

PROJECT EVALUATION SUMMARY (PES) - PART I

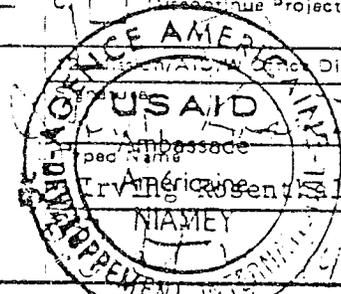
1. PROJECT TITLE Niger Range and Livestock		2. PROJECT NUMBER 683-0202	3. MISSION/AID/W OFFICE USAID/Niger
5. KEY PROJECT IMPLEMENTATION DATES		4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 82-4	
A. First PRC-AG or Equipment FY 77	B. Final Obligation Expected FY 80	C. Final Input Delivery FY 83	<input type="checkbox"/> REGULAR EVALUATION <input checked="" type="checkbox"/> SPECIAL EVALUATION 7. PERIOD COVERED BY EVALUATION From (month/yr.) Sept. 1977 To (month/yr.) Sept. 1981 Date of Evaluation Review Sept. 1982
6. ESTIMATED PROJECT FUNDING		8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR	
A. Total \$ 5,770.1			
B. U.S. \$ 5,329.3			

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Organize the first herders' associations	Dan Stillman	completed
2. Organize and conduct the collaborative field study of livestock production	Dan Stillman	on going to PACD
3. Organize data processing routines	Dan Stillman	11/30/82
4. Initiate agrostological/vegetation mapping of the entire project zone	Dan Stillman	7/82 (on going to PACD)
5. Organize project cartographic requirements	Dan Stillman	8/82
6. Implement "pastoral relays" through herders' association	Dan Stillman	on going

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS			10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT		
<input type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input type="checkbox"/> Other (Specify)	A. <input type="checkbox"/> Continue Project Without Change		
<input type="checkbox"/> Financial Plan	<input checked="" type="checkbox"/> PIO/T	_____	B. <input type="checkbox"/> Change Project Design and/or		
<input type="checkbox"/> Logical Framework	<input checked="" type="checkbox"/> PIO/C	<input type="checkbox"/> Other (Specify)	<input checked="" type="checkbox"/> Change Implementation Plan		
<input type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	_____	C. <input type="checkbox"/> Discontinue Project		

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles):

Paul Daly, Project Officer through Oct. 15, 1981
 Dr. Ali Dankintafo, Project Director
 Ray Waldron, Project Officer from Oct. 15-Jan. 4, 1982
 See Executive Summary for Dan Stillman, Project Officer
 Evaluation team members from Jan. 5 to present



Director of Approval
 Ambassador
 Irving Rosenberg, Director
 NIAMEY

Ministry of Rural Development
Government of the Republic of Niger

United States
Agency for International Development

NIGER RANGE AND LIVESTOCK
DEVELOPMENT PROJECT

(683-0202)

1981 PROJECT EVALUATION

** Executive Summary **

Executive Summary

1981 EVALUATION OF THE NIGER RANGE AND LIVESTOCK PROJECT

1. Introduction. The first full-scale evaluation of the Niger Range and Livestock Development Project (NRL) took place in August/September 1981. The evaluation came at an important juncture, when the U.S.A.I.D. Project Manager who guided the project from its inception was about to move to a new posting, and just as the Project was to get a final one-year extension, both to complete its work schedule and as a transitional year to a possible second phase project. The evaluation team thus tried to keep a positive focus on actions to be undertaken and/or completed to bring the present Project to a successful conclusion.

The Evaluation Report attempts a full analysis of a Project, from its background to its likely implications. It begins by summarizing the livestock sector in Niger, and the problems to which the Project was addressed. It traces changes in the sector and compares the NRL with other major projects in the country. The second chapter traces the organization and rationale of the Project from first conceptualization to implementation. The third chapter consists of the evaluations of the technical components of the Project in range management, livestock development, veterinary intervention, socio-economic studies, and health interventions. Chapter IV measures progress toward the achievement of the formal project outputs and goals, specifies the gaps, and elaborates the recommendations made by the evaluation team for the completion of the current Project. Overall, it is the judgment of the team that the goals of the NRL are important, and that the Project is likely to achieve them if it works at full efficiency in its final year. The final chapter compares the NRL to other Sahelian A.I.D. projects in the livestock sector and outlines the contributions to sector work that the NRL is making. Suggestions for revising goals and carrying forward the positive aspects of the NRL into a second phase comprise the final section of the Report.

2. The Evaluation Mission. This Evaluation was carried out by a bilateral team under the leadership of a U.S.A.I.D. consultant. The team was made up of three U.S.A.I.D. consultants, two A.I.D. employees, and three Nigeriens (one of whom was from outside the Ministry of Rural Development in which the NRL lies), and among them were specialists in each aspect of the work of the Project. On the ground, the NRL consists of a large staff carrying out a broad range of activities across a wide expanse of territory in central Niger. With the cooperation of the Government of Niger and of U.S.A.I.D., the team was able to visit nearly all NRL activities, and to interview nearly all staff, but visits and interviews were necessarily fleeting. Individual team members then wrote their sections of this Report, critiques were offered, and the final draft edited by the Team Leader. The Evaluation began on August 6, 1981, and was completed on September 9.

Chapter I

THE LIVESTOCK SECTOR IN NIGER: ITS CHARACTERISTICS AND EVOLUTION

1. The Livestock Sector in 1976. When the Niger Range and Livestock (NRL) Project was formulated in 1976, it was largely in response to the Sahelian drought of 1973/74 and the devastating effects it had on the Nigerien economy. The national herd was decimated, a vast relief program had to be mounted, government revenues were starkly diminished. The weakness of institutional structures was a matter of deep national concern. In the aftermath of the drought, the government began to plan more fully to intervene in the rural sector in general and the livestock sector in particular to increase productivity and income security. It was clear that this task was enormous: in the pastoral zone, low productivity, weak services and communications, a dispersed population, limited or even declining natural resources, and poverty would all have to be addressed in planning for the future.

2. Planning for the Pastoral Zone. Central Niger consists of semi-arid rangelands with only spotty cultivation at oases and seasonal river courses. The key issue in planning the recovery of the pastoral zone, therefore, appeared to be better management of the rangelands, with a view to protecting and preserving them from overgrazing. "Desertification" seemed imminent, and various studies conducted at the time appeared to confirm this imminent threat. It was in this context that the guidelines for modernizing the pastoral zone were drafted by the Government of the Republic of Niger (RN) in early 1977. These included plans for an overall system of range management in the whole zone; increased animal productivity, particularly through modifying herd composition; improved management of herds and the range, if possible by the herders themselves; a new Office in the Ministry of Rural Development in charge of modernizing the zone; credit and extension aid to herders organized into associations; structures for marketing, finishing, and fattening animals; greater emphasis on cattle and sheep raising; and social actions such as health, literacy training, and the supply of primary consumption goods at reasonable costs. Thus, although the formulation of both the NRL Project and the RN guidelines took place in a situation highly charged with the emotional after-effects of the drought, the RN sought, from the beginning to improve the living standards in the pastoral zone on a long-term basis. Because of this commitment to the long-term, and because it was apparent that knowledge of the zone was so scanty that few intelligent actions could be undertaken immediately, the NRL set out a plan to deepen understanding of the region before concrete steps were elaborated to conserve and develop all the resources of the pastoral zone.

