Ministry Of Agriculture
And
Development Fund, Norway

GASHBARKA LIVESTOCK AND RANGELAND DEVELOPMENT PROJECT
DEVELOPMENT FUND, NORWAY

MID-TERM EVALUATION REPORT

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ACRIMONY

DF	Development Fund
CBOs	Community Based Organizations
MoA-GB	Ministry of Agriculture – Gash Barka
ILT	Infectious Laryngatrichitis
NCDV	New castie Diseas virus
PEM	Protien and Energy Malnutrition
(t)	Tonne
PMU -	Project Management Unit
AWPB	Annual Work Plan and budgets
HH	Household
TOR	Terms of Reference

1. EXECUTI EXECUTIVE SUMMARY

1.1. INTRODUCTION

The Livestock and Range Development Project Gash-Barka has been under implementation since the year of 2001 in the Gash-Barka Administrative Region. It was planned to start in 1997 but it was delayed due to policy changes governing NGOs in Eritrea. However, immediately after commencement of implementation in the year of 2000, it was further postponed to 2001 due to the Eritro-Ethiopia war. The project is financed by the Development Fund of Norway (DF) and implemented by the MoA, Gash-Barka Region. The project implementation was planned to consist of two phases, each lasting 5 years. Phase I is to end by December, 2004 and phase II is expected to start sometime in January, 2005.

The DF however required to evaluate phase I prior to the start of phase II which is the reason for this evaluation report and the paper type of evaluation required was that of Mid-Term. The purpose of the evaluation was, *inter-alia*, to assess project performance during phase I at all levels as compared to the planned; to assess project organization and management; to examine the validity of the present project strategy design; impact; and sustainability issues and to produce recommendations. These are expected to enable collaborative decision about adjusting the project's direction and approach in phase II. For this function, the donor has assigned an external consultant. This paper constitutes the result of the Mid-Term Evaluation Report.

1.2. PROJECT AREA AND THE PROJECT

PROJECT AREA

The project area was the former Digge Sub-region which is located in the Gash-Barka Administrative Region. Due to some recent administrative changes, it is now part of Agordat Sub-region and for this Keru, Afhimbol and Hawashit Village Kebabis were left out from the project area and given to Forto-Sawa Administrative Sub-region. The project area is of hot-arid climate with an average annual rainfall of < 300 mm. The area is highly sensitive to drought. The average diurnal temperature revolves around 26 ^{o}C for the most part of the year. The topography of the project area is flat intercepted by some hills. The main drain system is the Barka River and its tributaries (Sheglet, Mogoraib, Jimel riversrs etc.). The main economic activities include livestock production and rainfed cropping but the latter is of recent origin and it is being introduced to compensate the failing pastoral system. Activities such as trade, fuel-wood sales, tree leaf collection, handcraft and seasonal employment are also practiced to a limited extent. Cropping is at frequent risk due to the extremely variable and low rainfall, hence livestock under postural system is the most reliable potential source of livelihood. Through the introduction of spate irrigated cropping by the Norwegian People's Aid (NPA) crop/livestock integrated system is becoming the most viable source of livelihood in the area.

The population of the project area is 17,099 and the number of households are 4,236. Ethnically, the population is mostly Tigre but some Hidarb and Nara are also present. Most of the population is practically under food aid which is a good indicator of poverty and food insecurity. However, the most vulnerable household groups in the project area are the female headed households, those without livestock ownership and the few disabled.

PROJECT DESCRIPTION

Rationale and strategy

The population in the project area consists mostly of returnees from the Sudan. Although rehabilitation programmes have been in place since the early nineties most of them are still have not achieved self-reliance in livelihood and they are with inadequate basic social services. The chronic wars have produced a large number of orphans and women headed households. The traditional source of livelihood has been always livestock under pastoral system, but this system has been deteriorating due to wars and drought to a point that it cannot sustain this livelihoods. Rainfed cropping in the area is unviable as the annual rainfall is very low (< 300 mm) and for that matter highly unreliable, hence the project area is very sensitive to drought.

The project area has however good potentials for livestock development. The Barka river with its tributaries forms the main drain system and there are vast grazing lands suitable for development. The main constraints to develop livestock so as to enable economic self reliance of the population include shortage of feed and drinking water points diseases and the poor production systems. The recurrent droughts and the poor technology

combined together made the area very vulnerable to food insecurity and poverty. It was within this context and the DF principles that the project was perceived. The strategies were designed to reduce these constraints though improving livestock productivity and establishing income generation activities and strengthening capacity taking the women headed households as the main target group. .

Objectives

The main objectives of the project are to improve:

(a) food security at household level; and
(b) institutional capacity of the MoA-Gash Barka and the communities.

Specific objectives

The specific, or component objectives are to:

- improve animal productivity through improved health, nutrition and management;
- increase household income with particular focus on female headed households;
- decrease the workload of women through provision of donkeys to transport water for domestic use; and
- strengthen the institutional capacity of the MoA Gash-Barka and the communities in the project area.

Components (Description)

The project components are:

(a) rangelands and water;
(b) poultry production;
(c) dairy goat production;
(d) provision donkey;
(e) provision of camel;
(f) institutional capacity buildings; and
(g) veterinary services.

Implementation arrangement

The project is being implemented within the existing institution of the MoA -Gash-Barka with full participation of the partners and in particular the beneficiary communities, the local government and the local women associations (NUEW).

Project management and organization

The project organization is not adequately structured. However it consists of the head of the MoA-GB, a coordinator and an accountant operating from Barentu. This body together with the DF representative at Asmara are responsible for project management. The implementing unit operates from Agordat and it consists of a manager who is also the head of the MoA in the project area. He is supported by two clerks and a driver. The project organization is currently suffering from lack of Personnel, effective organization and management system.

Financing arrangement

The main financing agency of the project is DF, Norway. The project budget for phase I was (Nfa) 6,625,28 and the expenditure up to end of 2003 was (Nfa) 7,074,472. The expenditure and balance to the end of 2004 were not available because the budget year is to end in December 2004.

1.3 PERFORMANCE

In general, project performance as compared to the planned, at the time of evaluation, has been satisfactory considering the less favourable environment for implementation.

1.3.1 IMPLEMENTATION RESULTS BY COMPONENT

1.3.1.1 Rangeland Component

The activities in this component, to the time of evaluation, have been implemented with mixed results. Mobilization of inputs and production of outputs were carried-out although some revised time has been experienced.

The planned activities for the range component, to the time of evaluation, were to develop 30 ha of range at Mogoraib; 2000 ha at Bisha/Adi-Ibrihim; 1500 ha at Jimel and 500 ha each at Girginai and Tekreret Villages respectively. The main sub-activities included site selection in collaboration with the community; land preparation, reseeding, closure, and establishing community based grazing committees. The activities and sub-activities implemented to the time of evaluation as compared to planned were variable by site. The fenced rangeland at Mogoraib and that at Bisha were implemented as planned; while that at Jimel only about 500 ha was implemented. The ranges planed for Tekreret and Girginai were not implemented due to institutional problem regarding range site selection. The Bisha range was implemented but the output or forage has not been produced at the anticipated amount. Production varied with the annual rainfall received where in the year of 2003, it was reasonably good; while in 2004 it was very poor. The causes for this were both drought and technology in water conservation and range development techniques. In 2003, it produced forage equivalent to the needs of about 650 TLU. This was only 30% of the anticipated. The Mogoraib range, designed for cut-

and-carry, has almost produced the output as anticipated with a yield of about 6 (t) of DM/ha (total biomas). The Jimel range did not produce the expected output or forage. The problems of this component were technical, institutional and climatic.

1.3.1.2 Water Component

The component has two sub-components which are the well and the pond. The planned activity for this component was to construct 3 boreholes at Bisha, Jimel, and Griginai, respectively. It was planned also to construct 3 ponds at Tekreret, Girginai and Jimel, respectively. Implementation compared to planned was that the Bisha and Jimel boreholes were completed although the latter did not start services as planned. The borehole at Girginai was drilled, but not equipped because the water yield was only about 1 liter/second. The status with the sub-component well was that only about 70% of the planned was completed. The ponds have been completed and the output was produced as planned. The total revised time for the boreholes was (+) 21 months, while the ponds were completed within the planned timeframe.

1.3.1.3 Veterinary service Component

The planned activities to the time of evaluation were to establish two functional veterinary stations involving the construction of two buildings, equipping, recruiting personnel, providing supplies annually and establishing service delivery system. The activities implemented as compared to planned were that buildings were constructed, equipment procured but they were not placed in the stations. The total revised time was (+) 20 months. Production of the anticipated outputs was not adequately completed as planned. The main implementation problem was the inadequate capacity of the project organization.

