host government impatience to get on with the "action" may limit the duration of field inquiry available prior to project implementation.

<u>Project Objective</u>	<u>Proposed Action</u>	<u>Required Information</u>
1) To improve herder income and well being through improved livestock management practices.	A form of rotational grazing.	Understanding of ecological variables in the area; "nature" of environmental degradation; present grazing patterns in the area, including a knowledge of seasonal movements of livestock, and how these will be affected by proposed plans to improve rangeland (e.g., rotational grazing, group ranches, etc.).
2) To increase livestock production and marketing through better management practices and increased herd offtake.	Development of marketing infrastructure and improving market accessibility for the herder.	Data on milk and meat yields, role of pastoral products in diet, present livestock marketing system and its contribution to herders' income; herd structure and potential for offtake of immature males; income distribution and impact of increased livestock marketing on this; cash investment patterns among herders.

Data collection at the project identification stage should indicate the appropriateness of the above stated objectives and proposed actions as well as point out where these objectives conflict with that of increasing the "well-being of the herder." For example, measures to improve range conditions such as restricted grazing often impede livestock movements which are important adaptive strategies on the part of stock owners for combating seasonal fluctuations in rainfall and fodder production. This is well illustrated in the example of the grazing block scheme of Northeastern Kenya, an AID-financed program under the auspices of the Kenya National Range and Ranch Development Project. In this case, Somali pastoralists avoided the proposed rotational grazing system of the project because it was incompatible with their pastoral economy, especially in regard to stock watering and the movement and grazing patterns of camels.

3. Evaluation. The success of flexibly designed livestock programs depends to a large extent on timely and appropriate evaluations. As has been emphasized throughout the paper, the appropriate technical packages in the livestock sub-sector remain to be developed. Moreover, the state-of-knowledge regarding the impact of certain technical inputs on pastoral populations is still relatively unexplored. In this context, evaluations should be incorporated in the project perhaps in the form of a monitoring unit. It is important that evaluations of relatively new livestock programs not be limited to a mid-term and "final" evaluation (the latter of which is often planned for an unrealistically early date, conforming to the 3-5 year implementation cycle). A major concern raised with Mali Livestock I was the absence of annual evaluations despite the fact that they were anticipated as part of its "rolling design".

Pre-project data collection and on-going project monitoring should provide an important basis for a final evaluation. Household consumption, income and other socio-economic data gathered prior to intervention should be useful in evaluating the impact of the development activity on the income and well-being of the pastoral population, particularly the poorer households. Other program objectives may call for baseline data on range ecology and animal production which can also be used to scale program impact. A methodologically sounder evaluation, however, would involve data comparisons between the project area and a sample set drawn from outside. This latter sample should be representative of the project area prior to intervention with the distinguishing characteristic being the absence of the project. Such an approach to evaluation would confront the recurrent methodological issue of relevant variable disaggregation. It would allow greater security in the claim, for example, that a change in income level

was a function of the intervention rather than of some coincidental cause. The feasibility and cost effectiveness of this type of evaluation may limit it to countries where adequate baseline data already exist (as in certain regions of Kenya and Botswana).

The time dimension for program impacts should be recognized in the context of African livestock development. Benefits from interventions in the livestock sector may take ten to twenty years to accumulate. This applies particularly to institution building which usually entails high costs in the short term but may prove more cost effective over time. Development impact in the livestock sub-sector often appears negative when viewed within a five year project framework. Over a longer time perspective a particular intervention might well be considered successful.

Host government's capacity to utilize evaluation data in policy formulation has been noted as a critical area for improvement. Linkages between policy makers and field technicians should be strengthened to ensure that evaluation data from the field provide inputs at the policy level. Possible institutional mechanisms for achieving this have been explored in earlier sections of this report. It should be reiterated that it is important that host governments, as well as AID, learn from their experiences in the livestock sector. Consistency and continuity toward the improvement of livestock development programs is partially contingent upon the degree to which evaluations relate to policy.

IV. DISCUSSION.

There were a number of issues discussed at the workshop which cannot be adequately covered within the limits of a strategy or program guideline. These are topics which often led to lively debate and which are therefore recorded in the report. Several of the issues cited below have been considered in previous sections of the report. An attempt has been made to provide as accurate an interpretation of the discussion as is possible. Many of the points made regarding these issues remain unresolved.

1. "Animal-Based" Production Systems vs. "Mixed" Production Systems.

Some of the more salient remarks made regarding the importance of investment in mixed systems versus animal-based systems are:

1.1 A simple, dual typology as cited above is inadequate for guiding appropriate investment. Most animal-based systems include some cropping component; mixed farming areas can range from semi-arid production systems to humid tropical systems which include a very intensive form of livestock production. Mixed farming areas must be further classified according to ecological and climatic criteria.

1.2 The trend in many animal-based systems of Africa is toward increased diversification (e.g., crop production). African governments are likely to encourage herders' efforts to cultivate where it is ecologically feasible, especially where kilocalorie production per unit of land is greater for crop production than for livestock. A livestock sub-sector strategy must confront this situation of change and point to appropriate investments among different options including crop production. One possible scenario might be whether

returns to investment are likely to be higher for crops in semi-arid areas or for livestock in high rainfall areas.

1.3 Though livestock development problems in Africa's dry regions are well documented, it does not follow that mixed farming projects have been any more successful than interventions carried out in the semi-arid and arid zones. Infrastructure development in the higher rainfall areas does, however, allow for easier project implementation than in the dry regions.

1.4 Unlike Latin America and Asia, much of Africa's higher rainfall zones are infested with tsetse fly and consequently are unsuitable for cattle production except for trypano-tolerant species.

1.5 Higher potential, mixed farming areas often obtain their livestock from the semi-arid regions. This type of marketing linkage makes it difficult to focus on the mixed farming areas to the exclusion of the dry regions.

1.6 Livestock owned by farmers in mixed farming areas are often entrusted to herders. The ownership/management distinction commonly found in the southern Sahelian zone makes mixed farm projects which emphasize on-farm production of livestock problematic.

1.7 Private sector potential for providing livestock services is much greater in the higher rainfall, mixed production areas than it is in the semi-arid zone. Marketing and some veterinary services are already available in some of Africa's mixed farm regions. Private sector veterinary involvement in livestock related activities is much less in the dry regions, although all production by pastoralists outside of projects, with the exception of some deep watering points, are "private sector" activities.