3. Sectoral Change Since 1976. In order to reconstitute the herds lost due to drought, the RN elaborated a program in 1976 which would undertake many significant actions, such as the further extension of its systematic vaccination campaigns; the limiting of croplands in certain areas; the establishment of a pastoral water policy; rationalization of the utilization of the pastoral zone in order to increase the rate of production and to decrease the vulnerability of the economy to climatic and hydraulic conditions.

4. Major Projects. To implement this program, substantial resources were sought, in part from external sources. In addition to many smaller-scale RN projects in the sector, three major livestock projects have been established from West to East across the pastoral zone. Sud-Tamesna (with support from F.A.C.), the NRL Project (with U.S.A.I.D. support), and the Centre-Est, or Zinder, Project (with IBRD support). The Sud-Tamesna Project began in April, 1980, but will be unable to realize its plans as quickly as had been hoped due to a lack of monetary resources. The project now has received funds and can begin to pursue its activities. It will operate pastoral supply centers, build five pens/vaccination corrals, and do a series of studies of its zone of operation. The Zinder Project is now in its third year of implementation. It has been involved in such activities as setting up pastoral supply centers, training veterinary auxiliaries, supporting the vaccination programs of the Department, extending credit for peasant fattening schemes, and market construction. The NRL Project adopted a strategy of undertaking in-depth research before going into a Phase II with specific activities on a larger scale. Concrete action has involved the construction of four veterinary posts, veterinary auxiliary training, and an in-depth study of pest-like diseases in small ruminants.

The three projects differ in terms of the size and diversity of their zone of intervention, the number of people and animals, geographic factors such as hydrological conditions, and in the scope and ambition of the projects themselves. Despite these differences in conception, philosophy and resulting strategies, however, the projects share the same objective of increasing, in the long term, animal production and productivity, and improving the way of life of the herder.

Chapter II

A HISTORY OF THE NIGER RANGE AND LIVESTOCK PROJECT: ORGANIZATION AND MANAGEMENT

5. Project Goal. The NRL Project was created against a background of severely limited knowledge of, or strategies for dealing with, Sahelian pastoralist populations. Until 1973, the United States Government (USG) had had only limited assistance programs in Niger, and the US itself had an extremely narrow range of accumulated expertise on Nigerien conditions. Prior livestock programs in other parts of the world had often emphasized the settling of nomads, stock control programs, and production directed primarily to meat markets outside pastoral areas. All of these ideas were inappropriate to conditions in Niger. Instead, the RN and the USG were able to fashion a project which was focused squarely on improving the lot of the small producer (rather than focusing on livestock exports), on studies that would guide careful and appropriate actions (rather than on programs of potentially negative but immediate interventions), on evolving a broad framework for conservation-oriented action in the whole pastoral zone (rather than limited intervention in favored or well-known localities), and on working with small producers themselves in a collaborative and exploratory manner (rather than on simple extensions of government control and direction in the zone). This effort was to be carried out in a 40,000 square kilometer triangular area of central Niger between the towns of Agadez, Tanout, and Tahoua.

6. Project Concept. The goal of raising the living standards of the population of the pastoral zone in an ecologically conservative manner was immediately seen to be a long-term process. Achievement of that goal was to be divided into two project phases, of which this project would be the first. Given the restricted knowledge referred to above, this phase was to consist of studies and pilot interventions. A second phase, if agreed and funded, was to implement a long-term action program based on the findings of Phase I. The project design outlined a large number of studies and pilot interventions under the leadership of four long-term expatriate specialists (range management, animal production, development sociology/anthropology, and livestock economics), working with Nigerien and other short-term US staff.

7. General Constraints to Implementation. The major constraints on implementing the project have been threefold. At the intergovernmental level, there were problems directly related to language problems but also to unfamiliarity with personnel, procedures, and concepts on both sides (range management, for example, had no clear French translation). Furthermore, during the design stage there were strong differences of emphasis as to some potential components of the Project between the project design team and the RN staff with whom the team was working. The second constraint was posed by a lack of American expertise in Sahelian Africa, which, coupled with the lack of French language capabilities in US universities and consulting firms, proved a serious handicap at a time when dozens of projects were being created across francophone Sahelian West Africa. This deficiency of US expertise had an immediate and lasting effect on the NRL, since searches were organized both at universities and in the private sector for project teams to no avail. The senior consultants of the project finally were hired through recruitment of individual contractors. The final constraint was in the area of supplies and logistics. U.S.A.I.D. requirements for the purchase of American commodities and technical assistance have affected project implementation in several ways. The performance of the U.S. vehicles and other commodities (scales, camping gear, office machinery, etc.) with non-US makes more widely available in Niger, has regularly been a point of contention with RN staff who must use them. Second, the choice of Maradi as Project Headquarters was a location far removed from the actual project zone and from the capital. This has resulted in difficulties of communication and administrative liaison for the Project Director, and has had some direct costs for the Project. Third, there have been difficulties in obtaining waivers for non-U.S. citizens to be recruited to the project. On two occasions, months-long delays in obtaining these waivers lost potential worktime on the study of both a senior consultant and one junior person, each eminently well-suited for the Project. Thus procurement requirements have delayed the Project in several ways, despite early hopes for the true internationalization of the Sahelian development effort.

8. Overcoming Constraints. The Senior Consultants. In attempting to overcome some of these constraints, there have been several departures from the implementation structure foreseen in the Project Agreement. These have, for the most part, been creative and flexible responses to the heavy constraints under which the project began operating. In terms of the senior consultancies, by mid-1979 it had become clear that no viable university or institutional contractors were forthcoming! The long search for four long-term, senior staff members (range management advisor, animal husbandry advisor, development sociologist and a market economist) ended by doubling up the tasks and hiring two senior consultants on individual contracts. The two, however, were only available for shorter periods of time on visits to Niger to supervise assistants on the ground. The costs of this drastic reduction in anticipated senior personnel have inevitably been to reduce the range of perspectives, to broaden the scope of responsibilities to such an extent that equal attention to all has been impossible, and to cause problems in the coordination of activities, the synthesis of programs, and the pace of the Project itself.

9. The Technical Staff Assistants. One of the most creative responses of the NRL Project management to the problems of securing well-trained and experienced project staff was the creation of Technical Staff Assistant (TSA) positions. TSAs tend to be young people with demonstrated commitment to field work and often with local experience and language capability. To date, eight TSAs have worked with the NRL as research assistants, work team managers and administrators, and each has made a significant contribution to the Project. The TSA position should be replicated for effective field operations beyond NRL and even U.S.A.I.D./N.

