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EVALUATION REPORT

UPPER VOLTA VILLAGE LIVESTOCK PROJECT, NO. 686-0203

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A. ACTION RECOMMENDATIONS

1. The following indicators are necessary to demonstrate successful completion of Phase I:

a. The existence in usable form of reliable and bench mark data on agricultural, livestock, range and soil conditions, and human resources potential to be used by the Central Livestock Service and the three ORDs (Kaya, Fada and Koupela) in the design and implementation of specific activities.

b. The existence of a trained cadre of personnel at project level capable of designing and implementing required activities in the Livestock sector.

c. The successful development and/or established parameters for the development of an improved livestock program by project personnel.

d. The existence of other well designed projects by the Central Livestock Service.

e. The emergence of a national policy on range and livestock development and soil conservation.

In their absence, it is recommended that the Village Livestock Project be terminated at the end of the current Phase I of the project.

2. In view of the preliminary work which has been accomplished, both technically and with herders and villagers in two of the project zones (Tafogo and Tienkodogo-Gnangedin), it is recommended that USAID continue support of the Central Livestock Service village level activities in animal health, livestock development and range management. As part of the next year's activities, the Central Livestock Service should be supported in the development and implementation, with the herders committees of the zones of Tafogo and Gnanguedin, of workable range management plans. It is recommended that this support continue until October 1982. An estimated yearly cost of USAID support is provided in Annex V.

3. As part of the coming year's activities, the Central Livestock Service can be expected to monitor developments in the two zones in order to assess:

a. The realistic outreach potential of village-level Central Livestock Service personnel.

b. The need for the Central Livestock Service and of the ORDs in personnel training for establishing an effective livestock extension service in Upper Volta.

c. The logistical and general operational requirements for organizing village livestock development in the ORDs.

B. PROJECT BACKGROUND

The Village Livestock Project (VLP) was planned in early 1976 with the goal to "improve the quality of life of the people in the affected area through the management of range resources and other feed supplies, and through improved animal health and selection" (PRO-AG, May 1976). Achievement of this goal was expected to increase net livestock productivity, income to producers, government revenues and export earnings. The purpose of the project (or the means through which to accomplish the goals) was to "develop the capability of the Central Livestock Service and the three ORDs to plan and to implement village livestock management systems which maintain the integrity of the environment."

The first of three 'phases' was designed to collect baseline data, and identify and test the most appropriate interventions needed to design a Phase II. These interventions could then be implemented and evaluated for a Phase III (suggested in the Project Paper), the final stage in an extension to widen the effects of time-tested interventions and ultimately reach the above stated "goal."

Following signing of the PRO-AG in May 1976, it took until 22 June 1977 to select, approve and sign a contract to provide technical assistance for the project. The Consortium for International Development (CID) contracted to provide the technical assistance team which completed approval procedures and was located in Ouagadougou on 31 October 1977. The team included a Team Leader/Livestock Advisor, a Range Management Advisor and a Sociology Advisor. During the year and a half between PRO-AG signing and CID team arrival, the GOUV-VLP Director and USAID-VLP Co-Director/Project Manager were appointed and initiated preparatory actions. Many of the commodities were ordered, thus facilitating initiation of team activities upon arrival. While some of the materials ordered were ultimately judged non-appropriate, the overall effect of the early unilateral order by the USAID/Project Manager was a positive factor for speeding project implementation. However, other more relevant materials had to be subsequently ordered by the GOUV and CID technical teams to supplement initial purchases.

Two participants were selected for long-term training in range management and animal production in the U.S. and one received short-term training in

Agricultural Statistics in the Ivory Coast (the latter was subsequently assigned to another part of the Central Livestock Service instead of returning as a counterpart for the sociologist); twelve encadreurs were trained in-country and assigned to the six selected project sites; PCVs were assigned to the project and actions were initiated to form the Village Associations.

Apparently from early in the project there were interpersonal conflicts among the USAID, GOUV/VLP and CID/VLP personnel. These led to misunderstandings and/or were complicated by lack of an early general agreement on project activities and emphasis. While a change of the GOUV/VLP Director and the USAID/Project Manager partially alleviated the problem, there has never been complete agreement among the parties as to the main emphasis of the project.

The Project Paper clearly emphasized that Phase I would be an experimental, testing and baseline data collecting project. This apparently was not completely understood or accepted by the GOUV/VLP personnel. Similarly, the Project Agreement pointed out that the purpose of Phase I will be to "determine improved livestock capabilities in specific villages in three ORDs (Kaya, Fada and Koupela) and to demonstrate possible methods of improving livestock techniques which in turn will increase income..." It does not appear that the contract team completely understood or conceived of its scope of work in these terms for the past three years.

Changes of USAID, GOUV and CID personnel over the life of the project and changes in support for the original concept of the project did not facilitate coordination between the three parties involved. The contract team was selected and contracted on the original research emphasis concept of the Project Paper. Upon arrival at post and development of a work plan, the differences in understanding began to surface. In early 1978, the GOUV/VLP Director and the Director of the Central Livestock Service expressed disapproval of the experimental emphasis of the project and asked for more action projects. While some test actions were included in the work plan, the GOUV and eventually the USAID Mission personnel did not consider the CID team projects to be sufficiently action-oriented as called for in the Project Agreement. The resolution of these problems and development of good lines of communication were further complicated by lack of assignment of GOUV counterparts for the expatriate technicians as well as unmet expectations on the part of the contract team for clerical and translation support from the USAID Mission; shortage of funds and poor interpersonal relations within the contract team itself further exacerbated the situation.

The CID team was faced with the formidable task of not designing "six discrete projects in six discrete zones, but rather to test various approaches in six representative areas" with a view to "replicate the better approaches in other zones during Phase II" (PRO-AG, p 7). The team was unable to meet the first few targets of its work plan schedule and therefore several revisions to that plan became necessary. Near the end of the second year of the project, the most significant activities had been in social, range resource and animal production baseline data, with a minimum of action-oriented projects having been staffed or completed. The classification of many of these projects, which are discussed below, as "action" or "experimental" depends on the perspective of the person or organization concerned:

- The GOUV had an urgent desire to effect as many immediate physical improvements as possible for the herders groups. Such projects included the digging of wells, the construction of vaccination parks and the start of village poultry activities.

- The USAID Mission, while wanting to cooperate with the GOUV to attain these short-term goals, has had to consider the long-term plan of the Project Paper by technical experts, as well as the advice of a professional contract team.