2. Land Tenure and Grazing Control.

It was stated that measures to increase production entail changes in the land tenure system in the pastoral zone. The following points summarize the debate on the land tenure issue:

2.1 Field studies reveal that livestock-based societies have rules and procedures (often informal but sometimes formal) regulating access to grazing. Few if any indigenous pastoral economies in Africa had a pattern of completely open access regarding grazing, access to water, and livestock movement.

2.2 Many of the pastoral tenure systems in Africa have "broken down" under present conditions and no longer provide an efficient mechanism for controlling grazing. Some of these indigenous systems can be revived with proper development inputs (e.g., the dina system)⁶; in other regions new mechanisms for regulating graze control may have to be found.

2.3 Grazing controls based on fee charges have performed very poorly in Africa.

3. Production and Equity.

The statement that equity-oriented pastoral projects often create trade-offs in terms of production was made at the workshop. Diverse viewpoints were expressed regarding this issue, but a general consensus seemed to have been reached that equity and production are important for livestock development strategy. It was pointed out that livestock development projects in Africa

⁶ The dina system is found in Mali and is an elaborate tenure system regulating herder and group access to dry season graze.

have never really focused on the "poorest of the poor" (the bottom ten percent of the population), often for the reason that the poorest households' access to livestock is usually minimal. Recent AID-funded livestock programs are by design aimed at improving the well-being of the upper segments of the lower and the middle strata of the livestock-owning populations. Evidence does not demonstrate that smaller production units allocate resources any less efficiently than the larger units and, in fact, the opposite argument was made at the workshop. That is to say, efficiency in livestock production is often achieved more cost-effectively by smaller than by larger herd owners, although market off-take may be greater for the large herd owners.

Much of the debate at the workshop regarding production versus equity relates to the mixed farming areas versus animal-based systems dichotomy (which, as noted, was shown to be a distinction without a necessary difference). The proponents of increased AID investment in the medium to high rainfall mixed farming zones argued that production potential is greatest in these areas. It is also noted, however, that constraints on land are most severe precisely in those medium to high rainfall zones. While it is recognized that animal production per unit of land is presently much higher in the high rainfall areas (excluding the tsetse fly regions), its potential for increase relative to other ecological zones is not yet known. There is a concern that a livestock sector strategy limited to the mixed farming areas would exclude a number of African countries which lie mainly in the semi-arid and arid zones. It is also pointed out that food security is most vulnerable in the dry regions, and that given the present rate of change neglect for these areas might result in the recurrence of famine conditions in the 1980s.

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APPENDIX I

Agency for International Development
and
Institute for Development Anthropology

WORKSHOP ON DEVELOPMENT AND AFRICAN PASTORAL LIVESTOCK PRODUCTION

Marriottsville Spiritual Center
Marriottsville, Maryland
November 17-19, 1981

Agenda --

Monday, 16 November 1981

0900 - 1700 Executive/organization committee meeting. Rm 2722A.

Tuesday, 17 November 1981

0900 - 1300 Executive/Organization committee meeting. Rm 2722A.

Travel to Marriottsville.

1600 - 1730 Registration at Marriottsville Spiritual Center.

1800 Dinner.

1930 Session I. AID's Role in African Pastoral Livestock Development.

Chair: John Koehring, AFR/DR

1. Michael M Horowitz, IDA and David Schaer, AFR/DR/ARD, Welcoming Address: Organization of Workshop and Expected Outputs
2. John Koehring, AFR/DR, The Importance of the Issue to AID.
3. Lane Holdcroft, AFR/DR/ARD, Food Production in Africa: the Contribution of Livestock.
4. Ned Raun, Winrock, Summary of Conclusions from the October 1981 Conference on Livestock Program Strategy and Priorities.

Wednesday, 18 November 1981
(Jim Dickey will lead pre-breakfast jog across
conference center's forests and fields)

0815 Breakfast

0900 - 1200** Session II. Characteristics of Different Livestock Production Systems in Africa:

Co-chair: John Galaty, McGill U. and Don Ferguson, USDA.

1. Animal Based Arid and Semi-Arid Systems. Discussant: John Van Dusen Lewis, NE/TECH (brief 10 minute description).
2. Mixed Animal-Crop Systems. Discussant: Chris Delgado, IFPRI.
3. Identification of Constraints:
 - A. Ecological. Discussant: B. Bement, NRL.
 - B. Biological. Discussant: D. Butchart, S&T/AGR.
 - C. Socio-Economic. Discussant: D. Aronson, Boston U. and McGill U.

1215 Lunch

1330 - 1730** Session III. Case Studies - Discussion.

Chair: Michael M Horowitz, IDA

Three AID-funded projects have been selected for intensive examination. Each participant will be assigned to one of the case study work groups. It is recognized that some participants will have no prior familiarity with any of these. Relevant documentation will be provided.

The following issues should be addressed:

1. -- Information requirements for proposed interventions: were they adequately met? What studies should have been done?
2. -- What were the assumptions that formed the basis for the project? Did the assumptions facilitate or impede the achievement of project goals?
3. -- What were the implementation factors that facilitated or impeded the attainment of project goals?
4. -- What were the institutional factors in the host country that related to project success or failure?
5. -- How did host country government policy facilitate or impede project goals? Were there ways that AID could have obtained policy changes that would have assisted project success?
6. -- Summarize project achievements and shortcomings. What could have been done differently to impact more favorably on project success?
7. -- What are the other critical issues that you have identified.

Case Study Work Groups.

- (1) Kenya National Livestock and Range Development
Leaders: Larry Abel, AFR/DR/ARD and David Schaer, AFR/DR/ARD

John Galaty, McGill U.	Ned Raun, Winrock
Noel Cossins, ILCA	Joan Atherton, PPC/PDPR
Ronald Ruybal, AFR	Louise Sperling, McGill U.
James Livingston, AID/Mogadiscio	
Peter Hopcraft, IBRD	
Stephen Sandford, ODI	Hariadene Johnson, AFR/EA
Carole Scherrer, AFR/DR/ARD, Rapporteur	

- (2) Mali Livestock I et seq.
Leaders: Roger Simmons, AFR/SFWP and Stanley Wills, AID/Bamako

James Dickey, SDP/Bamako	John Lewis, NE/TECH
Michael Cernea, IBRD	Chris Delgado, IFPRI
Don Ferguson, USDA	Lee Voth, NE/Magreb
Jere Gilles, U. Missouri	Henry Miles, AFR/DP
Jack Hyde, USDA	Joel Teitelbaum, USDA
Myron Smith, AFR/DR/ARD	Frederick Gilbert, AFR/SWA
James Oxley, Colorado State	

- (3) Niger Range and Livestock I
Leaders: Merle Baker, AFR/EA and Dan Aronson, Boston and McGill U.