10. Field Operations. While the project team was still being assembled, the project management faced the simultaneous task of moving the Project into actual field operations. There was a two-year lag between the signing of the Project Agreement in September 1977 and the arrival of both Project commodities (notably the vehicles) and the first major contingents of both range/livestock and the social/economic team members, a lag which can largely be explained by the problems encountered in recruitment as outlined above. Project headquarters were established at Maradi, where the Director works and where logistical and administrative support of field work is provided to the entire project staff. The NRL "project zone" itself has undergone many changes since its original definition and now covers an area fifty percent larger than the original triangle of 40,000 square kilometers. The NRL concentrates its actions in a few areas, however, and the most intensive work is going on in key areas which represent different vegetation zones, economic patterns, ethnic groups, and herd types. Notwithstanding this concentration, the NRL Project has operated in four (of the seven) Departments in the country and in the administrative zones of ten sub-prefects, chiefs of posts, and districts of other administrative and technical officers. Project direction has done an excellent job of liaison to keep field operations moving in this administrative thicket. Field work has been hampered only by the lack of provision of per diem allowances to Nigerien staff, a situation which has caused an understandable level of resentment among people already on low salary scales.

On the ground, the Project thus consists of (1) Project Management at U.S.A.I.D. offices in Niamey, with primary financial and administrative control; (2) Project Headquarters in Maradi, with the Project Director and all field support facilities (mechanical yard, payroll office, library, activity offices and files, etc.); (3) a "range management team" under the direction of one Senior Consultant, with two TSAs, several Peace Corps Volunteers, and middle-level and junior Nigerien personnel carrying out in the zone at large; (4) a "socio-economic team" under the second Senior Consultant, with four TSAs, one long-term consultant, and middle and junior level Nigerien personnel carrying out work among pastoralists in various areas of the zone; and (5) a long series of consultancies of shorter or longer duration, working in diverse relationships to permanent team members, and leaving behind a multitude of special reports. There is no de jure chief of party to coordinate the substantive aspects of all of this work.

11. Omissions in Project Activities. Several modifications of the Project Grant Agreement have been made during implementation. Omissions have occurred as a result of the merging of the planned four separate senior advisorships into two. The most significant departures have been in the livestock production activities, but some aspects of the range management component have been neglected as well. On the socio-economic side of the Project, the major missing link to date is the creation of pilot herders' associations, an activity considered to be critical to testing programs for the long-term self-management and development of the pastoral population. The evaluation team gave highest priority to getting on with this crucial project activity.

12. Project Additions. While these omissions have compromised the achievements of the Project in certain respects, project management has been creative in adding activities not originally designed into the Project. Foremost among these have been human health research and intervention; para-veterinary training, and aerial surveying of the pastoral zone. While past efforts on the part of the RN to reach pastoral populations for health services had largely reached only the town-based populations within the zone, the NRL has been able to undertake a variety of nutritional, medical, sanitary, and ethno-medical studies by contracting a physician to work with the Project. Demands for veterinary interventions have also been strong at every level, and the NRL program for training veterinary auxiliaries has become a model for the other pastoral zone projects in the country. The NRL was also able to secure a survey plane and technical services from the International Livestock Center for Africa (ILCA) and completed the first part of a major aerial survey in early 1981, with the second part scheduled for later in the year. Knowledge of the human and livestock populations, of cropping patterns, of vegetation types and associations, and of water points has all been broadly expanded by this new technique, which is supplementing the more intensive work on the ground.

13. The Project "Image". Yet, while out in the field these positive developments have taken place and a real dialogue has begun with the herders themselves over paths toward self-managed development, the NRL Project appears to have gotten a reputation for being "all theory and no practise." The Nigerien perception seems to be that enough time has been spent on studies, and that it is now time to move to concrete actions. A.I.D./Niger appears to share these perceptions. The evaluation team has found, however, that these perceptions are wrong in two major respects. First, long-term range, livestock, and social research are permanent aspects of all livestock development programs. Second, the image of this project as being "all studies" is incorrect - indeed, quite to the contrary, its concrete interventions in veterinary and human health auxiliary training, in veterinary post construction, and in dialogue toward association formation compare favorably with the actions taken in the pastoral zone by the other major projects. While the Centre-Est (Zinder) Project has done more concrete work among herd-owners in the sedentary agricultural zone, the NRL is much more deeply involved in carefully-planned and successful intervention with full pastoralists.

Chapter III

TECHNICAL ANALYSES OF PROJECT ACTIVITIES

14. Range Management

14a. Goals. The main objective for rangeland management is to develop integrated strategies of exploitation to improve living conditions of individual herders as well as of the overall Nigerien society. In addition to edaphic and climatic factors, there are of course factors under human control, either by the FN government or the individual herder, which seriously affect the rangeland. The NRL Project called for various studies ranging through many disciplines which would form the basis for an ultimately integrated, sound, and sustainable general rangeland development program. NRLs main objective in range management was to determine the carrying capacity and associated suitable grazing programs as a basis for future recommendations. Two major research sites were established for this purpose - one at Ibecetene Ranch in Tahoua Department and one at North Dakoro Ranch in Maradi Department. The range management program as a whole was to involve (1) a continual assessment of range conditions along many lines of approach, (2) mapping, (3) reseeding experiments, (4) in-country and long-term range management training, (5) experimentation with surface water and well technology, and (6) pilot fire control development.

14b. Major Project Activities.

(1) Animal/Vegetation Studies. The major studies of the Range Management section have been initiated to examine animal/vegetation dynamics. The essential aim of the studies at each of the two ranches was to establish, from animal and pasture response curves obtained at different use intensities, the carrying capacity for desired individual animal production levels. Optimum levels of individual animal productivity and unit area productivity (per herd) for each production system intensity were sought. These studies take the form of grazing trials carried out on fenced pastures with selected animals. Research on the effects of grazing upon vegetation are also in process, and preliminary conclusions show how pastoral changes are taking

place in response to the level of animal treatment. The studies have found, for example, that heavy grazing during the wet season preserves soil moisture through a reduction in the plant cover/canopy and thus the transpiration rate. The importance of this finding is that both annual and perennial plants grew earlier in the following season, resulting in an increase of 15 kg more milk in the first month. This finding suggests that other things being equal, reducing stocking rate arbitrarily may be of overall negative efficiency. The main goals as outlined for the range management portion of the Project Grant Agreement are thus beginning to be met, despite deficiencies which have resulted from the sluggish and delayed take-off. On the other hand, it is of prime importance that these studies be allowed to continue for a minimum of four to five more years, since fluctuations in climatic conditions and the cumulative consequences of grazing will seriously modify any preliminary conclusions.

(2) Other Elements. Studies on water supply have also yielded impressive results and can now begin to form the basis for water supply and general management decision-making. Reseeding experiments have not been carried out for lack of sound technical capabilities for doing so, and fire control methods have not been examined. Aerial vegetation surveys are referred to elsewhere, while all of the long-term training of Nigerian students is well underway.