- The technical contract team, which had been contracted to search for the most appropriate long-term solutions to the problems, felt professionally bound to know as much as possible about the contexts before moving to identifying and testing solutions. This process eventually used up the full three-year period and no specific interventions were identified, implemented or evaluated.

The USAID Mission organized a meeting with CID/VLP and GOUV/VLP personnel in September 1979, the third year of the project, to establish through a "Memorandum of Understanding," that there should be a reduction of research efforts, an increase in action projects and ultimately the development of a plan for Phase II. Additional agreements of authority and logistical support responsibilities were included in this "memorandum."

At this date, October 1980, the collection of baseline data has been completed, Village Livestockmen's groups established, some personnel trained, water wells dug, vaccination parks constructed, a vaccination and déparasitage program established, vaccine cold storage provided at two sites, range resource survey completed on two sites, and two range management demonstration plots established. The number of sites of range resource and some other activities

were reduced from those planned due to the various delays mentioned above and because the original time frame could not be met. The specific actions proposed in Animal Production and Range Management are discussed in detail below as to appropriateness and as they relate to the "purpose" of the project. A final report of the project including a plan for Phase II is in preparation at the University of Arizona and is expected at the end of December 1980. Preliminary drafts of this plan do not provide sufficiently detailed information regarding the implementation of action programs in either specific localities or in broader zones of village livestock activity. Additionally, a number of planned activities appear to focus primarily on information-gathering activities rather than on an operational framework of action.¹

C. EXTERNAL FACTORS

Upper Voltan economic difficulties have magnified in parallel with inflation worldwide; this is in part due to the energy crisis. Budgeting difficulties have resulted in further restrictions of funds allocated to improvement of livestock services and inputs. The budget share allocated to the Central Livestock Service has fallen from 1.5 percent in 1961 to 0.88 percent in 1980. Leaving aside the question of whether the livestock sector is receiving a fair share of the budget in accordance with its economic impact (40 percent of exports), such restrictions reduce services and inputs, particularly in the provinces and villages where project interventions are focused, to an insignificant level.

Available budget allocations are increasingly devoted to personnel salaries and support (90 percent), leaving a token amount for infrastructure development and operating costs. Moreover, without substantial budget relief, the ability of the Livestock Service to contribute a reasonable share of aid assistance costs is minimal. The Service is nearly incapable of assuming the continuing

¹As an example of the lack of operational orientation for this report, it calls for the "encouragement" of "appropriate land uses in village sites (3)" without suggesting either which land uses or how such encouragement is to be effected. Similarly, it calls for the development of a "flexible range management system for each site" in which work was performed in the previous 3 years. No indication of the uses of baseline data to elaborate specific proposals of range management system could be found in the draft report.

operating costs arising from completed aid projects, and can only do so on a selective basis. In absolute terms, unadjusted for inflation, the annual budget of the Livestock Service increased by 60 percent from 116.6 million in 1961 to 186.9 million CFAF in 1976 and 263 million CFAF in 1980 (a 40 percent increase or a 10 percent yearly increase). Consequently, the Service continues to be understaffed and has become heavily dependent on foreign aid to finance its activities. The most frequently heard comment from project field employees, when asked what the major problems were in carrying out project objectives, was the need for funds to pay per diem costs for employees working at the various sites so they could eat and maintain themselves.

D. INPUTS

1. Livestock Development

a. USAID Assistance

Project Manager - 4 years. There have been three different Project Managers which has made coordination difficult. The present one is well trained and experienced technically and should help facilitate future activities.

Technical Assistance. Livestock Advisor - 3 years: This responsibility was a joint assignment with the Chief of Party duties. He was assisted to varying degrees by the Sociologist Advisor - 3 years, the Range Management Advisor - 3 years; TDY Marketing Specialist; TDY Veterinarian; and four PCVs for one or two years each. The Livestock Advisor was apparently well trained in animal nutrition and more specifically in poultry production. He provided good guidance in determining economic feasibility of several action projects which provided very useful data for future project planning. Much of his time was occupied by Chief of Party duties, therefore a great deal of the animal production baseline data were collected by others mentioned above or from previous studies.

Training. Long-term training (BS) in the U.S. was provided for a GOUV participant in livestock production; 12 encadreurs and the four PCVs received short course training in animal health prior to assignment to the six sites and later received on-the-job training and instruction from the CID Livestock Advisor; and livestockmen received instruction on the importance of animal health care, livestock nutrition and poultry management. The long-term participant has completed his BS and has been accepted in a Master of Science program; therefore, his input into the project will be delayed for approximately another year.

b. Commodities. Provision of project vehicles, maintenance and fuel has been an essential need for the entire project. The lack of timely maintenance and inadequate provision of fuel caused delays in project activities, in livestock development aspects in particular. No record could be located of the exact materials purchased for the Nutrition Laboratory, the Veterinary Laboratory, or the Livestock Management Package; however, verbal reports indicate that the Nutrition and Veterinary Laboratory equipment was given to the Livestock Service Animal Disease Diagnostic Lab when it was jointly decided by GOUV/VLP, CID/VLP and USAID personnel that this activity would not be conducted by the VLP. The vaccination equipment, salt and minerals and some other livestock management equipment has been distributed to the encadreurs for their use in the vaccination program and demonstrations. Much of this material was still in the project warehouse at the time of the evaluation and it appeared unlikely that it would be used.

An inventory of what has been purchased, turned over to GOUV/VLP, present stock in the warehouse, and that distributed to the encadreurs for project use, should be located or prepared with best present information for subsequent control.

c. GOUV Personnel

Project Director - 4 years: The original Director was changed after one year and was sent off for long-term training. Personality problems between the first Director and the USAID Project Manager were eventually resolved with the replacement of both individuals.

A Rural Sociologist counterpart was sent to the Ivory Coast for training in Agricultural Statistics, but was placed upon his return in another Livestock Service project. The sociology, range management and animal production counterparts were not provided as agreed. However, five University trainees and recent graduates have now been provided. Their input into improving the technical expertise and the central support role of the Service is questionable. The general lack of high level technical counterparts has had a significant negative effect on project progress, intra-party communications and on the potential of leaving a trained cadre of technicians to undertake livestock development.

Twelve encadreurs and three veterinarian nurses were provided at the regional and village levels.

A National Executive Committee was formed to help coordinate efforts of the project, but its success is limited, due to lack of participation, notably from the ORDs.