Douglas Butchart, S&T/AG	
John Becker, AID/Ouagadougou	
Robert Bement, Rancher (NR&L)	
Wilbur Thomas, AID/Niamey	
Charles Haines, S&T/AG	Lane Holdcroft, AFR/DR/ARD
Emery Roe, Cornell	Fermino Spencer, AFR/CWA
Josette Murphy, PPC/E/S	Trid Mukherjee, Abidjan

1800

Dinner.

1930-2200

Session IV. Synthesis of Case Studies

Discussion Leaders: David Schaer (Kenya), Roger Simmons AFR/SFWP (Mali)
Merle Baker (Niger)

- Summary of major points of case study groups (representative of each project group)
- What can be learned from each of these projects?
- What are the general themes or considerations that are common to each project and which can assist in forming a general strategy for Africa's livestock sector?

Thursday, 19 November 1981

0815 Breakfast

0900 - 1200** Session V. Program and Policy Implications.

Chair: James Oxley, Colorado State.

1. Defining an Appropriate Technical Package. Discussant: Jim Dickey, SDP/Bamako.
2. Host Government Policy and Institutional Considerations. Discussant: Dan Aronson
3. The Recurrent Cost Factor. Discussants: Don Ferguson, USDA.
4. Program or Project Approach: does the project cycle allow for sufficient time and flexibility for benefits to be accrued. Discussant: Stephen Sandford, ODI.

1215

Lunch

5. ILCA Program. Discussant: Noel Cossins

1315

Return to Washington

1500 - 1730

Session VI (at AID/Washington). An agenda for a Development Strategy and Recommendations for Action.

Chair: John Koehring, AFR/DR

1. Summary of Workshop, Jim Dickey, SDP/Bamako, Michael M Horowitz, IDA, and Stephen Sandford, ODI.
2. What are the priority areas for development action in the livestock sector? Discussant: Lane Holdcroft, AFR/DR

Friday, 20 November 1981

1000 - 1200

Executive Committee Debriefing, AID/AFR

** Morning and afternoon sessions will have coffee breaks.

APPENDIX II

Workshop on Development and African Pastoral Production

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APPENDIX III

ISSUES PAPER: FOR THE WORKSHOP ON
AFRICAN PASTORAL/LIVESTOCK DEVELOPMENT

November 17-19, 1981

Prepared By

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October 1981

Contract No. AID/AFR-0085-C-00-1033

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Foreword

Pastoral production systems in Africa are quintessentially private sector activities. The key figure in these systems is the individual herd manager, responsible for the maintenance of the herds which simultaneously support large populations directly on their produce, produce regular supplies of meat for domestic urban consumers, and provide some live animals and meat for export. Development interventions in the African livestock sector have not often served to support the functioning of this private sector by identifying constraints to more effective operation of pastoral production systems and devising means of overcoming them. They have attempted rather to substitute for the individual herder management decisions and controls made by persons remote from and not directly responsible for the system's operation. Despite the acknowledged "rationality" of the individual herd managers, which is now generally beyond dispute, there continues to exist a basic distrust of their judgments. An objective of this paper and of the forthcoming Workshop on African Pastoral Production Systems is to provide a means of facilitating livestock sector interventions which build to rather than compromise the existing system, which will support the thousands of risk-taking individuals who invest their time, labor, and capital in the pursuit of gain and meaningful lives.

This paper does not pretend to be an adequate presentation of all the issues. Nor does it seek agreement. It is rather a springboard for discussion. Workshop participants are requested to comment on the paper, to indicate their agreement or disagreement with the positions taken and the degree of confidence they have in the evidence advanced, and to improve the paper by providing other pertinent data and insights. Commentaries received will be ventilated at the Workshop and incorporated into the ensuing report.

Toward a Development Strategy for Africa's Pastoral Sector:
an Issues Paper

1. INTRODUCTION

The Agency for International Development is concerned that despite the several studies, workshops, and conferences conducted or held on African pastoral development in the post-Sahelian drought era, relevant information and experience has not been incorporated into an informed strategy statement. Such a strategy statement would facilitate the identification, design, implementation, and evaluation of sectoral programs and projects. The AID-sponsored Workshop on Pastoralism and African Livestock Development held in September 1979 addressed the issue. This workshop achieved some gains in identifying several problem areas of pastoral development and in demystifying assumptions concerning herder production strategies and the condition of the African range. The three days allotted for the meeting, however, and the state-of-knowledge at that time were insufficient to relate workshop findings to a number of pertinent policy issues. This paper provides a follow-up on the earlier workshop and identifies a set of issues to be explored in Marriottsville, November 17-19, 1981. That meeting aims at producing a set of guidelines for African pastoral development which can readily be translated into actions compatible with the social, economic, and environmental realities of arid and semi-arid pastoral regions of Africa. A further anticipated product will be an approach to a framework for pastoral livestock program and project evaluation.

The emphasis in this paper is not on developing a single "prescription" applicable to all of Africa's pastoral areas for such a panacea does not exist given regional variations in ecology, economics, and sociology but rather it is concerned with certain key indicators or "circumstances" (cf. Sandford 1981) which can be identified in each area and which can inform policy makers about development options and appropriate interventions. Policy issues which emerge from this process can then be discussed at a less abstract level than is usually the case when policy is addressed. Importantly, this will allow some comparisons of pastoral development activities among the different regions of sub-Saharan Africa and thus will permit easier incorporation of past development experiences and lessons into the design of present policy and project concerns; a major problem at present is the lack of "transferability" of information and experiences pertinent to pastoral development among the different regions of Africa (ILCA 1980:6). In addition, not only will such a framework indicate where information is lacking and what type of data must be collected at the identification and design stages of the project cycle, it will also help reveal the appropriateness or feasibility of specific project or program objectives.