1.3.1.4 Poultry Component

The planned activities and output production to the time of evaluation were in general implemented as planned, however the total revised time was excessive. It was planned to distribute 505 poultry packages (pullets, feed, housing, equipment) to 505 women. The result was that 112 % of the planned was achieved but not in equipment (water, feeder) which was only 50 % completion. The total revised time was (+) 18 months. The implementation problems were inadequate capacity of the project

organization, inconsistency in feed supply availability at Asmara and the lengthy process of day-old chick importation from Egypt.

1.3.1.5 Dairy Goat Component

The activities were implemented as planned but excessive delays were experienced. The planned activity was to distribute 4845 goats to 969 households at the rate of 5-7 goats per household. Achievement against planned to the time of evaluation was about 93 %. The total revised time was (+) 18 months. The main implementation problem was incapacity of the project organization.

1.3.1.6 Donkey Component

The activities planed were implemented as planned where 260 donkeys were distributed to 260 women. The hauling of water using donkey was operating effectively.

1.3.1.7 Camel component

The activities were not implemented as planned. It was planned to distribute 50 camels to 50 men headed households, but only 20 were distributed. The status at the time of evaluation was that only 40 % of the planned was achieved. The implementation problems were the availability of less markets for camel, and the low capacity of the project organization.

1.3.1.8 Institutional Capacity Component

The activities of the component were generally implemented as planned. The training of the MoA Gash-Barka staff in the fields of rangeland and management was achieved as planned. The training of communities was only partially achieved. The achievements in training compared to planned were 95 % in poultry; 113 % in range management; and only 18 % in dairy goat. The activity of providing equipment and facilities was completed as planned. The activity of project staff recruitment was not implemented as planned. While an accountant, a driver and an Animal Health Assistant were recruited, but the manager was not.

1.3.2 RELEVANCE

The project as a whole is of high relevance to the beneficiaries because it meets their priority needs. This has been strongly expressed by the beneficiaries and verified by their active participation during

the evaluation process. The partners at different levels also agree on the relevance of the project to the communities involved. The project is reducing food insecurity and child malnutrition levels through the income generating components and this was particularly important to women. In the project area, water supply availability for domestic and livestock purposes is in acute shortage, and the supply available is unsafe and the source is usually very far. Hence water was of high priority to the population. The livelihood of the population is highly dependent on livestock production, but livestock productivity is too low to be able to sustain their livelihoods. Thus, improvement on livestock production through increased feed and water supply availability and effective disease control is of the greatest relevance to the population in the project area. The MoA-GB has a serious problem of capacity to be able to plan, implement, control and evaluate programmes and projects. It is also unable to give farmers effectively the services that they demand. This affects the development of the agricultural sector on which the rural population livelihood is based. The government policy gives high priority to food security and nutrition at household level and in particular of the rural communities which make up over 80 % of the country's population. The DF also focuses on food security and poverty issues of rural population.

1.3.3 EFFECTIVENESS

The various project components have specific objectives to increase incomes, improve access to clean water for livestock and humans, and to improve livestock productivity and institutional capacity. The project plans (*purposes, outputs and activities*) anticipated to be achieved, to the time of evaluation, have been achieved for the most part. In some components (e.g. water, camel, donkey, poultry, and dairy goat), the expected results were reasonably satisfactory. In others (e.g. range, veterinary and institutional capacity), achievement is in the process. The factors that influenced the variations in the level of achievements by the different components were largely due to the differences in the intervention logics taken or the strategy design and their nature. The factors that influenced effectiveness positively, in at least some of the components include the good commitment by the partners in general and in particular the active role and acceptance of the beneficiaries of their priority needs. The factor that influenced effectiveness negatively was the poor capacity of the project organization. The excessive revised time produced was due to inadequate capacity of the project organization and the unfavourable implementation environment such as lack of personnel.

1.3.4 EFFICIENCY

The resources of the project have been utilized in the best way possible in most of the components. In the income generating components cost-effectiveness was of reasonable result. The actual costs and utilization were reasonably as planned. Facilities and services were mostly in use and cost-effective with the exception of the borehole at Girginai; and to some extent the veterinary stations; the ranges and poultry houses.

1.4 IMPACTS OF THE PROJECT

The anticipated goals to be achieved by the project are improved household food security and nutrition, and enhanced institutional capacity of the MoA-Gash-Barka and that of the beneficiary communities. The project has already produced positive impacts on the livelihood of the involved beneficiaries. It is contributing towards achieving the goals, but the extent of its contribution was limited. For example, household incomes have been increased and child nutrition has been improved. However the level of income gained through the income generating components was still less than the average household expenditure. The contribution towards nutrition improvement was also limited to only protein and macro-mineral nutrients with little energy. The project has also produced positive impact on at least the management efficiency of the MoA-Gash-Barka, CBOs and individual beneficiaries. The anticipated positive impact on technical performance at the MoA-GB was not possible to assess. The training of project staff on management did not produce adequate impact.

1.5 SUSTAINABILITY AND IMPACT ON GENDER

1.5.1 SUSTAINABILITY

The project is expected to be sustainable socially, economically, technically, financially, institutionally and environmentally. This means that the positive impacts produced by the project will be contributed after the project funding is ended. All these factors should be controlled and developed so that they do not influence the sustainability of the project negatively. The factors that are likely to influence the sustainability of the various components negatively have been identified. The findings of the evaluation indicate that the project will be sustainable in most aspects provided that the design of the strategy is continuously adjusted to the changes that may occur in its environment. It will require efficient monitoring and evaluation to enable corrections on the strategy design in time.

The project is *socially* sustainable because it has good social support. The beneficiaries and local community organizations were actively participating in the project and they have formed their CBOs to manage their resources. In some of the sites such as Bisha, Jimel and Girginai; Water and Grazing

Committees were already formed and in others they were in the process. It is also *economically* sustainable because the reliance of the beneficiaries on subsidy such as food-aid, agricultural inputs (drugs, feeds etc.) is sharply decreasing. *Technically,* the project is sustainable because the resource base are easy to develop and the techniques are simple and locally based, however further testing and training are still essential. The *financial viability* of the project is also sustainable at least in some components. For instance, cost recovery is practiced in water supply and in some veterinary drugs and the income generating components are operating with reasonable financial results or profits. Other components such as veterinary service and range are not yet able to have capacity to finance operating costs. *Institutionally*, the project is sustainable because the CBOs organizational and management effectiveness is in the process of establishment. The project is *environmentally* sustainable because it does not produce any significant negative impact.

In respect to poultry, factors such as economic feed and chick supply availability, market, housing and management skills were concerns of sustainability issue. In dairy goat, the flock size, feed, housing and flock management were important factors that affect sustainability. In veterinary, full recovery of operating costs (drugs, vaccines, service etc.) and the capacity of the MoA-GB were some of the factors of concern. In water component, the technical skill, emergency equipment availability and hygienic maintenance were also of concern. In rangeland, drought and technology were issues of sustainability. In institutional capacity lack of effective CBOs may affect sustainability.

1.5.2 IMPACT ON GENDER

The project is contributing towards the cross-cutting issues of gender equity and empowerment of women but at a slow rate. The women beneficiaries were participating in the project matters where for example they were for the fist time becoming members of the CBOs. They are meeting frequently to discuss on women issues. They have started to have incomes under their own control and they are getting more exposure by frequenting markets and meetings. The project activities were contributing towards economic and decision making empowerment of women.

1.6. LESSONS LEARNED

The most important lessons learned were that:

(a) full community participation was a determinant factor for the success of projects such as this;
(b) projects/programmes that are area specific produce better results and concrete analysis of alternatives compared to regional or national;
(c) projects require well designed organization to be effective;
(d) small income generation enterprises are effective towards achieving food security; and

(e) there is need to adjust assumptions and strategy design.

1.7 RECOMMENDATIONS

- Project organization and management should be defined, structured, equipped and provided with adequate personnel and a viable system. The PMU should be centered at Agordat.
- The design of each component should be adjusted based on the lessons learned and the findings of the mid-term evaluation report.
- Institutional capacity building at the community level must be on a broader base and it should be enhanced. Facilities, training and links should be provided.
- The approach (technical, institutional) of range development and veterinary should be upgraded.
- The feed and chick supply, housing and the market in the poultry component should be studied with technical depth and viable alternatives be provided.
- In dairy goat, the nutrition , flock size, health and management must be improved because this component is very viable.
- In water, CB skills in management, maintaining equipment, and hygiene measures should be enhanced.
- Provide technical assistance support to the PMU.
- Integrating the activities of the NPA and DF, Norway towards evolving a viable crop/livestock system in the project area.
- Emphasis during Phase II, must be consolidation of what has been achieved rather than expansion.