The Central Veterinary Laboratory and personnel were made available for analyses and training.

Land and office space was provided for project sites and offices. However, the office space provided in Ouagadougou was minimal and often necessitated the use of the expatriates' homes as the project office.

Trainees and participants were provided for the programmed training.

d. Peace Corps. Four PCVs were provided to work with the encadreurs at the village level. They have been an effective part of the project, especially in the animal health program and the traditional water well program.

2. Range Management

a. Personnel

The Range Management Specialist came on-stream with other contract specialists in October 1977, and remained with the project throughout Phase I, departing post in August 1980. It is understood he is still assisting the CID team to complete Phase II design commitments. He brought to the project considerable experience in African range work including the Markoy Ranch in northern Upper Volta. It was a disadvantage to the evaluation team that he was not available for detailed discussion of his accomplishments and problems in carrying out his duties in range management and forestry. Judging by his reports and baseline data, he displayed a wide and detailed knowledge of both range and forest vegetation in the project areas. His work in collaboration with the social scientist in organizing livestock committees and range management subcommittees is sound and indicates a real appreciation of the dictum that range management implementations, to be successful, require the understanding, collaboration, active participation, and direction by the users of the rangelands themselves.

Personnel needs in the Project Paper called for a 2-3 month TDY input by a soil scientist. As far as could be determined, no such assistance was provided. This situation apparently forced the range management specialist to rely on inappropriate, wide-scale 1/250,000 (1 cm = 2500 meters) ORSTOM publication, one nearly valueless for use in correlating the baseline vegetative sites with soil properties.

At the outset of the project (1977), the Livestock Service designated a range management counterpart was promptly sent to the U.S. for professional training and has returned (August 1980) with a BS degree in range management. He worked with the CID team during summer vacations, but has not yet been re-employed by the Livestock Service due to budget restrictions. Range management counterpart input has therefore been limited during the three years of Phase I.

The GOUV Livestock Service should provide for participant training of additional range management professionals in order to extend such work to other areas with assurance they will be employed upon return from training.

An orientation work training conference for village and ORD level project personnel was held by the CID-Livestock Service team. This has been supplemented by on-site individual training. This was a commendable effort, but if continuing improvements are to be made in the quality and quantity of work outputs, more frequent refresher courses and seminars should be held.

b. Commodities. The range management package of commodities provided was on a moderate scale and proved to be useful. There was some suggestion that too much fencing material was ordered but it was properly used for fencing permanent observation-demonstration research plots. Future actions will require additional fencing material for enclosures but generally on a smaller scale. Wire cages for movable demonstration plots, grass clippers, scales and sharp-shooter shovels are also likely to be needed. A limited amount should be designated for purchase of adapted grass seeds, origin African, for range and conservation trials. Standard seeds such as alfalfa, orchardgrass, and ryegrass apparently ordered for Phase I will have no discernible use. Cooperative efforts with the GOUV Forest Service are indicated to select and supply adapted forage and wood producing tree species. For U.S. technicians stationed at or near the ORDs and field sites, light pickups would be more suitable and more economical than the larger 4-wheel drive Land Rover type vehicles used in Phase I. Although a 4-wheel drive is occasionally needed during the rainy season, oversize mud tires and judicious travel obviate most problems. With wood benches and side boards, pickups can also be used to transport key villagers to demonstration and grazing area sites for extension purposes.

E. OUTPUTS

1. Livestock Development

Animal production baseline data were collected in detail at two sites and supplementary data were obtained for all areas from other project reports and from other available empirical data sources for the regions involved.

Six livestockmen's committees were formed in cooperation with the project's "Sociology" and "Range Management" sections. The meetings attended by the evaluation team appear to be lively and to demonstrate the interest and active participation of members in the project's interventions in livestock development.

The development of a Nutritional Analysis Laboratory was not accomplished, having been eliminated from the project by mutual agreement of CID/VLP, GOUV/VLP and USAID personnel. This lab was not specifically need to carry on the project and there had been no provisions for either expatriate expertise or GOUV personnel to administer this operation. Although no records were located on the equipment purchased, it is understood that such equipment was transferred to the Animal Disease Diagnostic Lab.

The component of the project dealing with livestock feeding, forage production and storage at the village level was dropped due to its inappropriateness. This was done after collection of feed prices and availability data, and after fruitless efforts to interest villagers in forage production and storage. Most of the available crop residue feeds are being fed to work oxen, small ruminants, horses and rarely to young calves. Labor constraint is a significant obstacle for forage cultivation or storage.

The development of water resources was primarily a responsibility of the Range Management Advisor with the help of the PCVs, but due to the nutritional improvements which an adequate and well distributed water source can provide, this intervention is also mentioned in this section. A total of fourteen wells have been completed or are near completion. Water was one of the main needs expressed for future project interventions, both in the survey conducted and during meetings of the Village Livestockmen's Associations.

Actions in animal health, in cooperation with the Livestock Service Animal Health Section, were established at each site and have been acclaimed by herders surveyed and by the Village Livestockmen's Associations as the most important efforts of the project. Herders in the meetings attended by the evaluation team reported reduced death loss and increased production of milk for the family, and of animals for sale.

The construction of vaccination parks has been in support of the animal health program; however, the cost effectiveness of this component is questionable since the improvement of traditional corrals would be considerably less costly. Four parks were constructed and two traditional parks were repaired.

Salt-mineral blocks have been sold through a VLP rotation fund with increasing sales over the past year; however, due to the high cost and questionable cost effectiveness of this component, it is believed by some technicians that the salt is actually being used as table salt rather than being fed to livestock.

Selection of livestock based on Individual Identification and Records was not initiated and is not considered a viable action for the future.

Poultry breeding and feeding projects were organized at three sites; however, due to high cost of facilities, of feed distribution, and high death loss, this project component has not been cost effective. There is some interest in a poultry program; it appears that any future intervention may need to be limited to a more traditional system with possible introduction of improved breeding stock and improved health care.

Trained GOUV/VLP Personnel - the project director has received short-term administrative training in the U.S. and is well experienced after three years with the project. The 11 remaining encadreurs (one was killed in a work related accident) have received minimal skills upgrading training but have reasonably good field experience.

A plan of action for future interventions was developed; however, it seems to include too many options, with as much or more research as in Phase I, and fails to use the lessons learned in that first phase. A more detailed action plan covering fewer potential interventions would have been more useful.