2. SUMMARY OF THE HARPERS FERRY WORKSHOP.

A summary of the findings and conclusions is presented here to provide the background on the sociological, ecological, and economic dimensions of pastoralism and livestock development which appear to be critical to an understanding and drafting of a sectoral strategy statement.¹ Major topics discussed at the workshop were African range degradation, pastoral development, research needs, livestock program and project objectives, institution building, and livestock marketing. The following workshop conclusions received a general consensus from the eighty or so participants:

1. Quantitative data relating to pastoral systems are notoriously unreliable.
2. Management units for development interventions in the livestock sector should be (a) small-scale and (b) based on existing cultural ecological systems.
3. Various kinds of mobility are both crisis-survival mechanisms and effective strategies for long-term exploitation of the range.
4. Semi-arid rangelands can experience considerable biological and climatic stress without necessarily resulting in long-term degradation, the very identification of which is difficult.
5. In some cases, the prime emphasis on livestock sector interventions at this time should be to support the subsistence base of pastoral herding rather than to stress commercial activities.
6. Monitoring and evaluation should be made integral components of every program and project in the livestock sector.

Conclusions 3 and 4 increase our awareness and understanding of the complexity of African pastoral systems and make problematic projects designed on contrary assumptions. The other findings relate more closely to the design and implementation of projects.

The implications for policy and project action which evolved from the various workshop sessions point to problems with the objectives and assumptions that form the basis for pastoral development interventions. For example, a number of participants pointed out that the objectives of improving range conditions and the condition of the herders are not invariably harmonious since restrictions on herd movements are often recommended which conflict with an important adaptive strategy in marginal environments. Such range management interventions were usually premised on the belief that the pastoral production system is inherently destructive of rangeland, a phenomena which is supposedly manifested in the present environmental condition of

¹ Workshop participants will receive copies of the Harpers Ferry report.

African pasture. As stated above, a major conclusion of the workshop was that assumptions of long-term environmental degradation are premature given our present state of knowledge regarding the African range.

The proposed development actions which were recommended by a consensus of workshop participants are stated as follows:

1. In the pastoral sector, the general strategy should be to relieve producers of their anxiety about survival (i.e., herders must be assured of their ability to sustain themselves in times of stress).
2. Attractive investment alternatives to livestock should be made available to the pastoralist.
3. Goats and camels should receive increased attention.
4. Veterinary interventions aimed at reducing calf mortality through health and nutritional measures should be encouraged.
5. Livestock price policy and marketing structures should be altered to give more favorable returns to the herder.
6. Pastoral livestock interventions should be planned in a regional context and take account of those ecological, social, economic and political factors which may be outside the project boundaries, but nonetheless affect or are affected by project activities.
7. More attention should be given to interventions which improve dairy yields.

In addition to the above recommendations, a number of areas and topics of research were considered to be high priority to support the design of sound development actions. These include a series of rangeland monitorings to determine the nature, extent, and causes of environmental change and degradation; a need to elaborate a typology of African pastoral production systems to determine the kinds of impacts likely from different types of interventions; research and herder decision-making processes, especially in regard to stock movement and the division of herds into various kinds of animals (by species, age and sex); expansion of research on the contribution of nutritional supplements on animal health and of other means of reducing calf mortality; and studies of the contribution of small stock to the rural economy. Wherever possible, these kinds of research projects should be undertaken by Africans and in conjunction with on-going or anticipated livestock development projects. Participants at the workshop emphasized that relevant research be conducted in conjunction with actual or proposed development projects so that results of research could be more quickly applied to development activities. This

implies having a research and monitoring unit as a project component like the current AID Niger Range and Livestock I.

3. GUIDELINE FOR FORMULATING A PASTORAL DEVELOPMENT STRATEGY

3.1 Relevant Indicators for Project or Program Identification.

The Harpers Ferry workshop highlighted the complexities and difficulties in generalizing about African pastoral production systems, even those occurring within a short distance of each other. Translated to the policy level, it is virtually impossible to draft a single development strategy statement that is appropriate for all pastoral systems of Africa. These range from the rather sedentary pastoral systems of highland Eastern Africa to the nomadic livestock economies of the northern Sahelian zone. Factors exogenous to the pastoral systems, such as institutional capacities of governments or pricing policies, also inhibit comparisons among the different areas; for example, the often cited case of government pricing policies which serve as market disincentives for pastoralists (Little 1980) is not valid in the Botswana context where the "terms of trade in relation to other food commodities is very favorable for livestock producers" (Roe and Fortmann 1981:XXV). Given such variation in African pastoral systems, a general development strategy statement should be predicated on an identification of variables which are common in each context, although not necessarily equally important. The following are the most significant indicators that should be examined at the project identification and design stages of each pastoral-related project (items 1 and 2 are taken from Sandford 1981):

1. Reliability of rainfall and environment. Critical criteria which distinguish different pastoral regions are the climatic and environmental factors. The overriding importance of this parameter is that it greatly influences other key indicators (i.e., mobility and diversification of local economy) which as stated below are essential to a framework for project action. Of all the indicators, it is perhaps the most difficult to identify because of the time-depth needed properly to evaluate environmental conditions.

2. Mobility of population. Important in regard to applying organizational structures (group ranches, grazing blocks, etc.) and a very basic and quantifiable phenomenon which can be used to distinguish pastoral areas and proposed development interventions. The more mobile or nomadic a pastoral group is, often the more difficulties involved with applying standard development interventions such as veterinary, institutional, or marketing services.

3. The degree of direct dependence on pastoral products for subsistence and the role of non-pastoral foods in the diet. Often neglected in research is the role of non-pastoral foods in the pastoralist diet. This is a relatively easy indicator to quantify and has important social and economic implications of any development intervention such as zonal marketing which may conflict with the subsistence base of the pastoral community. Such marketing inputs are likely to be less detrimental to populations where alternative foods assume an important part of the diet.

4. Limitations on grazing availability (i.e., human population pressure, encroachment by farmers). This variable is most closely related to indicator (2), mobility, since stock movements are closely regulated by limitations on grazing. Factors responsible for the loss of grazing lands often are historical or political; for example, the alienation of certain pastoral areas for crop production (often irrigated). In most cases, these situations are very difficult or impossible to redress given the political environment of many African countries. Regarding development interventions, loss of grazing is often manifested in increased diversification of the pastoral economy (e.g., off-farm employment or crop production) and accelerated degradation of the rangelands.