2. INTRODUCTION

2.1 BACKGROUND

The Rangeland and Livestock Development Project-Gash Barka has been under implementation since 2001 although implementation was anticipated to begin much earlier. The project implementation was scheduled to start in 1997, but this did not occur due to some changes made in government policy regarding NGOs in operating in Eritrea. It was further rescheduled due to the war with Ethiopia and its aftermath emergency humanitarian problems where all efforts were directed towards controlling the emergency situation. The project cycle is to complete its mid-term by the end of 2004.

The project is financed by the Norwegian Development Fund (DF) within its principles of poverty reduction and food insecurity elimination and in this particular case it is of the pastoral people in the project area. It is being implemented within the framework of the MOA, Gash Barka Region; managed with the project of its twin-sister, the Norwegian People's Aid (NPA). Both projects are complementary to each other where the NPA is focused primarily on agriculture and soil/water conservation and the other on livestock with its ancillaries such as rangeland.

At this stage of the project management cycle, the project is at the end of Phase I, and the next phase is expected to begin in the year of 2005. However, before making a decision to start Phase II of the project, it was necessitated by the donor (DF) to carry-out an evaluation of Phase I. This is to measure implementation progress and achievements towards the objectives and goals for which it was designed. It is also to assess the expected and unexpected impacts; sustainability; the validity of the design of the project strategy at this stage and the lessons learned. For this purpose, the DF assigned T. Consult to produce an evaluation report on Phase I of the project and recommendations as per the TOR supplied (Annex 2).

2.2 BRIEF PROJECT DESCRIPTION

The project is principally livestock development in nature. Its main immediate objective is to improve the incomes and to some extent the welfare of women of the agro-pastoral community and the goals are to improve food security and reduce poverty. The livelihood of the beneficiaries is traditionally based on livestock but their productivity is becoming progressively low due to the disturbances made on the pastoral system. The causes include chronic state of war and drought, poor technology, and the encroachment of grazing land by cropping. As a sequel to this, the pastoral system has failed to sustain the livelihood of the pastoral people in the project area. Due to the successive wars, many female

headed households have been produced in the project area. The project is therefore focused to improve livestock productivity and emphasis is on women in particular those who are rearing children alone. The project area is in the Gash-Barka Administrative Region making part of the Agordat and Forto-sawa Administrative Sub-zones. It involves 6 village Administrative Centers.

To achieve this, the strategy was designed to consist of various components. The main activities involve income generating; water and rangeland; animal health, institutional capacity and addressing cross-cutting issues such as gender. The project is pilot in scope and the aim is to expand it basing on the results of phase I.

2.3 THE EVALUATION APPROACH

The project consists of a broad base with multiple elements each representing a specialized subject. It involves also various implementation partners at different levels. To satisfy the requirements of the standard evaluation, in accordance with the TOR, the approach taken for the study was by forming a multidisciplinary team and by involving the partners as much as possible and in particular the beneficiaries, the donor respective and the project authorities so as to give their reflections on the project's performance and if these are in agreement with their perceptions and aspirations on the project. The methodology involved several steps which was outlined as the study plan based on the TOR and the objectives and scope of the evaluation. The project documents in general and the project strategy design in particular were examined. The type, source and amount of data required for the evaluation were determined. The approach, methodology, implementation plan and the logistics were prepared in the form of outline. The TOR, the objectives and the scope of the study outline and the implementation plan were discussed and agreed with the key partners.

The data collection included both quantitative and qualitative methods. Four out of the total six Village Kebabi Administration sites of the project area, considered as adequate and relevant to achieve the objectives of the evaluation study, were selected in collaboration with the main partners. The main criteria taken were number of project components being implemented; gender; and the starting date of the project implementation in a given site. The plan included project beneficiaries and non-beneficiaries as well as the poor and the better-off people within the project area so as to allow comparison. The key project staffs were met and they were introduced to the finalized methodology. They were also requested to organize the samples of respondents for data collection and it was agreed that Agordat becomes the seat of the study team.

The team traveled to the project site and the small and large groups of community members and the key informants were met. The quantitative data collection and the in-depth discussions were carried out for each of the project components and each site was covered at a time. The respondents represented both women and men groups of beneficiaries, local village authorities, the project staff at the Sub-zoba and Zoba levels; the Sub-zoba Administration authorities and the National Union eritrean Women (NUEW) of Agordet Sub-zoba. The main limitation encountered was the absence of adequate data records such as on rangeland and animal health and production coefficients. The study team consisted of the following:

Name	Field	Duties
Dr. Teklemariam Zeggu	Livestock expert	• Team leader • Conducting in-depth discussions with partners individual informants and small groups
Aklilu Hadgu	Economist	• Quantitative data collection
Lidya Mengsteab	Social scientist	• Women group data collection on women issues
Tsegay Gebremariam	AHA	• Quantitative data on livestock and poultry
Semhar G/brhan	Computer expert	• Data entry
Bisrat Kidane	Computer data process	• Data processing

2.4 THE STRUCTURE OF THE REPORT

The structure is of the normal project evaluation report type in compliance with the TOR

1. **EXECUTIVE SUMMARY**
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2.5 PERSONS MET

At a higher level, the relevant staff of the MoA-GB at Barentu, and the DF representative at asmara were met. At the Sub-zoba level, the project staff; the Sub-zoba Administration authorities and the leader of the (NUEW) were met in Agordat. At community level, the Village Kebabi Administration authorities, the *Shimagles* (couslers), the local Women Associations and members of the beneficiaries of both genders were also met (*Annex 10*).

3. PERFORMANCE OF THE PROJECT

3.1 MAIN DESIGN FEATURES

3.1. 1. PROJECT RATIONALE AND STRATEGY

Project design or redesign is a continuous process over the life of the project. This is because there is need to adapt the project design strategy and operations in response to changing contexts and lessons learned from implementation. Comparing what was planned in the project strategy and understanding these in order to identify changes in strategy and operations is a core function of monitoring and evaluation.

The project has been conceived within the context of food insecurity and poverty of the population in the project area. The population in the project area has been suffering from high levels of food insecurity and poverty where the majority are under Food-Aid programme. Most of the households are returnees from the Sudan after a long period of displacement and considerable part of these are female headed. Although attempts were made to resettle them socially and economically, through government and aid-agencies, the process has not been able to move the majority out of food insecurity and poverty because they had no means to start their livelihood. The livelihood of this population has been undergoing through serious destabilization due to chronic wars and recurrent droughts over the past decades. It is obvious that the wars, including the last one with Ethiopia (1998-2000), have produced high numbers of female headed households with young children forming a very vulnerable group.

In the project area, the main source of livelihood has been livestock production under pastoral system, but during the war decades the population left the country and the livestock were lost. When the returnees arrived in Eritrea they had no livestock to attain self-reliance in livelihood. Economic activities such as cropping and trade were introduced later as a means of coping mechanism. The project area is the drain system of Lower Barka river with its tributaries and large areas of flat grazing land are available. The area has been always a major producer of cattle, sheep and goats and as such it

was among the chief suppliers to the meat industry in the country including export. Thus, the area has high potential for sustainable livestock production provided that adequate breeding stocks are made available and that animal health, nutrition, market and management are improved.

Based on this, the project strategy design has a focus on the improvement of livestock productivity and production and institutional capacity building. The project is expected to enable the population in the project area to achieve self-reliance in their livelihood initially and in the long-term to improve their overall living standards. The project strategy consists of seven components, and these include poultry, dairy goat, camel, donkey, veterinary service, range and water point development, and institutional capacity building. Each of these components consists of several elements, and the activities are directed towards specific target groups of the populations and institutions.