2. Range Management

A baseline resource inventory for range management has been completed for the Tafogo site. It comprises vegetative sites, vegetative occurrence, production by weight, erosion classes, and estimated stocking capacities. The Gnanguedin baseline data including the Bittou East area is undergoing final processing by the CID team. Baseline data for the East ORD was delayed when inter-institutional difficulties in collaborating and coordinating project activities occurred.

Two grazing demonstration enclosures of 50-plus hectares have been located and fenced at Tafogo and Gnanguedin sites and are ready for grazing trials. Small (less than one hectare) demonstrations enclosures have been

installed at the Gnanguedin, Koukoundi and Tafogo sites. Remarkable plant successional changes are taking place in the enclosures indicating rapid responses to growing season rests and indicate that erosion can be controlled and grass production increased relatively rapidly.

In sampling, 72 plots, one to two meters square, have been permanently installed and marked to observe, measure and quantify vegetational changes over the years; 362 plots were cut and dried for forage production data.

Range water developments have been limited to one unfinished well at Koukoundi useful for the vaccination park and future range management. A number of village wells have been constructed, for human and livestock dual use.

A grazing reserve in the Eastern ORD is not yet installed and the status of the vegetative survey could not be determined from available data at this date.

A pilot controlled grazing area in one selected village, either Kaya or Koupela ORD, is not underway but a start is judged feasible, even though the range committees do not yet have a clear understanding of how to implement different range management alternatives.

Controlled access to pastures and to water await installation of grazing schemes.

Burning trials have been delayed by a team decision. It is not at all certain that burning is a valid management tool at the Tafogo site, at least on uplands in poor condition. Moderate to heavy grazing immediately after growing season rest may be an alternative. Burning as a management tool is yet to be specified in the Fada and Kaya ORDs. The question of feasibility of fire breaks is yet to be solved. There are suggestions to pay villagers to hand clear fire breaks near villages where planned fires most often occur, and there is the option to use heavy equipment for that purpose as well.

F. RELATION OF OUTPUTS TO PURPOSE AND GOALS

The purpose of the project: "to develop the capability of the Central Livestock Service and the three ORDs to plan and to implement village livestock management systems which maintain the integrity of the environment" (PRO-AG, 1976), was only partially accomplished during this Phase I of the project.

However, this purpose remains still valid and is attainable in the near future under certain conditions.

While the Project Director, some intermediate technical personnel and the encadreurs were relatively well trained in project activities, some of the GOUV counterparts, required to closely monitor and develop each specialized activity, have not been adequately trained. These deficiencies in the Central Livestock Service can be corrected, but significantly better cooperation and participation with the ORDs needs to be established as a prerequisite.

This evaluation finds that baseline data of sufficient quality and scope, pertinent to range management/forestry has been developed to the point that an environmentally sound range-livestock management system can be planned. A start has been made towards implementing such plans, principally in the installation of exclosures and enclosures on rangelands, the organization of village livestock committees in three ORDs and range management subcommittees in two of three ORDs. As of September 1980, the CID team had developed tentative plans to start on-site range management pilot operations in two sites in close coordination with, and direction of, the range management subcommittees. The exclosures and enclosures installed are intact and will be highly valuable as demonstration tools for implementation processes and for continuing observations of ecological stages of plan succession under grazing management. In this latter connection, the closures are already yielding solid information that vegetative response to growing season rests from grazing is an environmentally sound approach to range-livestock management systems in the project areas. Normally, growing season rests should be followed immediately by moderate to heavy grazing to prevent retention of large amounts of fire-prone litter. Many ecological concepts can not be extrapolated from the enclosures installed by the project and these can be useful for controlling erosion and assisting in grazing management designs. The primary verifiable indicator of a successful Phase I is "the development or established parameters for the development of an improved livestock program by project personnel" (PRO-AG, p 8, II.3); i.e., the design of the components of an acceptable Phase II of the project. Therefore, a definitive evaluation of the range management-forestry activities must rely on the adequacy of the design which is available at this date in a preliminary form.

The technical base, covering vegetative occurrences by sites and relative abundance and availability plus estimations of current carrying capacity, has been largely completed for sties in two ORDs. These data coupled with erosion classification, animal and water inventories, social interactions and population

data are not available. The factual, technical and environmentally sound foundations necessary for range management programs now exist. However, the preliminary Phase II design data currently available do not provide specific actions to be taken in range management.

A critical assumption of the project has been that "a suitable technical package can be developed to increase net productivity of livestock and livestock products without damaging the environment" (Project Paper); or "... that livestock production can be increased without ecological degradation" (PRO-AG, p 6). In respect to range management, there is a direct correlation between animal production and the condition (ecological health) of the rangelands.

Poor condition rangelands, in terms of vegetative quality and quantity and susceptibility to erosion, result in low livestock production and concomitant higher death losses, lower weight gains, reproduction, and offtake. Any ecologically sound range management intervention will directly improve environmental conditions. Such interventions will also mitigate crippling economical losses associated with high death losses, low reproduction and offtakes.

The toll on the environment from supporting animals destined to die or produce no economic gains, adversely tip the ecological balance. Reducing economic losses by means of rational range management leaves a margin of grazing resources available to better support productive animals. Moreover, this margin will result relatively rapidly in even greater improvements in the grazing resources.

Sometime in the future, normal herd buildups on managed ranges may present a problem in animal numbers. At the same time, there will be more animals in a saleable condition with always increasing market prices to tempt the producer to sell. Only then can the role of the project be to demonstrate and promote orderly offtakes to assure maintenance or improvement of the rangeland environments.

G. FINDINGS AND RECOMMENDATIONS

The primary indication for a successful Phase I for the Village Livestock Project has not been accomplished: activities in Phase I have not tested and identified the most appropriate interventions leading to the development of an improved, replicable livestock program for Upper Volta's different regions.

The salient achievements of Phase I have been:

- a. generating baseline data against which the effects of future interventions might be verified;
- b. establishing a number of regional livestock committees, reflecting the traditional authority structure of these zones and maintaining their interest in the project;
- c. selecting sites and installing exclosures useful for demonstrating to herders the positive impact of range management; and,
- d. extending the outreach of the animal health service through a more extensive vaccination of herds by the project "encadreurs."