14c. Analysis of Results as a Basis of Rangeland Improvements. The greatest constraint in attempting to improve the pastoral zone productivity is dry season forage production and quality. Under present conditions, the only means of securing the highest quality diet available to the livestock is through transhumance, involving an added energy expenditure precisely when energy supplies are lowest. Since no economic means of nutrition improvement through the import of feeds from other areas is available, the likeliest methods for overcoming the dry season constraint are believed to lie in some form of controlled rangeland management. Toward this end, herder associations will be introduced which will offer education programs in rangeland management and improved livestock husbandry methods to the herders. Since credibility with the herders is an indispensable prerequisite for such an undertaking, it is important that a broad knowledge of pastoralism, including soil, plants, and animals should exist and that several pilot herders' associations should be instituted to minimize the risk factor involved. Studies of technical aspects of the pastoralists' own systems of production are not yet underway, despite the fact that credible extension efforts will have to be based on factors within those systems, combined with the technical possibilities uncovered in the grazing research being undertaken. The study of existing livestock husbandry methods is a critical gap in the existing project work, but plans for starting this study are now taking shape.

15. Livestock Production

15a. Goals. The livestock production studies and pilot interventions called for in the Grant Agreement were meant to test the economic and technical viability of various available inputs, as well as to construct facilities to expand the outreach capabilities of the existing Livestock Service. Components included (1) a study of the cost-effectiveness of feed and veterinary inputs in sample herds, (2) a study of the recurrent costs of project interventions, (3) support for the existing animal health program, (4) construction of four veterinary posts and ten livestock handling facilities, (5) the design of an extension program for Phase II, and (6) a study of the marketing system.

15b. Project Achievements.

(1) Proposed Cost and Benefit Study. NRL Project Management decided to eliminate this study for fear that severe difficulties would ensue from inequities felt by some herders if others got the anticipated treatments. Instead, the NRL Project has been involved in ongoing alternative studies in order to provide data on livestock production parameters. These studies have included collecting herd composition data on 1,005 herds in the northern area; intensive data collection on Wodaabe and Tuareg herds which provide information on herd compositions, reproduction, mortality, milk production, family consumption, marketing and pricing; and an animal health study to define better the diseases and parasites important in the zone. It is suggested that additional statistics be compiled for the determination of costs and benefits of the recommended interventions, as the data now being collected are insufficient. Additionally, an aerial survey has been conducted in the dry season and collected data on animal numbers by species, breed, season and concentration which should enable a more effective extrapolation of the limited herd production data to all the zone.

As mentioned in the range management section, further studies need to be undertaken, for example, an intensive herd production study which should collect data on herd compositions, reproduction, morbidity, mortality, milk production, and animal health care by date, age and weight of animals in at least one Tuareg and one Wodaabe herd for a complete year. A review of production and cost-benefit parameters on the Nigerien Government Ranches should also be conducted, since it could be used to estimate production resulting from improved practises. A new consultant should be contracted to consolidate and analyze the animal production and range data being collected and utilized by the socio-economic team, the veterinary team, the animal production and range team, and the marketing team.

(2) Recurring Cost Study. A marketing survey and recurring cost study was begun by a short-term consultant, whose work was not good enough to continue. It is suggested that this recurring cost study be undertaken in consultation with the socio-economic team as soon as a plan for Phase II is presented. Data or analyses from the Centre-Est Project may also be available for such determinations.

(3) Support for Existing Livestock Programs. Some operational funds have been supplied to the Livestock Service general fund for fuel, materials, etc.

(4) Construction of Facilities. The four planned livestock posts are under construction and near completion. Since the RN has had to revise early optimism that it could equip the posts with refrigeration, furniture, and means of operation, it is recommended that the NRL undertake these costs to assure their functioning during the transitional period to Phase Two. The ten vaccination parks have not yet been constructed, but supply of portable corrals is planned.

(5) Design of Livestock Extension Program. Twenty veterinary auxiliaries have been trained at the village/camp level to apply minimal animal health care. The next section of this report adds further information about this program. Until additional information is gathered, it is recommended that these efforts limit themselves to animal health care so as not to jeopardize credibility with the herders.

(6) Study of Major Livestock Markets. A market study from north of the zone to Maradi was conducted but again was of poor quality. Much more intensive studies of markets at Margaria and Chadawanka in the agricultural and the intermediate zones, and elsewhere, have recently been initiated by the socio-economic team. A scheduled CRED marketing study will attempt to tie all markets in the zone together into one study to identify livestock and commodity flows. Coordination of all of these studies is deemed very important by the evaluation team.

(7) Water Point Survey. Though designed under the range management section of the Project, this element is discussed here. Questionnaires on ownership usage, herd movement, and other matters have been completed on 1,062 water points in the zone, estimated to be about 50% of the total water points. The serial survey will provide some additional information, and recent RN Hydrology studies will complete the current map of water points in the zone. Based on these findings, specific intervention in Phase Two should be planned, such as testing of catchment tanks, repairs of traditional wells, or concrete wells and/or deep wells combined with concrete wells, depending on the choices available and after due consideration of the costs and benefits involved.

16. Veterinary Activities. The NRL has engaged in four areas of veterinary intervention. (1) As mentioned, it has offered financial support to the activities of the existing field service for mounting the traditional vaccination campaign. (2) It has constructed the programmed veterinary posts. (3) At the request of the RN, it has engaged a consultant veterinarian for several months to extend knowledge of and recommend strategies for dealing with small ruminant diseases in (and beyond) the zone. This consultant was in the midst of his work at the time of the evaluation, and it was possible to offer some suggestions as to the scope of his work. Small ruminants (and camels) have received much too little attention in African livestock project work, and in the work of the Livestock Service of the RN, so this consultancy is a timely addition to the Project. (4) The NRL, under a Livestock Service technician attached to the Project, has begun a program of training members of pastoral communities as (unpaid) veterinary auxiliaries. Based on the equivalent program in the Ministry of Health, twenty volunteer auxiliaries were given a short course in subjects from medical pathology to nutrition and were taught to administer simple veterinary remedies for a number

of the most common ailments from a kit that they keep. In the first month of their work back in their encampments, these auxiliaries treated over 3,300 animals (all medicines are paid for by the herders involved). Problems of adequate supervision, refresher training, restocking supplies, and keeping up morale remain to be dealt with, but are shared by the extensive human health auxiliary system in Niger. The NRL recruitment and training program has been a model for replication by other projects.

17. Socio-Economic Activities

17a. Goals. Because past livestock development projects in semi-arid areas of Africa have had dismal performance records, the NRL Project from its inception sought to gain a firm understanding of the social and economic conditions which actually pertain in the zone before recommending specific actions. As in range management, then, social research activities and pilot activities were thus designed to produce an understanding of the socio-economic realities of the production systems in the project zone in the first phase of the project, to lead to concrete interventions in a second phase.

Specifically, the project was to: (1) study demographic, socio-economic, and ecological factors affecting the development situation of the pastoral communities in the zone; (2) create a network of "community aides" as a linking network for development actions and monitoring; (3) create extension materials and test extension methods; (4) create pilot herders' associations (not bound to a particular area of land) on various criteria as organizations for participatory planning and discussion; (5) create conditions in which at least one pilot association would undertake a range management effort; (6) examine possibilities for institutionalizing a herder sociology unit within the Livestock Service; and (7) carry out various subsidiary studies.