3.1.2. PROJECT AREA

The project area was selected on the basis of its potential livestock resources base and the context of high levels of food insecurity and poverty. The area is the former Digge Sub-zone of the Gash-Barka Administrative Region (Annex 1). It is part of the Barka river basin where the main tributaries are *Sheglet, Mogeraib, and Jimel rivers*. The terrain is flat; the soils are clay loam with brownish black colour and vegetation is of the "*steppe*" type. The climate is hot arid with an average annual rainfall of less than 300 mm. The main economic activity is traditionally livestock but rainfed cropping is also creeping in. Limited handcraft, trade, fuel wood and tree leaves collection and seasonal employments are also significant. The main constraint in cropping is low and erratic rainfall; while those for livestock are shortage of feed, disease, lack of drinking water, poor management and market. The two agricultural production systems in the area are traditional agro-pastoral, and pastoral. Productivity is very low and the systems, being traditional, are highly vulnerable to drought. As a sequel to this they have, in most cases, failed to sustainably support the livelihood of the population. The root causes are arid climate and the poor regional governance created by the tensions or wars involving Ethiopia and the Sudan. The main coping mechanisms in times of drought include sale of livestock, trade and labour.

The project area consists of a total population of about 17,099 or 4,236 households, and 6 Village Kebabi Administration Centers. Table 1 shows the distribution of households and populations in the project area by Village Kebabi Administration Centers.

Table 1. Population and households numbers and structure in the project area by Village Kebabi

Village	Total HH (nos)	Female headed HHs (nos)	Number by gender		Population (nos)
			Male	Female	
1. Tekreret	1,064	235	2,634	1,874	4,508
2. Adi-Ibrihim	614	170	1,449	1,219	2,668
3. Jimel	461	86	1,041	906	1,947
4. Girginai	574	130	1,155	1,086	2,241
5. Mogoraibe	1,036	214	1,894	1,717	3,611
6. Adi-Shekalamin	487	93	1,097	1,027	2,124
Total	**4,236**	**928**	**9,270**	**7,829**	**17,099**

HH: household

The target groups in the project area are mainly the female headed households and the poorest of the male headed households. The overall social services such as clean water supply, health and transport are very poor. These constraints affect more the women and children segments of the population. The local institutions are adequately structured at the Village Kebabi level to allow project implementation. They consist of the Village Assembly (Baitos), Village Kebabi Administrative Center, the Water and Grazing land Committees, and the Village Women Associations. They are fully aware of the DF supported project and its importance to them, hence they are actively participating as partners. The existence of such a favourable local institutional organizations is an important factor for the smooth implementation and sustainability of the project.

3.1.3. PROJECT GOALS, OBJECTIVES AND COMPONENTS

The goals or the developmental objectives of the project are to *(i)* contribute towards improving the living standards of the beneficiaries; *(ii)* enhance the institutional capacity of the MoA-GB headquarter, and the community, and *(iii)* to enhance gender equity.

The specific objectives which lead to achieve the goals are to:

- **(i)** increase household incomes with emphasis on those that are female headed;
- **(ii)** decrease workload and of women to carry water through the provision of donkeys;
- **(iii)** strengthen the efficiency of the management and technical staff of the MoA-GB;
- **(iv)** strengthen the CBOs to manage their resources; and
- **(v)** improve water supply for livestock and human uses.

To achieve the objectives, the design of the strategy taken was by planning components directed towards the specific needs of target groups. The components are:

(a) developing grazing land and management system;
(b) strengthening veterinary service;
(c) developing drinking water source for livestock and the population;
(d) introducing improved backyard poultry;
(e) introducing dairy goat;
(f) provision of donkeys;
(g) provision of camel; and
(h) capacity building of the MoA-GB staff and the community.

3.1.4. MAJOR CHANGES IN POLICY AND INSTITUTIONS DURING IMPLEMENTATION

During actual project implementation, changes in policy were not major. The project was further delayed by one year due to the war with Ethiopia because the policy priority was to fight emergency situation and accordingly most of the project budget for 2000 and most of the MoA-GB staff were mobilized for the war. Due to economic policy changes, domestic prices on all commodities have increased. The other policy change was that the borders with the Sudan were also closed with impact on agricultural prices such as sorghum grain. In respect to institutional changes, the Digge Administrative Sub-zoba which was the former project area has been dissolved. Due to this, some part of the former project area (Keru, Hawashite, Afhimbol Village Kebabis) was taken to belong to the Forto-Sawa Administrative Sub-zoba; while the remaining part went to the Agordat Administrative Sub-zoba. In effect, the newly shaped project area is mainly within the Agordat Administrative Sub-zone.

3.1.5. DESIGN OF STRATEGY CHANGES DURING IMPLEMENTATION

There was no major change in project strategy design except that the project expanded its activities from Bisha to cover more area.

3.2 SUMMARY IMPLEMENTATION RESULTS

3.2.1. INTRODUCTION

The project had been under implementation starting from the year of 2001; however the Annual Work Plans and Budgets (AWPBs) were not detailed enough. The monitoring and evaluation system was not adequately designed and the function was not carried-out at regular intervals. The logframe matrix which is a vital base for preparing the AWPBs has not been fully developed during the process of

project strategy design. A general overview of the project's objective hierarchy was described in words. In the absence of these elements, it was not very simple to make a more accurate comparison between *what* was planned, *when* and *how* to achieve the outputs and outcomes, and the actual implementation. This being the case, an attempt was made to reconstruct the approximate planned and actual activities and the time schedule from the available project reports and records and through the discussions made with the project authorities and implementation staff. The implementation of project activities during the first two years of Phase I was at a slow rate, but this rate was increased starting from 2003 and the reason was probably because the project management has improved later. The project implementation has been delayed by one year from the start. In this section the approach taken to assess performance in input/output implementation was by component rather than by site.

3.2.2. DAIRY GOAT COMPONENT

The component was designed to be income and protein food source for the involved households. Implementation of this component involved distribution of breeding dairy goats at an average of 4-7 heads, depending on goat prices to each of the most needy female headed households in the project area. The activities include determining beneficiary villages, selection of household beneficiaries by village, forming procurement committees and the actual procurement process. The planned activity to be completed at the time of evaluation was to distribute 4845 goats to 969 households (Table 3). The actual implementation was that 4515 goats were distributed to 879 households, and achievement was about 90% of the planned. Comparing the various project sites, or Village Kebabi Administrative Centers, about 16 % of the total households involved were at Mogoraib followed by 13% at Adi-Ibrihim. The lowest household numbers (3%) was at Hawashite. Implementation of the component started in the year of 2002 with a revised time of (+) 2 years. It has also produced further (+) 18 months of revised time to the time of evaluation. The status at the time of evaluation was that completion of the planned activities was about 91.5%. The output of goat flock has been established, the outcomes of milk and meat are under production.

Problem diagnosis

The main problem encountered during implementation was delay. The direct cause for this was the poor capacity of the project organization and management and this was due to inadequate staff. The root cause was the inadequate project organization and structure.

3.2.3. POULTRY COMPONENT

The poultry component was designed to be a means of nutrition improvement and income generating for women and with priority given to women headed households. The poultry package for each household consisted of 25 pullets or 2 months age; poultry housing; feeder/waterer; and an initial feed supply of 150 kg distributed at three stages. The package in respect to the number of pullets supplied to each household had been varying from about 15-25 birds. The breed selected was Fayomi which is sustainable for the environment in the project area (e.g. climate, disease, nutrition scavenger system). These birds were imported from Egypt as day-old chicks and reared by the MOA-GB up to the age of 2 months during which period they are vaccinated against infectious poultry diseases (e.g. NCDV; ILT).

Implementation of the component started at the Bisha/Adi-Ibrihim Village Kababi Administrative Center in 2001 and it was expanded to cover 8 Village Kebabi Administrative Centers at the time of evaluation .The planned activities involved importation of chicks and mobilzation of inputs in each beneficiary village. This includes pullets, construction materials for poultry housing with feeders and waterers and initial poultry feed. The planned activity for Phase I was to provide 605 households each with the poultry package. The achievement was 575 households. In respect to the time plan, it was planned to start implementation in the year 2000, but the actual was in 2001. The total revised time for Phase I was about (+) 30 months. Excluding the first year, the revised time was (+) 18 months (Table 3). The highest revised time produced was in selecting beneficiaries, and chick importation (+2) months. The next highest were in feed procurement, distribution of feeders/waterers and pullets, and poultry house construction.

During Phase I, the total day-old chicks purchased were 12,250 which was 99% of the planned target. About 10,925 pullets were distributed which was 100% of the planned. About 0.95 (t) of poultry feed was distributed which was 94% of the planned. The lowest implementation rate was in providing feeders and waterers (40%). The status is that about 95 % of the planned activities (excluding feeder/waterer) have been achieved (Table 3). The volume of activities varied among the Village Kebabi Administrative Centers where the highest was in Bisha/Adi-Ibrihim. The training of women was implemented as per plan. The planned outputs at the evaluation time such as establishment of viable poultry flocks, housing system and, chick replacement system, health care system, skills were achieved by most of the beneficiary households. The outcomes of producing eggs and meat were also achieved. The component started in Bisha/Adi-Ibrihim where the achievement was highest as compared to other Village Kababis.