5. Diversification of the regional and household economy (role of off-farm employment, crop production, etc.). Essential variable to identify in regard to the appropriateness of mono-sector (livestock) vs. integrated projects in the pastoral area under consideration. Where the economy is rather diversified, such as in the southern Sahelian zone, strict livestock sector projects may be inappropriate. Development experiences and lessons from the areas more specialized in livestock production may be inapplicable to regions where diversification is the norm.

6. Income or wealth distribution among households (i.e., equity issues). Important variable to consider when designing projects aimed at the poorest segment of the rural population. Contrary to common belief, livestock in most pastoral areas of Africa is polarized with large ownership segments of the pastoral population (often 20-30% of households) having little or no access to livestock. An exaggerated case of this is Botswana where in the livestock sector the poorest fifty percent of households obtain only seven percent of their total income from livestock (USAID 1980a:16). Under such circumstances, livestock sector interventions such as veterinary services, water development and marketing inputs would have little benefit for the poorest segment of the population.

7. The level of livestock development infrastructure (i.e., marketing, veterinary services and water development). The lack of proper livestock infrastructure restricts the development options available to the planner. By contrast, the availability of established marketing infrastructure and veterinary services may allow project activities to focus on interventions which assume some appropriate development level of this infrastructure. Where such infrastructure does not exist, it can often be used as a preliminary development input which in many cases is amenable to herders and thus is an important mechanism for obtaining their confidence.

8. Institutional capacity. A consideration of institutional capacity must entail an investigation of institutions, community organizations, etc., which are indigenous to the pastoral system, as well as those which are outside of the system. The latter would include government or university research institutes, project implementation agencies of ministries, and other organizational structures which could potentially assume a role in livestock development related activities. Essential to the identification and design of a pastoral development project is recognition of the host country's institutional and implementation capacities, which are by no means equally developed among the major livestock producing countries of Africa.

The above indicators are all factors which can be identified, in many cases quantitatively, in each pastoral situation. They are not static indicators in that they can change drastically in a relatively short period of time and thus indicate the need for a flexible project design framework. The level of research at the project identification stage which is needed for each of the factors will vary depending upon the issue considered. Indicators 1-6 require extensive ecological and socio-economic research, at both the household and regional levels, and the length of time required for this will depend very much on local circumstances such as the degree of spatial dispersion of settlements, the level of transportation infrastructure development in the area and the mobility of the pastoral population. The specifics of appropriate research methodologies, although important, are not a consideration here. But it is important that the limitations on interpretation of any pastoral research results (whether quantitative or qualitative) be recognized, since investigations are usually limited to a relatively short period of time (1-3 years) and may be greatly influenced by the particular time framework (good rainfall years or drought years) involved. Moreover, it is essential that research be carried out within the framework of the project so that the research can be more easily applied to project needs than is the case when investigations are conducted independent of the project. As noted earlier, where possible host country scientists should participate in research at the identification and subsequent stages.

3.2 From Identification to Project or Program Objectives and Components.

The identification and evaluation of the key indicators listed in the previous section should inform project personnel of appropriate objectives for the particular activity. The Harpers Ferry consensus was that the prime beneficiary of pastoral interventions should be the producing population rather than the range, the animals, or the domestic and external consumers. Obviously this priority is not universally shared. If the primary objective is to improve the well-being of herders, it often follows that this implies supporting the indigenous livestock production system. This project goal of improving the life quality of the herdsman is obviously difficult to define with any preciseness, but should provide a premise from which the other objectives (including improved livestock production, herd offtake rates, and range productivity) can evolve. These objectives, in turn, will then point to the appropriate development interventions or components which should form the basis of the project design. How these other objectives relate to project components and are shaped by information (indicators) identified at the pre-design stage is presented below. Two very common pastoral situations are simulated below to demonstrate linkages between the identification of key variables and project objectives and components. The actual range of contexts in which development interventions in the pastoral sector occur are numerous.

1. Pastoral Situation I: Key variables in this context are considered to be low and unreliable rainfall (less than 300mm), high population mobility (nomadism), direct dependence on pastoral products for more than 60% of diet, low population density but increasing encroachment by farmers (under 4 per square kilometer), minimal diversification of local or regional economy, unequal distribution of livestock holdings but the poorest stockowners have access to enough stock to remain viable in the pastoral sector, minimal livestock development infrastructure, and poor institutional capacity at both local and national levels. Such a situation represents an indigenous pastoral system where there is very little diversification of the pastoral economy, and the maintenance of the pastoral system in such a marginal environment is essential to their survival. Availability of an adequate territory to maintain their periodic stock movements is implied from the low population density. Interventions in this context should be premised on supporting the present pastoral system and interventions should attempt to improve veterinary services, water development (only after careful consideration) and institutional capacities at both the local and national levels. A secondary objective might be to improve herd offtake which would follow from the improvements in livestock production (i.e., veterinary services and water development) and thus a marketing component might be considered. Information required at the identification stage would include studies of seasonal stock movements, labor requirements for herding, possible sociological groups to be the basis for organizational innovations (herder

groups, associations, committees, etc.) aimed at involving greater project participation among the herders and herd demography so as to indicate the degree of market potential, especially for immature males.

Two AID livestock development projects presently underway in areas which generally conform to the situation factors identified above are Mali Livestock Sector I and Niger Range and Livestock Development. Yet despite the environmental, sociological, and economic similarities of the two project regions, the objectives and approaches of the two projects are vastly different. While Mali Livestock Sector I has as its primary objective improved beef cattle production and marketing, NRLD focuses more on increased, more equitably distributed incomes for the pastoralists achieved under present conditions, with only secondary concern for increased meat marketing for urban and export markets where they do not conflict with the primary objective. The most noteworthy distinction between the two projects is the recognition among NRLD that a first phase of the project should be research in orientation in order to identify appropriate development activities based on sound ecological and socio-economic grounds for a second phase. As was pointed out in a recent AID evaluation (AID 1980b:1), the major problem with the Mali Livestock Sector I project was that it was not based on an adequate understanding of the socio-economic aspects of pastoral strategies in the livestock sector.