17b. Project Activities. Socio-Economic Studies. The socio-economic unit has produced a substantial body of technological, sociological and economic materials dealing with the several ethnic groups within the project zone. One of the great strengths of the research is that the socio-economic field staff have achieved an excellent relationship with the herders. Much time was needed to identify and train local assistants and to adapt research schedules to local languages and conceptual systems. This involvement of local people rather than using secondary students from elsewhere has proven to be an inspired innovation which should be emulated in projects elsewhere.

Coordination problems have been created by the absence of formal leadership linking the range management and socio-economic field teams. A "chief of party" position was anticipated for the NRL Project but never filled. Since the socio-economic group has elected to concentrate its attention largely (though not exclusively) on household-level studies, they have little opportunity systematically to comprehend the ecology of the ongoing production systems. Through observations made in the field, they have some good insights into that system, but they are not in a position to undertake systems-level analyses of the dynamic relationships among the herders, animals, plants, water, etc. Closer coordination among the component research teams must be a priority concern of the last year of the Project.

The documents reviewed also show little effort to communicate the work of the two units (socio-economic and range management) to RN or to U.S.A.I.D. senior staff, with the effect that the significance of the Project for those charged with development interventions is more elusive than it need be. Similarly, the Nigerian students being trained with NRL funds might have been brought into project work more fully than they have been - for them, too, the significance of this phase of the Project has been nearly lost.

Despite the uniformly admirable quality of the research, there appears to be a general absence of an overall framework, a theory from which non-random hypotheses to be tested in the field are derived. It is suggested that the socio-economic unit consider carefully the theoretical implications of their work, and determine how the various sub-studies (household level studies, mapping, etc.) form a coherent whole.

A great deal of effort is going into the household level studies. These involve highly detailed recordings twice weekly of budgets, transactions, time, labor and capital allocations. The methodology used is sound and this, along with similar household level surveys in Mali, is the first time such a systematic examination has been undertaken among pastoralists. The information to be derived from these household level surveys is essential for the effective organization of pastoral associations, for they provide enhanced understandings of the nature of credit and debt, social differentiation, etc. By providing detailed information on the connections between income levels, control over animals, labor mobilization, etc., these studies should give answers to a wide range of important questions.

17c. Other Activities.

(1) Mapping and Aerial Surveys: The socio-economic unit is producing a useful series of maps identifying the movements of Tuareg and Wodaabe across a year's transhumance, locating watering points and identifying their ownership, and defining the major environmental features which relate to these movements. One of the obvious payoffs from this activity is the demonstration of the survival value (the "adaptive strategy") of mobility with a minimum of formal constraints. The team is aware of the limitations imposed by observing only a singly year's movements, or even a few contiguous years' movements, to indicate the kinds of changes which obtain over time, and in association with droughts, epidemic diseases, etc. In the meantime, the ILCA-aided aerial surveys are providing broad demographic data on camp sizes, seasonal movements, total population and other human factors.

(2) Herder Associations. Among the most interesting and important findings of the socio-economic unit deal with the question of the establishment of pastoral herders' associations. Unlike other projects in which pastoral associations were conceptualized by outsiders who defined what the herders' needs were, the NRL Project started from the point of view of the herders themselves and their perceptions of their own needs. What has emerged from this is that most herders are suffering intense poverty. Large numbers of them have not reconstituted their own herds after the drought, but rather they herd the animals of urban-based traders and functionaries and have only access to the milk and not to any offspring as may be produced. Thus, from the point of view of these impoverished herders, the Herders' Associations

must respond to the condition of insufficiency of animals and inadequate supplies and availability of grain. Other interventions mentioned by the local people are human and veterinary health services and reasonably priced consumer goods such as tea, sugar, and cloth. The socio-economic team is also ascertaining herders' extensive views of indigenous strategies for "range management." The socio-economic team has identified groups of families ready to form pilot herders' association, and these organizations should be begun as soon as possible. "Range Management" will become an eventual goal of any such association and will not be the immediate justification for it or demand upon it.

17d. Research Methodology. The present studies will yield current quantitative and qualitative primary pastoral data from which real constraints to efficient and equitable development can be identified and explained. The resultant identification and correlation of incentives and obstacles to development will lead to the recommendation of specific interventions and general fulfillment of the NRL Phase I mandate. The team has chosen linear programming, modeling and simulation as the analytical tools for comparing the capacity of various pastoral and agro-pastoral systems to provide pastoral producers with basic necessities. A total of 222 families are under investigation, 115 from the pastoral zone, 44 from the agro-pastoral, and 63 from the sedentary zone. The research was designed to examine five different production systems in the three ecological zones. The principal variables quantified in the samples are labor utilization practices, enterprise choice, use of inputs, and productive outcomes. One of the most important strengths of the socio-economic research methodology is the thoroughness and breadth of the data being collected. The surveys are both serial and cross-sectional in nature. The amount of data already collected should insure sufficient sample size for statistical testing of simple correlations as well as more sophisticated hypothesis testing. It is now urgent to complete the planning for these analyses. Without this planning, the NRL Project risks coming to an end with vast amounts of un-analyzed data.

18. Social Interventions in the NRL. The underlying philosophy of the NRL is that any long-term development in the pastoral zone requires an essentially social solution. Livestock (and all) projects are, in reality, "people projects." Creating rapport, confidence, with the community undergoing change is a fundamental necessity only after which other actions can be taken. The Zinder Project has attempted to engender this rapport with a program of supplying basic consumer goods to "pastoral relay" centers far from markets. In the NRL zone, relatively well supplied with marketing infrastructure, the NRL has instead instituted a program of human health auxiliary training. This program is the first serious effort to expand the Ministry of Health auxiliaries' program to nomadic pastoral communities. Results to date have been encouraging. In common with the Ministry of Health program, however there are problems with financial motivation among the auxiliaries, with training that is appropriate to the (pastoral) environment, and with the monitoring and follow-up of these unpaid volunteers. Furthermore, the securists may need to be backed up by technically and logistically well-equipped mobile teams to make their interactions in the field more efficient. Eventual folding of this program into the Ministry of Health country-wide program must be contemplated.

Chapter IV

THE ACHIEVEMENT OF PROJECT GOALS: EVALUATION AND RECOMMENDATIONS

This chapter is divided into two sections, one measuring the achievements of the Project to date as against the Project design, and the other containing the formal recommendations of the evaluation team for actions to be taken within the current life of the Project (through December 1982).

19. The Achievement of Project Outputs. The individual range, livestock, and socio-economic studies are well underway. Most of the mapping and subsidiary studies have been completed. In-country as well as long-term US training has been on schedule. The evaluation team has identified four major gaps in the projected outputs: (1) testing of improved inputs packages; (2) formation of the network of "herder aides"; (3) creation of pilot herder associations; and (4) setting up pilot range management experiments. A start has been made with pilot interventions through the veterinary and health auxiliaries so that some experiences have been gained at the herder level.

(1) Testing of Improved Inputs Packages. A package of inputs to increase livestock production was to have been tested in conjunction with range management trials with a group of herders. The results were to be compared to traditional production systems to determine the cost and benefits of a comprehensive government program to increase animal productivity in the pastoral zone. On balance, the evaluation team feels that it may be fortunate that the implementations of these activities were delayed until the socio-economic surveys have been completed to ensure that full account has been taken of traditional livestock production systems in the pastoral zone.