Problem diagnosis

The main implementation problems were the lengthy procurement processes involving chicks and feed. The causes were inadequate capacity of project organization and the lengthy process of chick importation carried-out from outside the project (MoA).

3.2.4. DONKEY COMPONENT

Implementation of this component started in the year of 2003. The activities involved were selection of recipient villages selection of women beneficiaries, forming procurement committees and visits to markets for actual procurement. The planned activity up to the time of evaluation was distribution of 260 donkeys to 260 women living in 9 Village Kebabis. The actual implementation was 100% of the planned to the evaluation time and the service was operating.

3.2.5. RANGELAND COMPONENT

The anticipated activity of the component was to establish improved ranges at five sites in the project area. The sub-activities in each site include site selection, land preparation, soil/water conservation, reseeding with suitable forage/fodder plant species, monitoring and evaluation, forming enclosure and community based range management system involving grazing committee, grazing fees and schedules. The result expected at the time of evaluation as compared to the planned was that the *Mogoraib* site (30 ha) has been completed; while the *Bisha* site (2000 ha) has been only partially completed and the *Jimel* site (1500 ha) had been only initiated covering an area of only about 500 ha.

In *Girginai* and *Tekreret* range sites, implementation of the planned sub-activities has not been even initiated. The relatively most advanced implementation level among the five sites was in Bisha were the sub-activities were implemented in about 50% of the planned land area. However even in this site the soil/water sub-activity was not appropriately implemented to ensure adequate soil moisture through an even spread and retention of surface water. This element is the most critical factor for plant growth. The remaining sub-activities formation of CB Grazing Committee of 8 men, and recruiting a team of guards team consisting of 6 men have been implemented. At *Jimel*, the range site was not made in agreement with the community because they claim that the well site was too far from the village. At both *Tekreret and Girginai* sites, the range sites proposed by the project implementation unit have not been fully agreed upon by the respective communities. However it is likely that they will agree soon since the water points have been already been developed.

Due to this the anticipated output was not produced to the required level. A limited amount of grass has been produced at the *Mogoraib* and *Bisha* ranges. The status at the time of evaluation was that completion of activities were approximately 100%;

50%; 10%; and 0% of the planned at *Mogoraib*; *Bisha; Jimel; Girgiani and Tekreret*, respectively. In respect to outcomes, the Mogoraib has successfully produced forage for cut-and carry use at the rate of about 6 tonnes of DM/ha. The Bisha range produced only about 30% of the anticipated feed production.

Problem diagnosis

The implementation problems were drought, inadequate technology and in particular water retention techniques and the inability to mobilize communities. The basic causes were climate; wrong approach taken by the project staff in not involving the community in selecting range site and taking only the technical criteria and the inadequate project organization and management.

3.2.6. Water component

The Water Component consists of two sub-components which are wells (borehole) and ponds. The first was for human and livestock use while the latter was for livestock only. This component is closely associated with the Range Component, but water being nutrient for both human and livestock the objective was broadened to include human needs. The activities in the well sub-component include study for siting, drilling, equipping, construction of reservoir (27 m^3), water troughs and water taps. It was also planned to establish CBOs, or Water Committee to manage water use, maintenance water fee and bank account. The planned activities for Phase I were to develop 3 wells *(Bisha, Jimel, Girginai).* The 3 wells were drilled of which only 2 were equipped and provided with the accessory structures. The third was not equipped because the water yield was too low (1 lit/s) to use submersible pump (*Girginai*).

The only well that was totally completed and with adequate established management, at the evaluation time, was that of *Bisha*. The well at Jimel was nearing completion, but the water committee and fees have not been fully established to be operational. There is a plan to equip the well at Girginai with a hand pump. The total revised time produced was about (+) 21 months and the status was < 60% completion. The planned activities of the pond sub-component were to construct 3 ponds located at Girginai, Jimel and Tekreret, respectively. All activities have been completed within the planned timeframe. The status on ponds was at the time of evaluation, 100% in physical terms and the services were rendered.

3.2.7. VETERINARY SERVICE COMPONENT

The activities planned to be implemented up to the evaluation time included construction and equipping of two veterinary service stations at Mogoraib and Girginai, respectively. It was planned to provide 2 Animal Health Assistants (AHA), and annual veterinary supplies to operate the stations. The buildings have been constructed; the equipment were procured but still they are not in the stations; 1 AHA of the Hagaz Agricultural School type has been recruited, while the second was not; and the veterinary supplies (drugs, instruments and related consumable materials) have been procured annually. Most of the activities that have been implemented were not completed within the planned timeframe. The revised time for buildings was (+) 6 months; while that for equipment was (+) 15 months for *Girginai* and (+) 4 months for *Mogoraib*, respectively. The status at the evaluation time was that mobilization of inputs has not been completed as planned where achievement in equipment was 50%. In the activity of personnel recruitment, achievement was 50%. The anticipated outputs of establishing functional veterinary stations have not been fully produced.

Problem diagnosis

The main problem was delays to recruit personnel and equip the stations. The cause was inadequate project management efficiency and the root cause was inadequate project organization and management.

3.2.8. INSTITUTIONAL CAPACITY

The activities of the component planned to be implemented during Phase I were training of the MoA-GB staff at HQ; project staff; and community members in the fields of management and technical competence. It was also planned to recruit project personnel and provide equipment and facilities. The activity of training MoA-GB personnel was completed as planned. The activity of training community members was implemented, but it was not completed as planned. In poultry, training was completed 95% of the planned; in dairy goat 18%; and in range 113%. The activity of the project personnel recruitment was not implemented as planned. The sub-activities of recruiting project manager and a second Animal Health Assistant were not implemented. Implementation of infrastructure has been completed as planned. The buildings for women community (Adi-Ibrihim) and veterinary stations have been implemented as planned. The activity involving office equipment and furniture vehicles and office supplies has been also implemented as planned.

The revised time in implementing training varied from (+) 3 to (+) 21 months where the highest was in community training (poultry and dairy goat). In recruitment, the highest revised time experienced was that of the project manager which has not been implemented since it was planned for the year of 2001.

The recruitment of the Animal Health Assistant has produced a revised time of (+) 36 months (Table 3.)

3.2.8 BUDGET AND ITS UTILIZATION

The total project budget for Phase I was (Nfa) 6,625,228. The total budget utilized up to the end of the year of 2003 was (Nfa) 7,927,162. The utilization rate was satisfactory although in some years and components it was not as planned (Annex 3). The budget had been utilized for the agreed project activities except in the year of 2000 where it was diverted to emergency food aid. Table 2 gives a summary budget for Phase I, (excluding for the year of 2004). The low budget utilization in 2001 was largely due to weak project organization. It was improved in 2003 as capacity was relatively improved

Table 2. Summary of project budget and utilization (2000-2003)

Year	Budget	Disbursed	Carry over from the previous year	to end of this year	Expenditure	Balance available	% used
2000	1,091,672	910,028	-	910,028	909,506	522	100
2001	1,008,210	931,049	522	931,571	249,522	682,049	27
2002	1,250,000	1,465,465	682,049	2,147,514	1,273,344	874,170	59
2003	1,315,568	4,620,620	874,170	5,494,790	4,642,100	852,690	84
2004	1,959,778						
TOTAL	**6,625,228**	**7,927,162**	**1556741**	**9,483,903**	**7,074,472**	**2,409,431**	

(Note: the expenditure for the year of 2004was not available, hence not included in the table above)

3.2.9. IMPLEMENTATION RESULT FLOW CHART

In the following pages or table 3 the *Gantt flow-chart* has been presented to show the main activities planned and achieved for Phase I. In the same chart the planned and actual starting and completion sates have been compared to establish delays of implementation. The revised time and the plan and achievement in physical term have been also given.