2. Pastoral Situation II. Key variables in this context are moderate rainfall (500-600mm), modest population mobility limited to seasonal herd movements, direct dependency on pastoral products for 50% of diet, moderate population density for a semi-arid area (8-10 per square mile), restricted traditional grazing patterns caused by loss of dry season grazing areas to farmers, off-farm employment important for poorest segment of population involving migration to urban areas or settlement schemes, unequal distribution of livestock holdings, minimal livestock development infrastructure and poor institutional capacity at both local and national levels. Such a context is indicative of many pastoral areas of Eastern and Southern Africa where because of loss of grazing areas and other factors pastoralism is no longer a viable option for a large segment of the population (in some areas up to forty percent). Restrictions on grazing in these areas are often manifested in an increased tendency to farm and thus a more integrated framework for development is required than required in the situation outlined above. Essential to the solution of any stock problems in these areas is to create viable alternative investment options to cattle since in these areas overgrazing is often caused by nearby farmers investing in livestock. Appropriate interventions based on the objective of increasing income in the area on an equitable basis might entail a rural enterprise component to employ the poorer pastoralists and curtail out-migration.

Since the local diet is more diversified under such circumstances, marketing interventions are not likely to undermine the subsistence basis of the economy. In fact, marketing should be perceived as an important area for possible interventions given the reliance on non-pastoral foods which are usually purchased at the retail level. Efforts to improve the "terms of trade" for the livestock owner can be achieved by making national price policy more beneficial to livestock producers.

A donor project which is presently being implemented in a region where the pastoral system is relatively sedentary and there are pressures toward increased diversification of the pastoral economy is the World Bank's Semi-Arid Area Project, Kenya. Importantly, this project adopts a more regional, comprehensive approach than is usually the case with pastoral-related development. Rather than being mono-sector in focus (i.e., strict livestock emphasis), the project encompasses livestock, agriculture, health and range-management-related activities and, similar to the NRLP project, it is research-oriented and experimental in its first phase.

The two situations reveal some of the linkages which must be made between project objectives and the proposed interventions and the indicators relevant to the particular pastoral situation. One of the deficiencies commonly cited in recent literature on African livestock development is that livestock project objectives and interventions have rarely been based on sound ecological and socio-economic understandings of the pastoral system. In other words, project design objectives have ignored the identification of the important variables in the pastoral context.² This has been pointed out in evaluations of AID livestock projects in Botswana (AID 1977), Tanzania (AID 1981), Kenya (Devres, Inc. 1979a), and Mali (AID 1980b) and could probably be applied to more of AID's livestock interventions in Africa. Certain information requirements need to be fulfilled before secondary project objectives can be expressed accurately. The relationship between minimum information requirements and some of the most frequently stated objectives of AID livestock interventions can be illustrated as follows:

<u>Project Objective</u>	<u>Required Information</u>
1) to retard range degradation improving livestock management practices of the pastoral population	1) understanding of ecological variables in the area; "nature" of environmen- tal degradation; present grazing patterns in the area, including a knowledge of seasonal movements of livestock, and how these will be affected by proposed plans to im- prove rangeland (e.g., rotational grazing, group ranches, etc.).

² There are exceptions to this and one recently cited is the World Bank's Eastern Senegal Livestock Development Project (Korten, 1981:206-209).

- 2) to increase livestock production and marketing through better management practices and increased herd offtake.
- 2) data on milk and meat yields, role of pastoral products in diet, present livestock marketing system and its contribution to herders' income; herd structure and potential for offtake of immature males; income distribution and impact of increased livestock marketing on this; cash investment patterns among the herders concerned.

Data collection at the pre-Project Identification Document stage should indicate the appropriateness of the above stated objectives as well as point out where these objectives conflict with that of increasing the "well-being of the herder." For example, measures to improve range conditions such as restricted grazing often impede livestock movements which are important adaptive strategies on the part of stock owners for combating seasonal fluctuations in rainfall and fodder production. This is well illustrated in the example of the grazing block schemes of Northeastern Kenya, an AID-financed program under the auspices of the Kenya National Range and Ranch Development Project, where Somali pastoralists avoided the proposed rotational grazing system of the project because it was incompatible with their pastoral economy, especially in regard to the movement and grazing patterns of camels.

Two important development activities which relate to the success of any pastoral development intervention in Africa and which evolve from the objective of improving the well-being of the herder are (1) increased local participation in all stages of the project and (2) making research and monitoring of interventions an integral component of the project. For the most part, these project activities should be treated as axioms for project success in all pastoral areas of Africa despite the regional variations which occur with respect to ground-level indicators. That the involvement of project beneficiaries, or what are often referred to as the "targeted group", in project identification and implementation exercises is an important ingredient for success in rural development is well documented for both pastoral and non-pastoral regions (cf. ILCA 1980; Staudt 1979; Whyte 1980). However, local participation is particularly germane to the pastoral context where ecological and economic complexities are great. Under such conditions pastoralists can greatly assist in identifying relevant indicators and constraints to development as well as proposing possible interventions in areas (water, veterinary services, etc.) where assistance is most needed. Efforts to utilize local pastoral groups or individuals in AID or other donor project activities have occurred with respect to the use of pastoral groups in Botswana for regulating access to water and grazing on a communal basis (Botswana Range Management and Livestock Development), the utilization of groups of herders for extension

purposes in Chad (Chand Range and Livestock Herder Training) and the use of groups of elders in Kenya for identifying group ranch boundaries. While they seem to be achieving some success in Botswana, the involvement of Kenya pastoralists in boundary and project identification, especially among the Maasai, has pointed to the social divisions (between young and old and between rich and poor) which exist in pastoral communities. Failure to recognize the social heterogeneity of pastoral communities in regard to income and other socio-economic indicators can lead to problems when involving certain groups in project activities.