(2) Formation of the Network of "Herder Aides". These aides, chosen from sample herding communities, would have the task of monitoring and reporting veterinary and other health needs, pasture conditions, and marketing problems. It is unclear that any such network is needed before a concrete, broader scale information-gathering and -disseminating program is in place.

(3) Creation of Pilot Herder Associations. The evaluation team considers this to be one of the most important aspects of the NRL Project. Research conducted by the socio-economic team indicates that herders evince a genuine interest in these associations. Caution in establishing these associations seems appropriate, however, so as not to jeopardize long-term, responsible relationships with the herders.

(4) Setting up Pilot Range Management Experiments. It is important that the Project get on with the implementation of the planned interventions and tests. It appears that the delivery of some project inputs has suffered from the usual delays, while others were purposely postponed.

20. Overall Evaluation of the Project Goal and Purposes. There has been a perceptible change in the project goal and purpose. Range management, as a system for regulating the pastoral zone, has been given a lower priority by the RN than originally established. This is because the evidence gathered thus far (and not just by the NRL) strongly indicates that the range is not

under imminent threat of damage as was the assumption at the time the NRL Project was drafted. The data challenge the argument that herders, by increasing numbers, are degrading the range. The Project has conducted a number of stocking rate trials which have suggested that precipitation is the key constraint to the emergence of annual forage types which predominate in the pastoral zone.

The shift has been away from a strategy of livestock control and toward a program of livestock development, still retaining the orientation to a strategy of improving the herders' well-being. Their survival depends on adequate production of milk and sufficient cash from livestock to purchase grain. The shift in the RN to a livestock development strategy addresses these needs, and the main direction of research and action is now toward the production side of the herding systems. The evaluation team agrees with this shift. The purpose of this NRL Project will therefore be met if it can identify the real constraints to the creation of larger and healthier individual herds and recommend tested interventions and organizational structures which could overcome these constraints in a manner consistent with conservation and with socio-economic equity.

21. RECOMMENDATIONS. The evaluation team's recommendations are divided into three separate groupings: technical, program, and project recommendations. Every recommendation includes notes on which actions are to be taken first, by whom, and why.

Technical recommendations form part of Chapter III, are directed at individual technicians or groups on the staff of the NRL, and are thus not repeated here.

The following program recommendations are directed to Project Management and the Senior Consultants, to complete the Project Program. There are six recommended actions that have the highest priority. They are, in descending priority:

- Organize the first herders' associations
- Organize and conduct the collaborative field study of livestock production
- Organize data processing routines
- Carry out agrostological/vegetation mapping of the entire Project Zone
- Organize project cartographic requirements
- Implement "pastoral relays"

Listed as a second tier of priority recommendations are:

- Complete the epidemiological study of herds in the zone
- Extend onto the actual rangelands aspects of the range research program
- Reconsider the decision to drop implementation of water-point construction
- = - Reconsider the decision to drop the reseeded experiments
- Do the study of recurrent costs of government livestock interventions.

Other program interventions are to finish the herbarium; to consider dropping the haying/silage experiments; to cancel any range experiments that are not well-designed to produce scientifically acceptable results; to continue the study of herd structure; to initiate an experiment with an animal health shelter; to continue the search for appropriate strategies for systems of human and veterinary health auxiliaries; to deepen and extend the studies on human nutrition; and to enlarge and intensify the work of the communications component of the Project with the use of cassette recorders.

Project Recommendations: These emerged from observation of the Project as a whole, not of particular elements of it. These recommendations spring from the conviction shared by the evaluation team members that unless there is an immediate improvement of project performance at this level, the Project may well end by having been a series of interesting but disparate efforts that no one has heard much about or cares to follow up in planning further development work in the project zone. These recommendations are thus directed to Project Management but also to RN and U.S.A.I.D. officials, as obligations that they must place on the Project as it enters its final year.

(1) Intensify Collaboration by a) the senior consultants coming together to plan jointly and in detail for the herding systems study, for coordinating their findings on rangeland decision making, for determining the best methods and joint needs for the vegetation mapping and for data processing, and for the crucial work of planning and overseeing the final products; and b) the Project Manager and the Project Director developing a fully collaborative style. This implies full and intense sharing of all information about the Project, especially concerning budget and forward planning for the remainder of the Phase One work plan.

(2) Begin Consolidation of the voluminous studies and interventions now underway or already completed. There are reports done early in the Project that are already lying unused by the current Project staff. Similarly, there are project actions in the health and veterinary fields that must be developed toward sustainability after the Project comes to an end. To begin the work of consolidation, it is suggested that a "synthesis" or "prospectus" report be commissioned which would bring together the policy-oriented findings of the Project to date. Such a report would serve both to help focus the remaining work of the Project and to bring the preliminary results of the Project to the attention of RN and U.S.A.I.D. senior staff in time for incorporation into

(3) Increase the Communication flow between the NRL and its two Sponsors, U.S.A.I.D. and the RN. The evaluation team feels that trip briefings and debriefings are not enough, and that more frequent and intense communications must take place in order to erase some of the current misperceptions held by both U.S.A.I.D. and the RN about the NRL Project. This is vital to ensure the continuation over a long period of time of a development effort which should be based on a permanent research/monitoring capacity to provide for informed action.

Chapter V

NIGER RANGE AND LIVESTOCK PROJECT IMPLICATIONS

22. Introduction. How does the NRL compare with other Sahelian livestock projects? Is its approach likely to lead to the increased standards of living and improved livestock sector performance that are the goals of most current small-producer-oriented livestock projects? This final chapter attempts to set the NRL into such broad perspectives. This chapter starts with a brief survey of how other livestock projects in West Africa are faring, concentrating on the relationship between the level of information achieved before action and the success of that action. This is followed by a second section which outlines arguments for and against livestock projects in Africa. The third and final section of the chapter follows up the implications of the current work by offering some very tentative suggestions of the evaluation team for the planning of Phase Two.

23. Livestock Projects in West Africa. Since most development practitioners will now agree that early-held confidence in the direct transfer of available "advanced technologies" was misplaced, the evaluation team feels that research and action must go hand in hand for successful project results. It points to the Dilly Range Management Project in Mali as one example where failures in herder associations, in surface water development, and in well-drilling can be directly linked to insufficient prior study before direct interventions took place. Other U.S.A.I.D. projects briefly compared by the evaluation team are the Bakel Range and Livestock Development Project in Senegal; the Integrated Rural Development Project in Selibaby, Mauritania; and the Village Livestock Project in Upper Volta. In the first two of these projects, not enough time was spent on research and follow-ups, resulting in major gaps in information about such areas as the economics of animal health, animal losses to diseases, parasites, nutrition, etc. The third had good research but weak coordination and follow-up. The team points to the most outstanding recent forage and environmental study of the Sahel, the Dutch/Malian Sahelian Pastoral Production Study (known as the PPS) as an example of the value which lies in research and/or strong monitoring which should accompany all action projects. Other A.I.D. Projects in the Sahel briefly discussed by the team are the Chad Range and Livestock Herder Training Project (now inactive), the Mali Livestock Sector Project, the SODESP Livestock Production Project in Senegal (whose impacts on herders and cost-effectiveness are in question), and the Integrated Livestock Sector Development Project in The Gambia (just getting underway).