Table 3. Gantt flow-chart: components, activities and results, starting and completing dates (2000-2004)

COMPONENT	ACTIVITY	Unit	2000				2001				2002				2003				2004				Total physical	TRT	Status % completed
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
RANGE	Range land development																								
	Purchase of grass seed																								
		Qui								30				40				30				100	200	0	112
										30				40				73				80	**223**		
	Land ploughing																								
		ha						300				400				700				1000				2400	0	79
								32				450				470				930			1882		
	Making enclosures																								
		ha							300														300	0	11
(A) RANGE									32														32		
AND	Re-seeding range lands																								
WATER		ha							300				400				700					1000	2400	0	79
									32				450				470					930	1882		
WATER	Water well development																								
	Drilling boreholes																								
		nos	2					1						1				1		1		1	3	(+) 7	67
			0					0						1				1		1		1	3		
	Water pump installation																								
		nos				2				1					1							1	3	0	67
						0				0					1							1	2		
	Reservoir, water trough generator house																								
		nos	2					1				1				1				1			3	(+) 7	34
			0					0				1				0				1			2		
	Construction of ponds																								
		nos																3					3	0	100
																		3					3		
(B) VETERINARY	Veterinary service																								
	Top up the revolving fund,drugs																								
		Nakfa									30,000				100,000				187,000				317,000	(+) 6	91
											0					100,000				187,000			287,000		
	Construction of vet. Clinic																								
		nos										1											1	(+) 2	100
														1									1		

Planned staring and completion dates **RT: Revised Time** **TRT: Total revised Time**

Actual starting and completion dates

Table 3. Conti.

COMPONENT	ACTIVITY	Unit	2000				2001				2002				2003				2004				Total physical	TRT	Status % completed
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
(C) HUMANITARIAN AID	Emergency humanitarian food assistance																								
		Qui			0																		0		
					2725																		2725		
(D) POULTRY	Selection of beneficiaries																								
		nos					150				25				200				130				505	(+) 10	114
									146					25				**200**			204		575		
	Construction of poultry house																								
		nos						150				25				200				130			505	(+) 4	115
													175					200			**204**		579		
	Purchase and distribution of feed																								
		Qui						300				50				400				260			1010	(+) 6	94
									292					50				300			308		950		
	Purchase and distribution of feeders and waterers																								
		nos	**200**				**200**																400	(+) 5	50
			0					200															200		
	Distribution of pullets																								
		nos						3500				650				4000				2600			10750	(+) 6	102
									3200					625				3500			3600		10925		
	Purchase of day old chicks																								
		nos	1500					3500					650			4000				2600			12250	(+) 9	99
			0						3500					650				4000			4000		12150		
(E) DAIRY GOAT												.													
	Selection of beneficiaries	nos																							
												60				669				240			969	(+) 6	91
													30	30			333	336			100	50	879		
	Purchase of dairy goats	nos																							
												300					3345				1200		4845	(+) 2	94
												420						3345				750	4512		
(F) DONKEY	Selection of beneficiaries	nos																							
																220				40			260	(+) 3	100
																	220					40	260		
(G) CAMEL	Selection of beneficiaries	nos																							
																20					30		50	(+) 2	40
																	20					0	20		

Planned staring and completion dates **RT: Revised Time** **TRT: Total revised Time**

Actual starting and completion dates

Table 3. Conti.

COMPONENT	ACTIVITY	Unit	2000				2001				2002				2003				2004				Total physical	TRT (Q)	Status % completed
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
(H) INST. CAPACITY	Training																								
	MOA staff																								
	Poultry																								
		nos					1																1	(+) 2	100
									1														1		
	range KARI																								
		nos												3				3				3	9		100
														3				3				3	9		
	Planning , M&E																								
		nos		1							8				20								29	(+) 1	107
					1						8				22								31		
	Financial management admin.																								
		nos	1				5																6		100
			1				5																6		
	Computer application																								
		nos	1																				1	(+) 1	100
				1																			1		
	Farmers:																								
	Dry feed and range management																								
		nos						100				**60**				**60**							220		113
		nos						**99**				60				90							249		
	Back yard poultry management																								
		nos	100					150				25				200				130			605	(+) 7	95
			0					146				25						200			204		575		
	Dairy goat																								
		nos										60				30				240			330	(+) 4	18
												60						0				0	60		
	Recruitment																								
	Project manager																								
		nos	1				1																2	(+) 20	0
			0				0																0		
	Finance head																								
		nos	1																				1		100
			1																				1		

Planned staring and completion dates

Actual starting and completion dates

RT: Revised Time **TRT: Total revised Time**

Table 3. Conti.

COMPONENT	ACTIVITY	Unit	2000				2001				2002				2003				2004				Total physical	TRT	Status % completed
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
	Computer operator																								
		nos	1																				1	0	100
			1																				1		
	Driver																								
		nos					1																1	0	100
							1																1		
	Animal health technician																								
		nos									1				1								2	(+) 4	50
											0				1								1		
	Veterinary assistant																								
		nos									1				1								2	(=) 12	0
											0				0								0		
	Infrastructure equipment																								
	Women hall/office																								
		nos		1				1															2	(+) 5	50
				0						1													1		
	Office equipment																								
	Computer et. accessories																								
		nos					1																1	(+) 2	100
									1														1		
	Vehicle																								
		nos	1																				1	(+) 3	100
						1																	1		
	Office furniture																								
		lumpsum	1				1				1												3	(+) 5	100
					1				1			1											3		
	Stationery																								
		lumpsum																					Every year		
																							Every year		

Planned staring and completion dates

Actual starting and completion dates

RT: Revised Time **TRT: Total revised Time**

3.3. RELEVANCE

3.3.1. DAIRY GOAT COMPONENT

The high importance of the component was reflected by both men and women headed households in the project area during the discussions made for the project evaluation. Although the involved households are earning a limited amount of cash income by selling goats for meat the justification was more nutritional than income making. Its significance as cash source is yet to be achieved. The common food type used in the project area is porridge and milk is used as the only relish. The goat is the most suitable source of cash in the project area as the kids are ready for sale within less than a year of age and goats are the most efficient in converting feed of low quality and they are very prolific if conditions permit (e.g. nutrition, health). The dairy goat component was unable to demonstrate its relevance fully to the beneficiaries at this stage because the package design was inadequate technically and economically to permit more financial returns. However the relevance of the goat component to the beneficiaries was very high as compared to poultry. The component is quite viable provided that the flock is of economic size (Annex 8) and that its management is slightly improved.

3.3.2. POULTRY COMPONENT

The component is very relevant to the beneficiaries and in particular to the female headed households. It has become a significant source of cash income and protein nutrients of high biological value to the involved family members and in particular to the children and pregnant/lactating women. It is also increasing protein food supply availability to the population in the project area. This is an important contribution in an area with high prevalence of child malnutrition of the PEM type.

The component is contributing to the priority needs of the poor in the project area and it is in compliance with the social, and economic policy of the country to improve the livelihood and gender equity of the rural populations. This fact has been strongly reflected by the women beneficiaries and their husbands. Almost all the women, including many men, have stated that "*the Poultry Component through this project has changed the life of the beneficiaries in such a short time*". This is well supported by the indicative financial results of the backyard poultry in the project area made in this evaluation report. This was further supported by the expression of women on the role of poultry on social and household economies. This component has influenced to achieve good results on the social and economic aspects. The women are able to have their own cash and food and empowerment through input and output owning and marketing. The issue that remains now to be addressed is

sustainability which includes many factors such as economic poultry ration, chick supply , market, flock management and housing. This component has become significant in such a short time and most importantly in a society that never acknowledged the importance of poultry and the value of poultry products as food. The relevance of the component is significant from both the short and long term objectives.

3.3.3. DONKEY COMPONENT

In the project area, water supply availability for both domestic and livestock uses was extremely low. Women have to travel for long distances to fetch water by carrying on their backs. This is a very hard work for women especially in such an area with hot climate. The result was stress on women and less water consumption at household level with negative health impacts. The component is highly relevant for women as the work stress has been removed. It is also relevant to the household by having ample water supply at all times with positive impact on health. The daily water consumption was increased from about 20 liters to 80 liters. The objective of the component is in compliance with the national policy on social issues such as safe water supply, women welfare and health.

3.3.4. RANGELAND COMPONENT

The population in the project area were very aware of the importance of the range component due to the high priority they give to livestock. They are also aware of the deteriorating rangelands lands and their incapacity to support livestock production. In the project area which is featured with low annual rainfall and of high unreliability, shortage of feed supply is a major constraint for livestock production. During the dry season which lasts 7-8 months in average rainfall years and during drought years the concern of the farmer is livestock survival and not production. In drought years, considerable number of livestock die annually due to lack of feed and water. Livestock utilize large areas of poor grazingland usually with natural water points dug on the main river beds; hence extensive seasonal movement is involved in search of water and feed. It has also to be reckoned that livestock constitute the main source of livelihood of the population in the project area, but it is unable to sustain their livelihood. As a sequel to this, the levels of food insecurity and poverty are high. In effect, the main criterium to determine the level of poverty in a community is livestock ownership (Annex 13). The community at Adi-Ibrihim represented by a group of 10 key informants have given the following ranking order: *water, range, livestock*. Their logic was simple in that without the first element, the second can not exist and without the second the third can not be realized in the absence of the last, the

livelihood is disturbed. This priority has been expressed by almost all groups of farmers in the four Village Kebabis studied (Annex 11). The justification of the component was based within this context.