Present innovations for including the participation of pastoralists in development interventions are the proposed herder association groups in Niger and the para-veterinarian or veterinary scout system of Niger and Ethiopia. The latter program is premised on the belief that veterinary services in pastoral areas can be improved by involving selected members of pastoral communities in veterinary extension services, especially in the identification of livestock diseases and administration of drugs. The use of individuals from pastoral communities for administering vaccines and other extension services can improve and institutionalize to some degree what is already taking place in many pastoral communities, especially in Eastern Africa; that is, the use of syringes and drugs by pastoral communities themselves to inoculate against virulent diseases. Such services would be especially beneficial in pastoral regions where population mobility is great (Pastoral Situation I above) and where the remoteness of the areas restricts the administration of veterinary services under standard extension procedures. Herder association groups, in turn, refer to organizational innovations on the community level which in the Niger context seek to form a legal, institutional mechanism for collective action among herders. This is particularly true in regard to proposals for development activities (cf. Thompson 1981). Importantly, herder associations are not proposed as single-purpose groups, such as the group ranch committee of Kenya, but rather their functions will relate to a number of different activities essential to the well-being of the community. The socio-economic research presently being conducted under NRLI should indicate the appropriate structure the herder association groups should take.

The importance of research and the proper identification of key ecological and socio-economic variables for sound pastoral development interventions indicate that research and monitoring be made an integral component of project activities. Major research efforts should be conducted at the identification stage and an ecological and socio-economic monitoring unit be made a part of the project design. Since the relationship between certain development interventions and project outputs in pastoral areas is still relatively unknown, continued monitoring and evaluations should be carried out even if the information level of the key variables is considered to be sufficient. Monitoring units should be able to inform project management of problems perceived as

development activities are undertaken. On the basis of information on the impact of specific development interventions on the ecological and/or socio-economic environment obtained by the monitoring unit, adjustments can be made in project design. In order to avoid potential conflicts caused by a monitoring (research)/implementation division, the monitoring unit should be represented in the management unit and assist in the implementation by informing management as to the appropriate modifications of project activities.

3.3 Implementation Considerations in Livestock Sector Activities.

While project or program design may be based on a sound understanding of the ecological and socio-economic variables, it may still be inadequate if it does not recognize potential implementation problems. Problems with the implementation of pastoral development projects are receiving almost as much attention in recent evaluations of livestock projects as is faulty project identification and design premised on a poor understanding of pastoral ecology and sociology (cf. Devres 1979a and 1979b). For the most part, implementation considerations come under the institutional factor discussed in section 3.1. In this respect, the question must be asked how project success will be affected by activities which severely tax the host country's personnel and administrative capabilities. For example, a government's ability institutionally to absorb and provide personnel counterparts for large, sophisticated monitoring activities may be limited. Even with training and appropriate personnel, large-scale monitoring units such as Kenya's Rangeland Ecological Monitoring Unit may be inappropriate given the institutional environment of many African countries. Moreover, multi-faceted projects involving more than one ministry may not have an appropriate institutional counterpart in the government arena. Integrated livestock projects also may raise potential coordination problems regarding the timing and delivery of inputs. A large degree of interdependence between project components (e.g., water development and range management) often result in delays since one component's activities may be dependent on the implementation of another component.

The impact of project design on project management and administration should also be realized since it will greatly impact upon implementation. Multi-disciplinary technical teams call for project management that can integrate the activities of the different disciplines into a coherent implementation strategy. It is also essential that the project manager be able to incorporate the findings of the research and monitoring unit into implementation plans and be flexible enough to modify components where appropriate. At the most basic level, this calls for an individual who is used to working in a multi-disciplinary setting and has some understanding of the questions and problems other technicians encounter. While it is recognized that project management greatly impacts on project success in Africa's pastoral sector, the question is left open as to the required experience and technical and management skills expected of a project manager.

The logistics of implementing a livestock development project are also very much affected by the fact that most pastoral areas are located in remote regions of countries where access to essential supplies (fuel, building materials, etc.) are difficult. Problems with attaining such things as building materials, vaccines, and training materials quite frequently delay project activities and in some cases cause certain project plans to be modified. In part, these environmental and logistical factors account for the low priority host country civil servants attach to government posts in pastoral areas. For this reason, quite often livestock projects are not able to attract the best host country personnel and even among those who join the project the turnover rate is very high.

3.4 Case Studies.

The problems of past AID efforts to identify the key indicators of the pastoral context and relate them to project objectives, design and implementation are illustrated in the case of the Kenya National Range and Ranch Development Project and Mali Livestock I, two projects which are now well documented. An analysis of these two development activities highlight the difficulties of livestock interventions when design and objectives are based on a poor understanding of important parameters of the pastoral situation.

1. Kenya National Range and Ranch Development Project.

The project was based in Northeastern Kenya and was initiated without clear understandings of most of the important factors (ecological, socio-economic and institutional) we have noted as essential to project identification. These include a lack of understanding of (1) the spatial aspects of the pastoral economy, (2) the importance of camels and small stock in the pastoral economy, (3) local organizations, (4) government's institutional capacities (both local and national), (5) demographic structure of the cattle herders, and (6) climatic and ecological variables of the region. The project area was typical of Pastoral Situation I where environmental uncertainties are great, resulting in a large degree of herd and human mobility. As with other economies, under these conditions, direct dependence on livestock products (especially milk) for subsistence in northeastern Kenya is important and probably accounts for more than seventy percent of local diet. In such cases, herd structures tend to be biased toward adult females which often make up over sixty percent of the total herd. An understanding of pastoral investment patterns and cash expenditures would have been able more adequately to inform as to the impact of increased livestock production on marketing behavior.³

³ Although project design was misinformed, problems related to procurement of supplies, high project personnel turnover and the unsuitability of certain equipment impeded the implementation of even physical outputs such as drilling wells (Devres, Inc. 1979a).

Failure to understand the important parameters of the pastoral context resulted in a faulty project design that emphasized a grazing block scheme, water development and increased herd offtake. Project objectives were to introduce a systematic program of pasture rotation and, through an organized market system, to increase herd offtake. These objectives were supposed somehow to increase income among the pastoralists by improving livestock production and encouraging increased beef marketing. From the information stated above about mobility, and the uncertainty of environmental parameters, it is not surprising that the Somali herders did not restrict livestock movements to the proposed blocks. Further difficulties were encountered because the grazing blocks were designed for cattle management in an area where camels and small stock are equally important. The forage and water requirements differ for each species, necessitating the exploitation of different areas by different stock type (Helland 1980). In regard to beef marketing, the importance of milk, not beef, in the pastoral diet of northeastern Kenya should have indicated the inappropriateness of the beef marketing interventions. Data on herd structures, had it been collected, would have indicated the potential for changes in beef marketing.