24. Pastoralism in Africa. Despite vast amounts of money invested in livestock projects over the years, evidence does not suggest that the livestock sector in Africa has been significantly upgraded or that herders are now significantly better off because of these efforts. Researchers of pastoralism have suggested that some of the reasons for this may be found in a) declining terms of trade for pastoral products; b) the fact that, for urban markets at least, extensive pastoralists may have higher production costs per unit of output than more intensive producers, thus losing their markets to competitors; and c) the fact that pastoralists, like other rural producers, are losing their youths to the economic and social attractions of urban labor markets.

Despite this, the team feels that some reasons for optimism exist. Aside from the argument that governments are responsible for the welfare of all sectors of their constituencies and thus pastoralists should not be neglected, the point can be made that improved conditions in rural areas might stem the tide of outmigration by improving the standard of living in rural areas. Third, there is the possibility that policy factors (especially pricing policies) play an important role in rural stagnation, and that changing those policies would substantially change the fortunes of rural producers, including pastoralists. The team lists additional reasons to support its argument that the future of pastoralism is by no means decided and not as bleak as some would have us believe. Projects like the NRL will thus continue to be important instruments for rural growth.

25. Implications for the Design of an NRL Phase Two. The conclusion of evaluating Phase I is that the NRL is a well-designed project, that its implementation has been well carried out, and that, with corrections and the launching of some new actions, the Project will attain its purpose. The team thus strongly feels that it is worth proceeding with plans for a second phase. At the same time, however, the team feels that much crucial work of Phase One is still to come, and that it is especially the work of the next six months which will determine what both the RN and U.S.A.I.D. will be prepared to discuss as elements of Phase Two activities. Suggestions for timing and personnel needs in Phase Two are made in this context.

26. Issues for Phase Two Planning. The evaluation team recommends that the following elements be considered in the planning of Phase Two:

- Support of RN veterinary and livestock service activities, pointing out again that the perspective has changed from one of concerns over desertification to one of increasing long-term herd productivity.
- Undertaking pastoral research on a permanent basis in recognition of the fact that there exists a long-term need for research in this major Nigerien system of rural production.
- Continuing the delivery of services to pastoralists, an issue about the details of which the evaluation team itself is divided. One side is of the opinion that national and institutional infrastructures are ultimately the best vehicles for bringing about improvements in herders' lives, while the other side argues that structures must be created among the livestock producers themselves which reach below the chiefs and create associations for herders.

The team offers numerous specific recommendations for each of these issues.

The evaluation team's report closes with a tentative timetable for Phase Two planning and suggestions for the composition of a planning team.

27. Technology Transfer.

I. What constraint did this project attempt to relieve?

Low productivity and a tenuous income security among herders in Niger's pastoral zone, a fragile environment.

II. What technology did the project promote to relieve this constraint?

The project carried out systematic socio-economic, range management and annual production research intended to effectuate a positive change without disturbing the fragile environment. The proposed technology which has come out of this research will be implemented in the follow-on Integrated Livestock Production Project. This technology consists of productivity increasing practices, supplies and equipment.

III. What technology did the project attempt to replace?

The project did not attempt to replace any existing technology but to improve and augment it with private and GON resources on a sustainable basis. The project is trying to integrate modern practices with traditional practices on the basis of extensive and thorough research and the positive self-interest of the concerned population.

IV. Why did the project planners believe that intended beneficiaries would adopt the proposed technology?

The project's proposed technology will emphasize the herders' desire for a strengthened economic position and increased access to productive resources. This access will be based on the herders' growing ability and willingness to pay, as expressed through their herder association.

V. What characteristics did the intended beneficiaries exhibit that had relevance to their adopting the proposed technology?

The herders demonstrated a desire to augment the size of their herds following the drought and to escape from debt which was also a product of the drought. The herders have also consistently attempted to increase productivity, i.e. fatter animals, increased milk production, etc., in spite of the limited means at their disposal.

VI. What adoption rate has this project achieved in transferring the proposed technology?

As this is a research project, no attempt has been made to develop an adoption rate until all relevant factors are known. For the moment, the rate of adoption is less important to project planners than the development of a successful and sustainable technology of adoption which will proceed at its own pace, based on the perceived self-interest of the herders themselves. Preliminary indications show an extremely favorable adoption rate of the pilot herders Associations by the herders.

- VII. Has the project set forces into motion that will induce further exploration of the constraint and improvements to the technical package proposed to overcome it?

Yes, although most of these actions are expected to occur in the follow-on project. Among actions which are currently underway are the formation of herder associations at the enthusiastic demand of the herders themselves. There will be ten established by the end of the project, a rate not likely to be attained only a short time ago. These pilot herder associations will form the basis for a much larger number of associations to be created under the follow-on project.

- VIII. Do private input suppliers have an incentive to examine the constraint addressed by the project and to come up with solutions?

The project has researched this question very carefully. The project will attempt to utilize the herders' growing access to income and organization in order to make further resources available from the private sector, particularly, human and animal feed and feed supplements, medicine and veterinary supplies, and consumer goods and services.

- IX. What delivery system did the project use to transfer technology to the intended beneficiaries?

Under the present project, the GON and the project itself were the transfer medium. Under the new project, sustainable market forces, in particular, the private herders, traders, etc. will be the engine of technological transfer. Pilot herder associations were developed to test out this approach, which has shown itself to be effective.

- X. What training techniques did the project use to develop the delivery system?

The primary training mechanism involved the formation of the pilot herders' associations. As a result, the herders have demanded and will be receiving under the successor project vastly increased literacy training. This increased literacy will allow the herders to take advantage of more modern techniques of increasing productivity. In addition, the project has provided intensive training of veterinary and human health assistants who come from the ranks of the herders themselves. Finally, the project has trained personnel from the Livestock Service to be more responsive to herder concerns.