It is of high priority because the potential to improve the livelihood of the population by increasing livestock productivity and production through improved nutrition is high. The objective is in agreement with the priority needs of the rural community and the government policy on food security and poverty. The component also has social impact because it reduces or may totally stop transhumance which will permit more effective social services.

3.3.5. WATER COMPONENT

Provision of water supply source for human and livestock consumption and hygiene is undoubtedly of the highest priority in the project area which is of low rainfall and hot arid climate. Water supply availability has been always in acute shortage and its safety was low. Livestock also suffer from shortage of water and grazing is limited to the areas located near the water points. The component was conceived within this context where water is of priority need. The use of the DF resources was quite appropriate as it was in compliance with the aspirations of the poor communities and the national policy on rural development strategy where water for domestic and livestock is of top priority.

3.3.6. VETERINARY SERVICE COMPONENT

Animal diseases and parasites and metabolic disorders, often forming synergism with the high prevalence of animal malnutrition, are important factors in limiting animal productive and reproductive efficiency. Disease play a major role in reducing the incomes of the communities from livestock source. The component was included in the project within this context. It is of priority to the community to improve their livelihood through improved animal production and it is in compliance with government policy on rural development. The communities expressed their need of the veterinary service and their complaint was that it was inadequate.

3.3.7. INSTITUTIONAL CAPACITY

The capacity of the MOA-GB is low in both personnel and material resources to be able to plan, implement, control and monitor its activities effectively and efficiently. This results into poor performance in management and service quality to farmers. In respect to manpower, the poor capacity is expressed by inadequate types and numbers of personnel available, but in particular by the

insufficient experience and qualifications of the available staff. Implementation of a project under this condition would be inefficient and the overall services rendered by the MoA-GB to the farmers would be of poor quality affecting the performance of the agricultural sector. The implementation capacity at the project and community levels is also inadequate. The rationale of the component is to improve performance of the institution through training and recruiting personnel for the project. This was also by upgrading office and transport services through provision of equipment and facilities. This will benefit the project in the short-term and the farmers through improved quality of agricultural services as well as sustainability in the long-term. Capacity building is of the highest priority needs of the MoA-GB, the project implementation organization and the community so as to be able to improve performance rate and to ensure sustainability. The financial support of the DF to this component was of high significance because the low absorption capacity of the MoA-GB is the most important single factor hindering agricultural performance in that region.

3.4. EFFECTIVENESS

3.4.1. DAIRY GOAT COMPONENT

In respect of achieving its objective of improved household nutrition, it is expressed by the increased food intake or more appetite; and increased protein nutrients in the diet which is of high biological value (quality). The effectiveness of the component at the time of evaluation was reasonably satisfactory. Achievement of the second objective of increased household income by selling meat goats was only partial. Some beneficiary households have been selling goats, to meet emergency cash demands but the magnitude was small. The component was, at the time of evaluation, in the process of achieving its objectives. The factors such as productive and reproductive capacity of the flock was not improved as compared to the traditional system so as to influence milk yield, total milk production per annum; and growth rate to increase meat production. The initial breeding flock provided to each household was too small and its growth rate was also slow (Annex 12). The anticipated objective of the component at the time of evaluation was to improve nutrition of the beneficiary households mainly through milk and to some extent through meat; while gaining cash through meat.

3.4.2. POULTRY COMPONENT

The anticipated specific objectives of the Poultry Component at this stage of project management cycle or project evaluation time were satisfactorily achieved. The anticipated objectives were: to make that poultry production practice and consumption of poultry products are accepted by the community; to increase the incomes and protein source food supply of the involved households. It was also expected

that it improves the gender equity in managing household economy and to have a social impact on women through more exposure by traveling for purposes of marketing poultry inputs and outputs. This is a long term impact on women participation in areas that were restricted to men. The indicators of achieving its objectives include the high number of women maintaining the poultry flock provided by the component; their daily egg production; the amount of cash that they are earning by selling poultry products; and the increased inclusion of poultry meat and egg in their diets.

The component has achieved its immediate objectives, anticipated for Phase I, as compared to the planned. Most of the involved women beneficiaries in the project area were operating their flocks and poultry products such as eggs as well as poultry meat were being produced as outcomes. Most importantly, they have been convinced that backyard poultry is an important source of cash income and protein food to the household and a means of economic freedom from the husbands. Prior to this project, poultry production and consumption of poultry products were not known in the community. Many women in the project area who are not beneficiaries of the component are requesting to be involved. The factors that influenced the component to achieve its specific objectives were likely to be many. The most important was the ability of the project stakeholders to prepare the community members and in particular women and the quick turnover of poultry.

3.4.3. DONKEY COMPONENT

The component has achieved its immediate objectives. The women beneficiaries have been relieved from the hard work of carrying water on their backs for long distances reaching 7 km or beyond. In addition to this, the objective to have a means of transport for family members and their goods. It has contributed by saving the cost of bus fares (usually 20-30 Nfa/person/trip) to visit markets. Some of them have produced extra donkeys for sale, replacement, or use for generating income by hauling water and other materials. In this way, some level of cash was also being earned. The objectives that were expected to be achieved at the time of evaluation were to increase water supply availability in the house and save women from stress and loss of time.

3.4.4. RANGELAND COMPONENT

The specific objective of the component to increase livestock productivity and total production through improved nutrition or feed and water supply availability throughout the year has not been fully achieved although it is moving towards it. It was anticipated that, at the time of evaluation, the objective be achieved in at least the ranges at Adi-Ibrihim/Bisha and Mogoraib Village Kebabis so that

the lesson learned can be used in the remaining project sites. The fenced grassland that has been developed at Mogoraib site, which is very small (30 ha), was designed for cut-and-carry use and the expected objective has been reasonably achieved. In Adi-Ibrihim the objectives of the range component were in the process of being achieved. At Jimel, implementation of activities has not been completed and no output has been produced. Thus, the objective has not been achieved. At Giriginai and Tekreret the activities did not even start. The factors that influenced achievement include lack of institutional coordination, and low capacity at project implementation level; drought and inadequate technology, although these vary by site.

3.4.5. WATER COMPONENT

At the time of evaluation, the component has been at some stage of achieving its objectives of supplying safe water to the people and livestock in four sites of the project area throughout the year. The objectives expected to be achieved at this stage were to supply clean water from borehole to three Village Kebabi Administration (Bisha/Adi-Ibrihim, Jimel and Giriginai) and that water management is established and to supply water to livestock from three ponds located in Tekreret, Jimel and Girginai, respectively. At Bisha/Adi-Ibrihim, the objective has been achieved, while at Jimel it has been almost achieved because the remaining outputs of equipment installation and setting water management system are being completed. At Girginai the objective has not been achieved. In respect to water supply from ponds, the objective has been achieved.

3.4.6. VETERINARY SERVICE COMPONENT

The specific objective anticipated to be achieved at the time of evaluation was to introduce improved animal health services in the project area. The objective was only in the process of being achieved because the outputs have not been produced only partially. The buildings, equipment, water supply, fencing and personnel have not been adequately prepared to allow the desired functions. The quality of the buildings and services was not meeting the required standards to carry-out disease investigation; the equipment have not been installed and the personnel were not adequately trained.

3.4.7. INSTITUTIONAL CAPACITY

The specific objectives of the component anticipated to be achieved at the time of evaluation were to improve management and monitoring efficiency and to upgrade the technical performance of the Regional-MoA-GB at both the headquarters and Sub-zones and at project level. It was also anticipated that the CBOs improve their capacity in managing their resources and to improve performance of

individual project beneficiaries. The objectives have been achieved at the MoA-GB headquarters; but at the project implementation level it was not achieved. At community level, achievement of objectives was in the process. The project implementing unit was not provided with adequate organization, structure and technical and management personnel. This has slowed implementation rate and production of outputs.