It is questionable whether the collection of baseline data should have occupied such a significant portion of the project personnel's time or if the three-year period could not have been more usefully spent (such as collecting data in six specific localities, and in more direct relation to specific testable interventions for village livestock development, as mentioned in the Project Agreement). The regional livestock committees have met on an ad hoc basis (on the occasion of visits by project personnel) rather than according to a systematic agenda for the consideration of livestock related issues. The results of a survey of committee members and herders, completed in the course of this evaluation, indicates the extent to which the committees are perceived to be effective mechanisms for decision-making and the desirability of establishing livestock herder committees within villages. These associations should be very useful in future project activities and every effort should be made to maintain them as viable decision-making and management institutions.

The "encadreurs" have not been sufficiently trained to provide effective organizational support to the committees, nor are all of them able to overcome linguistic barriers to communication with a majority of the herders. Their role is primarily perceived by herders to be that of "vaccinators," although they were expected to be equally active in other areas of livestock extension.

It would appear that a more systematic approach to the training of "encadreurs" in skills attendant to their role as extension agents could have been initiated during Phase I. Presently, the encadreurs are able to vaccinate cattle, administer data gathering surveys and act as conveners of village committee meetings. It would seem that there are more areas in which extension agents could assist in the implementation of village livestock development. It is recommended that such on-the-job training be undertaken with the aid of an extension support specialist and in connection with the development and

implementation of range management plans. Their training could cover:

- a. basic diagnostic procedures for animal health and elementary forms of treatment (under supervision of infirmier-vétérinaire);
- b. the use and maintenance of veterinarian equipment;
- c. communication skills and group dynamics; and,
- d. procedures for holding meetings and the keeping of village herders or zone committee records.

Additional findings and recommendations are that:

1. The research efforts of the CID team have provided useful data for future GOUV livestock and land use development. During this short evaluation period, expressions of interest in using these data were received from the CILSS, the FAO Regional Planning Assistance Team and the Centre Régional de Télédétection de Ouagadougou. Therefore, valuable research results, site maps and baseline data should be permanently filed and maintained for future retrieval and use. As a result of this preliminary work, it will be possible to prepare range management plans for at least two of the project sites. Unfortunately, preliminary Phase II designs for range management lack sufficient specificity for adequate immediate implementation. The final design document should therefore be examined for its adequacy before its proposals can be adopted by the Central Livestock Service.

2. The enclosures established in Phase I provide a valid tool in which to construct a plant successional sequence under management manipulations. Such sequences have utmost value in predicting production potentials, treatment needs, and erosion control effectiveness and thus are a desirable research activity extending into any action programs. The enclosures should be used for demonstration and grazing trials immediately.

3. Continue traditional water well development in conjunction and in support of range management demonstrations through the existing Livestockmen's Association. Support surface water point development in the native range areas of undergrazing in cooperation with other projects (example: mixed farming project which proposes building water retaining dams in the Tafogo area) and in support of the pasture management plan to be developed from data collected in Phase I.

4. Continue support of the animal health program by providing vaccines, medical supplies, encadreur assistance, transportation, refrigeration and other logistic support to help the existing Health Service function more

efficiently, facilitate animal disease diagnostic work on a regular basis and support special surveys when indicated.

5. Help repair and modify the traditional vaccination parks by designing an attached working chute and paying for cutting of traditional poles and posts for their repair and modifications.

6. Continue the enclosure range management demonstration and include a forestry technician (PCV) to initiate tree planting in these sites. Support the existing tree nursery in the Tafogo area and consider similar action at other sites to provide trees for planting in conjunction with proposed temporary range management reserves.

7. Consider the feasibility of a village grain credit and storage project through the Livestockmen's Association to allow herders to buy grain on credit at harvest (cheaper grain prices) and to hold their livestock until later in the dry season when livestock prices are higher.

8. Continue a strict monitoring of range, livestock and socio-economic conditions associated with each intervention so as to maximize management efficiency and evaluate the effects of each intervention.

The CID team and GOUV recommendation to strengthen the ORD support is well taken. Part of both the technical assistance team and the GOUV/VLP technicians could be located at the regional level. These regional advisors would need to be more generally trained to serve as backup and support liaison, for the range, animal and extension/social work, between the region and the national specialists. Due to the remote locations and less than optimal living conditions, young technicians with BS or MS training, minimal experience and sufficient language training would be indicated. PCVs or graduate students might also be effectively used at the regional level to assist the technical advisors. A team leader/socio-economist, an extension range specialist and an extension animal production specialist of a higher level of training (MD or PhD) and significant experience in developing countries could be located in Ouagadougou to backstop and coordinate the field agents.

9. Request TDY soils scientist (one to two months each year) to assist range management personnel to correlate soils with range sites to better define production potentials, feasible land uses, erosion hazards and management needs.

The country team should develop the skills and procedures outlined in Annex VII to facilitate rapid surveying of range sites and conditions as bases for management plan development. Range sites should be described in terms of

vegetative composition, plant successional stages, stocking rates under different conditions of the vegetation, erosion hazards and suitability for tree planting if appropriate, and special treatment needs if any. The usability of range site descriptions can be extended to other areas by categorizing changes in vegetative composition and productive capacities for different rainfall zones.

The grazing reserve scheme at Gnanguedin can be launched after areas suitable for cropland use are determined from the range site surveys.

10. Work closely with the cropland extension services in the ORDs to promote and assist in efforts to increase crop production in the villages as the most practical means to increase crop residues available for livestock feed.

11. In any future activity of village livestock development:

a. all parties (local government, concerned USAID/Mission personnel and technical assistance team) must completely understand the project and their respective responsibilities and obligations before any agreements are signed;

b. technical contracts should include a clause that the project will be subject to possible revision at specified periods and that the team should be flexible to possible changes within their respective technical components;

c. provision of higher level technical counterparts are essential to project implementation. If no such expertise is available, participant training must be planned for, with sufficient lead time.

d. scopes of work and time-tables should be more realistic in order to minimize subsequent disappointments or misunderstandings by all parties concerned.