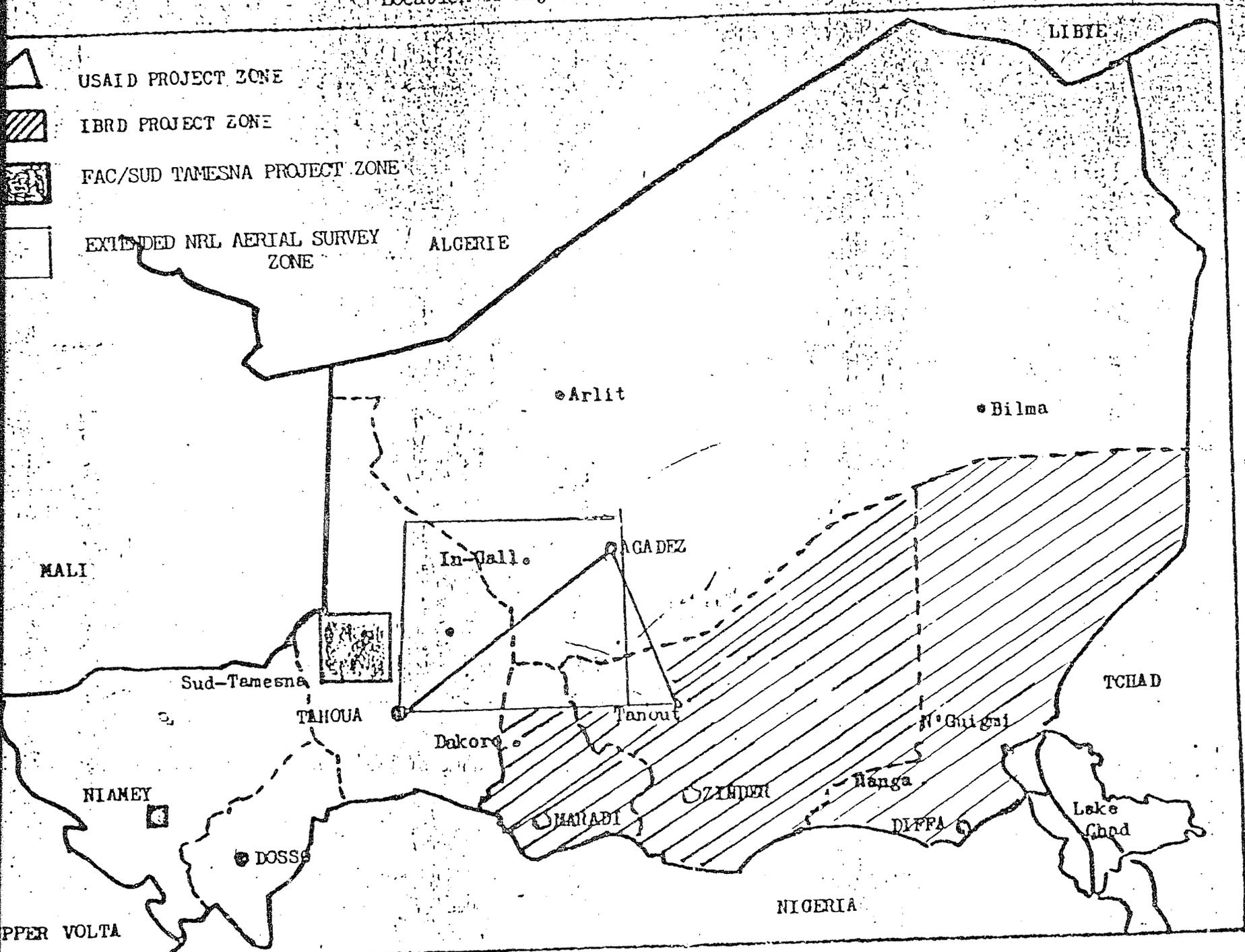
- XI. What effect did the transferred technology have upon those impacted by it?

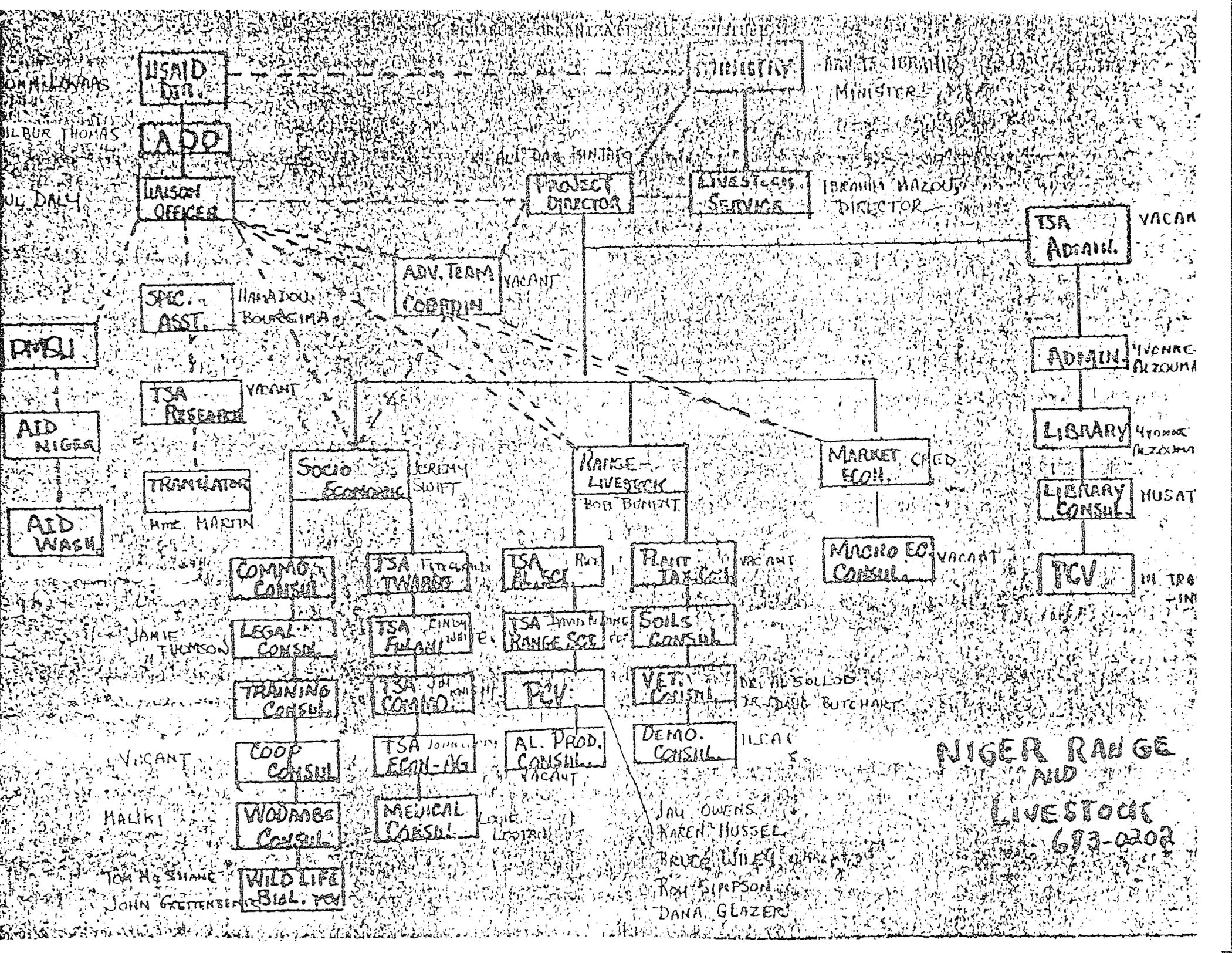
The primary effects have been:

- 1) increased demand by the herders for the creation of more herder associations, opportunities for effective interaction with the private sector, and literacy training, and
- 2) reduced dependency on the central government for goods and services which the herders may be able to provide for themselves.

ANNEX A
 REPUBLIC OF NIGER
 Location of Major Pastoral Zone Projects

-  USAID PROJECT ZONE
-  IBRD PROJECT ZONE
-  FAC/SUD TAMESNA PROJECT ZONE
-  EXTENDED NRL AERIAL SURVEY ZONE





ANNEX

Members of the Evaluation Mission

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