2. Mali Livestock Sector I.

Mali Livestock Sector I was designed to assist the government and people of Mali to increase livestock production and marketing, primarily through better use of current range areas and expansion into new lands. Major components of the sector grant were construction and operation of a 1000 cattle feedlot at Tiemfala, expansion of livestock production by sedentary farmers, and operation of range research component concerning a 27,000 acre managed grazing area at Doukoulomba Park. Similar to the Kenya intervention, the project was designed without a very clear understanding of the ecological, socio-economic and institutional aspects of Mali's pastoral sector. However, this was not due to lack of research, but the failure of project management to incorporate research findings into project design. Extensive research was funded by AID, but its results were not incorporated in project design or implementation (Eskelinen et al. 1979). Thus, flawed assumptions concerning mis-management of the range by the pastoral herders formed the basis of range management interventions. Marketing interventions and feedlots were intended more to supply low cost meat for urban consumers and foreign exports than they were to increase income for the pastoralists.

Mali Livestock I was recently evaluated and found to have had little measurable success in developing Mali's livestock sector (AID 1980). This is probably an overstatement since it may still be premature to measure the impact of the activity. Nevertheless short-

comings identified with the project in the evaluation report indicate the failure of the project to recognize the more important aspects of the pastoral context. And because of such oversights, the project was premised on invalid socio-economic assumptions (AID 1980:1). Institutional factors related to Mali's capacity to implement and absorb recurrent costs of the project were also not properly assessed at the project identification stage. While research and evaluations were an important aspect of the Mali activities, the research and evaluations had not been properly incorporated into modifying project components. This was in spite of the fact that the design was flexible enough to allow for this.

4. IMPLICATIONS FOR POLICY

4.1 Pastoral Projects or Pastoral Programs: The Need for Integration and Flexibility.

The complexities of the pastoral sector in Africa have indicated that pastoral projects must be flexible in design and often experimental in nature. This has been the emphasis of some recent AID activities in Africa (e.g., Niger Range and Livestock Project and Upper Volta Village Livestock Project)⁴ and should remain so for the immediate future. Yet the limitations imposed by AID's five year project cycle on livestock interventions and investments, even when experimental in orientation, necessitate that in many cases programs may be more appropriate than projects. For example, in the African context it is not unusual for two out of five years of a project cycle to be drought years where up to fifty percent of cattle die. A program implies both an integration of a range of activities (range management, ecological and socio-economic monitoring, water development) and a more permanent status than is the case with a pastoral project. Institutional capacity to implement pastoral projects is virtually non-existent in many African countries and should be established, preferably through a program approach, before specific interventions should be made. Importantly, a program could provide a mechanism for linking training and research to extension and actual field activities. This has not been the case to date for most pastoral development projects in Africa.

Mono-sector investments (i.e., livestock) in pastoral Africa may not be appropriate for many pastoral regions of Africa. In a number of African pastoral areas, large numbers of persons are without animals. This finding, which has recently been confirmed by NRLD socio-economic research unit, implies the desirability of a multi-sectoral or integrated approach. A present example of this in Africa is the Arid and Semi-Arid Lands (ASAL) Unit in Kenya which is mandated with improving the well-being of Kenyans in the dry lands. In this case, the focus is on people, not range, livestock or

⁴ (I understand the Upper Volta project has been discontinued, see Sperling 1980).

water, and for this reason involves Ministries of Health, Education and other areas not directly related to livestock production. Recognition is made of the fact that livestock production is not the sole concern of Kenya's pastoralists and that off-farm employment and crop production may be equally important, especially for the poorer persons. Due to certain pressures (demographic, economic, etc.), the trend toward diversification of Kenya's pastoral sector will probably accelerate in the future.

As noted earlier, however, implementation problems often arise in the context of integrated pastoral development activities. In this respect, a program rather than a project would allow more time to resolve such problems and it is our belief that the benefits from an integrated framework outweigh the organizational and implementation costs incurred with such an approach.

4.2 Role of Host Country Governments and the Recurrent Cost Factor.

There are a number of important policy issues which emerge in regard to the role of African governments in pastoral development. For example, quite often host government policies, such as market and price regulations, or lack of policy inhibit successful interventions in the pastoral sector aimed at raising the income of herders. Interventions which do not address policy problems may only be "scratching the surface". Such policy impediments, however, often require fundamental changes among host country political priorities that donors are reluctant to push. Similarly, African government attitudes toward extensive research, especially socio-economic, are usually not very favorable. Pressure to "get on" with project activities before feasibility studies are completed is likely to be applied and requires a strong policy stand on the part of the donor. In the Upper Volta Village Livestock Development Project, government pressure to curtail research and experimentation resulted in the initiation of project activities before originally planned (Carter et al, 1980:2-4). The importance of research for pastoral projects must be explained and made aware of by African governments.

The ability of the host country government to absorb recurrent costs once the donor has withdrawn is also a policy issue which must be assessed at the project identification stage. A well designed project in terms of its technical components and awareness of the pastoral environment may not be appropriate given the recurrent cost factor. Less ambitious pastoral programs may have to be undertaken in countries where capacity to absorb recurrent costs is low. In most cases, technical interventions in livestock marketing (i.e., feedlots) and institution building are especially costly to maintain.

4.3 Trade-offs Among Project or Program Objectives.

Though most AID projects cite multiple objectives for interventions (AID 1979), it should be recognized that these goals are not mutually harmonious. For example, the goal of promoting herder well-being in pastoral development projects over other development objectives often means that certain trade-offs must be made in regard to the country's national economy. Government interest in serving urban constituents and the demand for foreign exchange often dictate policies which are unfavorable for livestock producers. This is best exemplified regarding (1) price policies which favor urban consumers and (2) irrigation projects which utilize rangelands to grow cash crops. It should be noted that while the pastoral contribution toward earning foreign exchange is usually small in most African countries (exceptions Botswana, Somalia and a few West African countries), its contribution through livestock sales to the domestic economy is usually great. Similar trade-offs among project objectives may also be experienced when interventions propose to simultaneously improve range conditions and herder income. Measures to improve range conditions through, for example, restricted grazing or destocking may not increase herder income or may even reduce it if the added value of animals kept under the proposed management system do not account for the loss of income due to stock reduction or new costs such as grazing fees or additional labor inputs. A clear policy position should be taken regarding project objectives that conflict with the goal of increasing herder well-being or income.

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