ANNEX I. EVALUATION METHODOLOGY

Data relevant to assessing progress under Phase I of this Project, and the applicability of the preliminary Phase II recommendations proposed by the contractor, were based on the following:

1. Interviews with USAID/Project Manager on terms of reference for the evaluation of Phase I and recommendations for Phase II.
2. Review of project documents and correspondence.
3. Interviews with other USAID staff involved with the project, a CID team member, GOUV/VLP staff, Central Livestock Service personnel, and other bilateral and multilateral donor livestock/range personnel.
4. Site visits at Koukoundi and Tafogo in the Kaya ORD, and at Tienkodogo and Gnanguedin in the Koupela ORD.
5. Meetings and interviews with members of the Livestock Owners Associations at Koukoundi, Tafogo, Tienkodogo, Gnanguedin and in a number of smaller villages.
6. Interviews with encadreurs at each of these sites.
7. Inspection of project interventions including traditional water wells, vaccination parks, poultry breeding centers, housing for encadreurs and for material and refrigerated vaccine storage, and range management demonstration enclosures in Kaya and Koupela ORDs.*
8. A survey of beneficiaries in the Tafogo and Gnanguedin sites was conducted 10-20 October. The sample selected included both livestock committee members and herders from the major cultural groups in the project zones. The survey was intended to elicit the beneficiaries' perceptions of the project's accomplishments and an expression of the important areas of needs for livestock development assistance. A copy of the questionnaire used and the sample structure are included in Annex VII. The survey data will be shared with the Central Livestock Service which participated in its collection and in the design of the questionnaire instrument. It is intended for these results to become part of the effort to plan and program future livestock sector development activities.

*NOTE: The Gnanguedin (Koupela ORD) site encadreurs and interventions were also visited by J. Dickey on a previous trip in January 1980, at which time Mr. Scott and Mr. Deffendol were interviewed.

ANNEX II. LIST OF DOCUMENTS CONSULTED

1. Project Paper, Village Livestock Project (VLP 686-0203), March 1976 to 1978
2. PRO-AG VLP - 31 May 1976 to 30 September 1979
3. CID/USAID Contract Agreement, signed 22 June 1977
4. TDY Animal Health Trip Report, D. C. John Maré, DVM, April 1979
5. TDY Marketing Report, Dr. James McCallough, June 1979
6. TDY Range Management Report, Shawn Kelly, January 1980
7. Combination USAID/CID VLP Evaluation Report, March 1979
8. Correspondence File, November 1977 to present
9. Bi-monthly and Semestrial Report File
10. Memorandum of Understanding, CID/USAID-Ouagadougou/VLP, 20 September 1979
11. Rangeland Resource Inventory, Tafogo Site, July 1979
12. Sociological Report, VLP, 4 August 1979
13. Baseline Data Report, CID/VLP, January 1980
14. Design of Phase II, CID/VLP, June 1980
15. Final Draft Report of Livestock Sector, July 1980
16. ONERA By-product Feed Report, 1980
17. GOUV/VLP Report File of Dr. Sionné
18. Report on Community Organization, CID Team, 20 June 1978
19. Reports by Encadreurs, ORD/Koupela, Kaya, January-September 1980
20. "Projet de l'Elevage Villageois, Haute-Volta," Commentary on Chapter 3, Project Design Phase II, Service d'Elevage, June 1980
21. Rapport d'Activité du Projet Elevage Villageois, Periode Août 1979 à Mars 1980

ANNEX III. LIST OF PERSONAL CONTACTS, 17 SEPTEMBER - 22 OCTOBER 1980

Evaluation Team:

Claude Salem, Sociologist
Meril Carter, Range Ecologist
James Dickey, Livestock Production Specialist

USAID Participants:

Richard C. Meyer, Mission Director
Samir M. Zoghby, Chief, Rural Development Division
E. VanVoorthuizen, VL Project Manager
R. Carey Coulter, Program Officer
M. Rugh, Program Office
P. Karp, Program Office
G. Billsby, Controller's Office

CID Team:

Fred Sowers, Sociologist/Extension Advisor
Other team members had departed, but interviewed on previous visit in
January 1980 by Dickey, were:
Grant Scott, Team Leader/Livestock Advisor
Scotty Deffendol, Range Management Advisor

GOUV Service de l'Elevage:

Dr. Boubakar Hama, Assistant Director of the Livestock Service
Dr. Lebedé Sionné, VL Project Manager
Dr. Salif Guigma, Chief, Animal Production
Mr. Oula Coulibaly, VLP, Ing. de Développement Rural
Mr. Seydou Ouédraogo, VLP, Ing. de Développement Rural - Elevage
Mr. Amadé Younga, VLP, Ing. de Développement Rural - Elevage
Mr. Zakaride Sorgho, VLP, Ing. de Développement Rural - Elevage
Dr. Adama Pierre Cliver Dera, VLP, Docteur Vétérinaire
Mr. Marcel Somda, VLP, University Study Trainee
Mr. Daniel Ouédraogo, VLP, Encadreur at Koukoundi
Mr. Dieudonné Ouédraogo, VLP, Encadreur at Koukoundi
Mr. Bamago, Ouagadougou Regional Officer, Ing. de Développement Rural - Elevage
Mr. Hubert Ouédraogo, Veterinarian Nurse at Tougouri
Mr. Ouédraogo, Chef du Service de l'Elevage, Kaya
Encadreurs at the Kaya, Kopela and Fada ORDs

Herders and Farmers:

Chief of the Village of Koukoundi and eight members of the Livestock
Producers Committee
Chief of the Tafogo Village and 24 members of the Livestock Producers
Committee
Chief of the Gngangadin Livestock Committee and Committee members
Chief of the Tienkodogo Association and Committee members

Kaya ORD

Mr. Honoré Deindere, Deputy Director, ORD
Mr. Richard Woodhaven, UNAS

Kopela ORD

Mr. Paul Henri, Prefet
H.E. the Naba Tigré of Tienkodogo, Mr. Sorgho Mollé
El Hadj Oubda Lokré, President, Butchers Association, Tienkodogo

Fada ORD

Mr. L. Lompot, Director ORD
Dr. Tabsoba, Chief, Circonscription Elevage
Mr. Diallo, Assistant d'Elevage
The Director of Community Development and Training

GOUV - Office National de L'Exploitation des Ressources Animales (ONERA):

Mr. Amadou Ciré - Ba, Chef de la Production Animale
Mr. Charles Ouédraogo, Chef de la Statistique

CILSS (Comité Inter-Etats de Lutte contre la Sécheresse dans le Sahel):

Dr. Moulaye Diallo, Range/Ecology Expert

Germany Technical Assistance Team:

Dr. Wolfgang Schrecke, DVM, Veterinary Pharmacy

FAO - Euroaction Consultant

Mr. Chris Rae, Dutch Planning Advisor, Service Départemental de Planification of Kaya

Centré Régional de Teledetection de Ouagadougou:

Mr. Roy Hagen, Forester, USA
Mr. Christien Prions, Forester, CIDA

ANNEX IV. RANGE MANAGEMENT OPTIONS - VLP

MANAGEMENT OPTIONS	EFFECTIVENESS - CONSIDERING VEGETATIVE IMPROVEMENTS AND EROSION CONTROL	DEGREE OF DIFFICULTY TO IMPLEMENT AND COST EFFECTIVENESS
Year-round grazing with moderately low stocking rates.	Slow to promote seeding and growth of desirable species.	Least difficult but requires feed supplements such as crop residues for satisfactory nutrition. Cost - low; effectiveness - low.
Rainy season grazing. Dry season rests. Moderate stocking rates.	Used mainly in areas without water. Slow vegetative improvement.	Similar to currently used systems in drier areas. Requires marking of pasture division. Cost - low; effectiveness - low to moderate.
Dry season grazing. Rainy season rests.	Most effective for vegetative improvement.	Familiar to livestock users in target areas. Requires pasture division by marking. Heavy, dry season grazing should begin when <i>Andropogon Gayanus</i> or other 'key' species set seed. Depending on conditions, controlled burns may be necessary. May require water development. Cost - low to moderate; effectiveness - excellent.
Reverse grazing & rest seasons of two preceding systems. Moderate stocking.	Effective.	Cost - low to moderate; effectiveness - good. Possible fire hazard.
Three or more pastures, rest/grazing rotation.	Effective.	Fire hazard; controlled burn in one or more pastures each year. Probably requires fencing or patrolling. Complicated systems considering current capabilities. Much movement of stock. Not considered cost effective
Heavy, short duration grazing followed by rests, all in rotation.	Effective.	Sophisticated system. Requires many pasture divisions. Not considered a valid option. Much movement of livestock. Not cost effective.
Controlled grazing in a specific area at specified time based on control of water in area.	Effective.	Provides flexibility in grazing time to facilitate vegetative improvement. Requires positive accord to control water among local users and accommodation and cooperation of transhumants. Cost effective.
Develop water in dry area to facilitate dry season grazing in order to rest during rainy season.	Effective.	Same as above. Water developments, considering health hazards and costs, are necessary. Cost - moderate in target areas.

ANNEX V. ESTIMATED 1980-81 COST FOR SUPPORT OF LIVESTOCK SERVICES
(\$1.00 = 210 CFA)

	\$	CFA
PERSONNEL		
Encadreurs (8)	15,500	3,255,000
Drivers (4)	5,700	1,197,000
Secretary (1)	1,600	336,000
Typist (1)	1,500	315,000
Orderly (1)	1,300	273,000
ANIMAL HEALTH - VETERINARY SERVICES		
Vaccination Revolving Fund	4,800	1,008,000
Veterinary Materials	1,300	273,000
Operation and Maintenance of Refrigerators	500	105,000
WELLS PROGRAM AND VACCINATION PARKS		
1 Mason (5 months)	800	168,000
2 Mason Assistants (5 months)	1,200	252,000
8 Wells	45,700	9,597,000
Vaccination Parks	5,000	1,050,000
RANGE MANAGEMENT		
Maintenance of Demonstration Parks	500	105,000
Range Management Specialist (Voltaic National)	8,800	1,848,000
Extension Support Specialist (Expatriate)	50,000	10,500,000
Housing for Range Management Specialists (2)	2,300	483,000
ENCADREUR IN-SERVICE TRAINING		
Transport/Per Diem - Encadreurs	1,000	210,000
Training Personnel	400	84,000
Field Trips	200	42,000
Training Materials	500	105,000
OPERATIONAL COSTS		
Vehicle Maintenance	9,500	1,995,000
Gas and Oil	14,300	3,003,000
Replacement of Eight Mobylettes	5,300	1,113,000
Office Equipment	2,400	504,000
CNSS	4,500	945,000
Travel/Per Diem	6,800	1,428,000
SUBTOTAL	191,400	40,194,000
CONTINGENCY (10%)	19,140	4,019,400
TOTAL	210,540	44,213,400

ANNEX VI. GUIDELINES FOR RANGE MANAGEMENT PLANS

Much of the discussion arising from differences of opinion on project activities and emphasis, as noted in the general summary, involved the degree of range management base data needed and collection techniques. The problem could have been averted by calling in third party expertise to propose specific techniques to speed-up data collection and facilitate preparation of designs and plans for implementation. The suggestions listed below for undertaking range site and condition surveys are intended to provide a logical means of developing valid management alternatives.

a. Correlate range sites with soil groupings occurring in the area as a basis for determining basic resources, conditions, potentials and erosion hazards. A valid range site delimitation encompasses an area of similarities in soils, vegetative production and potentials, erosion hazards, and treatment needs for protection and improvement. Thus the management alternatives applicable will be similar. The final range management design and plan devises a practicable means of achieving management objectives over an area generally encompassing several sites.

b. An identified range site, properly described, can be used to rapidly survey contiguous or distant areas within a climatic zone or rainfall belt. The key here is that, additional detailed surveys and sampling are not needed to come up with the desired data. The current vegetative condition must, of course, be assessed on the new area.

c. Grazing management plans can be developed by using the range site condition survey to extrapolate management alternatives. The final plan is a joint selection by the planner and the local range management committee of the most practicable grazing system to achieve management objectives. The plan must specify grazing season, and rests and rotations, if any, plus stocking rates, grazing distribution provisions, water developments to facilitate management, special treatments such as critical erosion areas, tree plantings or burnings, as appropriate. Balancing forage and/or feed supplies on a year-round basis to maintain desirable nutrition levels, should be a requirement. Range grazing, field grazing, crop residues and supplementing feeds are some of the ways to achieve balance. See Annex IV for table of management options and cost effectiveness.

d. Rotational grazing areas, where planned, must have clearly marked boundaries such as painted trees or rock piles at intervals along division lines.

Fencing seems obviated from a cost/maintenance viewpoint except for small demonstration areas. Herding will be necessary in the future as it is now.

e. Utilization checks of vegetation should be made at the end of the grazing season using standard procedures, including the concept of 'key' species to develop information necessary for plan modification.

f. Use of techniques for facilitating range surveys: rapid and accurate range surveys should be used on the project. Among the techniques are visual observations and estimations of species composition, density, canopy, and forage production. All observations and estimations should be occasionally verified by plot or point sampling until reliable skills are developed. Training to develop these skills is necessary for VLP employees engaged in range work. Air photos are particularly useful in all survey and planning work. It is desirable to draft hectarage and range site/condition data directly on a photo mosaic supplemented with typed management directions as agreed upon with the range users.

ANNEX VII. RESULTS OF A SURVEY OF PROJECT BENEFICIARIES
IN THE TAFAGO AND GNANGUEDIN ZONES - OCTOBER 1980

SITES:	TAFAGO		GNANGUEDIN		
ETHNIC GROUPS:	Mossi	Peulh	Mossi	Peulh	Bissa
<u>Sample Composition</u>					
Committee Members	10	7	3	6	8
Non-committee Members	<u>15</u>	<u>14</u>	<u>11</u>	<u>15</u>	<u>11</u>
TOTAL (N)	25	21	14	21	19

<u>Most Important Service Provided by Project</u>					
	%	%	%	%	%
Health	64	71	57	81	63
Water	32	19	21	5	5
Clotures	-	-	21	14	16
Other (don't know)	4	10	-	-	-

<u>Most Important Service Desired from Project</u>					
	%	%	%	%	%
Health	24	43	43	24	16
Water	48	28	36	66	68
Roads, Range	8	10	7	5	-
Food	4	10	-	-	-
Other (don't know)	16	9	14	5	16

ENQUETE POUR L'EVALUATION DU PROJET ELEVAGE VILLAGEOIS

Village _____ Nom de l'enquêteur _____

Ethnie _____ Date de l'enquête _____

Age _____

Combien de femmes ? _____

Combien d'enfants ? _____

1. Etes-vous membre du Comité d'Eleveurs ? Oui _____ Non _____

2. Assistez-vous aux réunions du Comité ? Oui _____ Non _____

2a. Si oui, assistez-vous y souvent _____

de temps en temps _____

rarement _____

3. A votre avis, quel a été l'impact du Comité dans votre village ?

¶ Si le répondant est membre du Comité, demandez-lui les questions suivantes :

4. Est-ce que les non-membres du Comité vous demandent de discuter certains sujets aux réunions ?

5. Est-ce que vous discutez de ce qui se passe dans les réunions avec les autres villageois qui n'assistent pas à ces réunions ?

5a. Discutez-vous les programmes présentés par l'équipe du projet avec vos bergers ?

Oui _____ Non _____

6. Est-ce que les réunions du Comité vous ont aidé à être un meilleur éleveur ?

§ Si le répondant n'est pas membre du Comité, demandez-lui les questions suivantes :

7. Avant les réunions, demandez-vous aux membres de discuter certains sujets dans leurs réunions ? Oui _____ Non _____

8. Parlez-vous de ce qui se passe dans ces réunions avec les membres du Comité ? Oui _____ Non _____

§ Les questions suivantes sont pour tout le monde.

9. Est-ce que le projet est pour tous les villageois ou seulement pour les membres du Comité ?

10. Quels services ont été apportés à votre village par le Projet ?

11. Quels sont les plus importants ?

1. _____

2. _____

§ Selon la réponse, passez aux questions en rapport aux services spécifiques qu'ils ont indiqués.

A. VACCINATIONS

A-1 Est-ce que la mortalité des bovins est plus faible aujourd'hui qu'avant l'installation du projet ?

A-2 Vaccinez-vous vos animaux régulièrement ?

A-3 Si oui, contre quelles maladies ?

A-4 Est-il plus facile d'obtenir un vaccinateur maintenant qu'avant l'installation du projet ? Oui _____ Non _____

A-5 Pensez-vous que les prix des vaccinations sont trop élevés ? Oui _____ Non _____

A-6 Que pensez-vous des parcs à vaccination construits par le projet ?

A-7 Quels sont les parcs que vous préférez ?

a) les parcs traditionnels ?

b) les parcs construits par le projet ?

Donnez vos raisons :

B. GESTION DES PATURAGES

B-1 Y a-t-il des bons pâturages dans votre région ?

B-2 Suffisent-ils à l'alimentation des animaux ?

B-3 Quand ces pâturages sont-ils utilisés ?

B-4 Pourquoi apportez-vous plus de soins aux bovins qu'aux caprins et aux ovins ?

B-5 Les feux de brousse sont-ils nécessaires ?

Oui _____ Non _____

Si oui, pourquoi ?

B-6 Pensez-vous que les parcelles clôturées sont utiles ?

Oui _____ Non _____

Si oui, donnez vos raisons :

C. PROGRAMME DE PROVISION D'EAU

C-1 Que pensez-vous des puits réalisés par le projet ?

C-2 Quelles sont les différences entre ces puits et les anciens creusés par vous-mêmes ?

C-3 Préférez-vous des puits à usage mixte ou des puits éloignés purement réservés aux animaux ?

§ Continuez avec la question 12. Les questions suivantes s'adressent à tout le monde.

12. Recevez-vous plus de services maintenant qu'avant l'inauguration des Comités ?

Oui _____ Non _____

13. Quels services aimeriez-vous obtenir à l'avenir ?

14. Est-ce que vous aimeriez avoir un sous-comité d'éleveurs dans votre village ?

Oui _____ Non _____

15. Est-ce que vous croyez que les femmes ont besoin d'un comité aussi ?

Oui _____ Non _____

16. Quel est le rôle de l'Encadreur dans votre village ?

17. Obtenez-vous facilement les services des Encadreurs lorsque vous en avez besoin ?

Oui _____ Non _____

18. Vendez-vous des bovins de temps en temps ?

Oui _____ Non _____

Si oui, à quelle période de l'année ?

Et que faites-vous de l'argent ?

19. Depuis que le projet est commencé dans votre village, avez-vous vendu plus d'animaux qu'avant ? Oui _____ Non _____

Si oui, pourquoi ?

20. Est-ce que les habitants de votre village seraient d'accord de payer pour les services rendus par les personnes suivantes :

- la personne qui vaccine vos animaux ? Oui _____ Non _____
- la personne qui suit les projets de gestion des pâturages ? Oui _____ Non _____
- la personne qui donne des informations pour les soins des animaux ? Oui _____ Non _____
- la personne qui vous aide à former les Comités d'Éleveurs ? Oui _____ Non _____
- les services des gardiens des poulaillers ? Oui _____ Non _____

21. Quels changements voulez-vous voir apporter au projet ?

Instructions : - L'enquêteur devra s'assurer qu'à chaque question posée une réponse ait été donnée ;

- D'autre part, nous remercions toutes les personnes qui ont bien voulu répondre à ce questionnaire.