3.5. EFFICIENCY

3.5.1. DAIRY GOAT COMPONENT

The progress of the component compared to plans, at the time of evaluation, was satisfactory. The utilization of resources and costs were also as planned. The achievement of results in relation to the utilization of the allocated resources was reasonable except in some cases where some of the goats procured were not suitable due to disease. The allocated budget was not adequate to procure sustainable size of flock as compared to the expected level of benefit and growth rate. the benefit from milk was achieved but not the anticipate level of cash income. Implementation was affected by excessive delays in procurement. The actual costs of goats were much more higher than the planned resulting into purchasing fewer or less suitable breeding goats for each household. The institutions responsible for assisting the beneficiaries in procurement of goats through a local committee had good cooperation. The number of initial breeding goats should have been higher to make the component financially feasible. This will allow to produce enough number of kids to grow and sell for meat. The focus should not be only on milk, but also on cash income by selling meat.

3.5.2. POULTRY COMPONENT

In this component, progress was achieved approximately as planned. Institutionally, the stakeholders involved had adequate cooperation. The costs and resources utilization of the component were not always as planned. In some activities such as procurement of chicks and distribution of pullets implementation delays have caused increase in costs. Chick mortalities up to the age of two months rearing period by the MoA were moderate (10%) given the inadequate facilities and unfavourable local conditions. The cost of some inputs such as the feed was rather expensive for its nutritive value to poultry. This was because of the high initial cost of imported feeding-stuff and high transport costs from as far as Asmara. Its supply availability was usually inconsistent which is a major issue of sustainability. The poultry housing was not also to the direct standard for the purposes it was designed. This was due to inadequate functional design and construction skills. In general, the achievement of results in relation to the utilization of resources was satisfactory. The performance of the DF, Norway was satisfactory as measured by the level of benefits being gained and by the high number of

successful beneficiaries. The level of benefits growth rate was satisfactory as compared with the expectations. The flock sizes owned by the beneficiaries were in many instances quite large (e.g. 40 layer birds/household) compared to expectation. This directly correspond to the level of income generated by household.

3.5.3. DONKEY COMPONENT

The progress in this component was achieved as planned, and cost increase due to implementation delays was not experienced. However, the cost per donkey was progressively increasing due to the high inflation rates in the country. The costs; the utilization of the resources provided by the DF, Norway and the achieved results were as per expectations. The benefits being gained by the involved households were adequate as compared to the costs incurred for purchasing the donkeys.

3.5.4. RANGELAND COMPONENT

The progress of the component as compared to the planned varied by sites from 100 % to 0 %. The activities planned were to develop rangeland (land preparation, reseeding, closing from grazing) in the five project sites. Implementation level was relatively higher at Mogoraib, and Bisha/Adi-Ibrihim; and it was initial at Jimel, and little or nothing at Girginai and Tekreret. The result was not as anticipated. Inputs were mobilized for Bisha/Adi-Ibrihim and Jimel but output production (feed) was inadequate, hence the planned achievement of results in relation to resource utilization were not as expected. The institutional efficiency was not enough probably due to poor community mobilization. The utilization of the rangeland was satisfactory in Bisha/Adi-Ibrihim where CBOs were controlling grazing, but the benefit obtained was however inadequate as compared with the costs. The project was paying the salary of guards because the component was unable to recover recurrent costs through grazing fees. During 2004, the cost on seed, reseeding and land preparation at Adi-Ibrihim and Jimel were high as compared with the result. The main cause was drought, that was attributable for the failure in 2004 *but how about the low yield in 2003*? This implies that there were other causes and these were mostly technical..

3.5.5. WATER COMPONENT

In this component, progress made as compared to the planned vaied by site. In respect to ponds, progress was as planned; while in the borehole wells progress was not as planned. At *Bisha/Adi-Ibrihim and Jimel,* progress was as planned, but at Girginai it was not. Implementation delays have been experienced at Jimel although costs did not change significantly. The well did not start to give service at the time of evaluation. The Girginai well was drilled but the water yield was too low (1 liter/second) and due to this it was not equipped and it was not in use at the time of evaluation. In this case, the result in relation to resource utilization was not achieved as planned. The alternative being considered for the utilization of the Girginai well was to use hand-pump instead of submersible pump. There was also concern in the quality of works regarding the reservoir, drainage, water troughs and taps at the Bisha/Adi-ibrihim well and this was also in relation to hygiene.

The CBO for water management has been established for Bisha/Adi-Ibrihim water well where the committee, setting of fee collection of fee and operating bank account were operational, while in other sites the CBOs have not been effectively established. The utilization rates of the completed water points (Bisha well, and the 3 ponds) were satisfactory and the benefits were adequate compared with the costs (Table 5 and 6). The well at Bisha/Adi-Ibrihim was recovering costs (Table 4). The following are the water fees; financial statement and bank account reported by the Water Committee at Bisha/Adi-Ibrihim.

Table 4. Water Fee, and Cash Flow, Bisha/Adi-Ibrihim

	Value (Nfa)
(a) Water fee	
User	**Price (Nfa)**
Human	0.10/per 20 litre
Camel	0.30
Cattle	0.20
Sheep/goat	0.10
(b) Financial statement of the Water Committee as per October 1; 2004	
CASH INFLOW	
• Fee	14,570.86
CASH OUTFLOW	
• Oil diesel	3,684.80
• Maintenance and repair	581.00
• Salary for technician	4,050.00
• **TOTAL CASH OUTFLOW**	**8,315.86**
• **NET CASH FLOW**	62255.00

(c) Water Account

This financial report given above covers the period from march 2004 to October 2004. The bank account is Bisha Water point Nr. 362, Commercial Bank of Eritrea, Agordat.

Water Committee

The water Committee at Adi-Ibrihim started to collect fees from March 2004 which was 6 months after the well started to give services. The grace period was granted to allow users to be familiar with such sources of water (borehole). The committee has 4 members of which one was female. The committee has assigned a technician to for water equipment work on part-time basis and payment was made from the community funds.

Table 5. Number of animals using the project well daily at Bisha/Adi-Ibrihim.

Animal species	**Animal (nos)**
Camel	770
Donkey	3000
Shoats	325
Camel	40

Table 6. Number of animals using the project ponds daily by site

Animal species	**Village Kebabi Administration and animal number**		
	Tekreret	**Jimel**	**Girginay**
Camel	50	20	75
Donkey	145	210	180
Shoats	1435	1200	1800
Camel	150-200	145	18

3.5.6. VETERINARY SERVICE COMPONENT

Progress in this component was delayed as compared to the planned. Achievements of results in relation to resource utilization were not to the expectations because the outputs (buildings, equipment) were not satisfactorily completed. The equipment and furniture for the stations have been procured but they were still stored at Barentu. Essential services such as water power, fence were not in place. Efficiency in disease diagnosis and safe storage of perishable products cannot be achieved. The facilities were utilized but the present service delivery system, the communications, and the service delivery program were not organized adequately to allow efficient access to all farmers in the project

area and in particular to those that are far from the stations. Beneficiaries have to travel long distances to come to the station for service.

3.5.7. INSTITUTIONAL CAPACITY

Progress was generally as planned except at project level. The activity in providing infrastructure (equipment, buildings etc.) was implemented as planned. The activities in training the MoA-GB staff have been implemented as planned without excessive delays. The recruitment and training of the project staff was not achieved as planned and the training of CBOs and farmers were implemented but with considerable delays (Annex 4). However achievement of results in relation to resource utilization was satisfactory at the MoA-GB headquarters and at community level. The costs and utilization of resources compared to plan were satisfactory. The utilization rates of the infrastructure and services were adequate compared to costs.

4. RESULTS, PROBLEMS AND IMPACT BY COMPONENT

4.1. POULTRY

Result

The results obtained at the end of phase I by implementing the component towards achieving the immediate objectives and long-term goals were satisfactory. Poultry production as an economic activity has been introduced successfully in spite of the fact that poultry keeping and eating poultry products were new concepts to the community in the project area. The component is generating substantial cash income and protein food to the households involved. About 605 women spread in 8 Villages Kebabis of the project area have received the poultry package and as an indicator of success in making positive impact, the number of women demanding to participate is increasing continuously. The income and food gained from the component are well spread throughout the year (almost daily) which is a very important element to the low income households. However, the magnitude of the result was too low to produce the desired impact.

The incomes of the beneficiary households from the component vary considerably. This is because some of them were more abled to keep relatively more layers than others. Few households were not benefiting because they failed to maintain the flock. Table 7 shows the range of poultry flock size being kept among the beneficiaries. The households who have completely failed to keep the flock (group 6) represent less than 5%. The households generating low cash returns from the component, but adequate to improve their diets constitute about 17%. The remaining 78% of the total households are earning moderate to good incomes and food from the component. It is also important to observe that the most successful beneficiaries among the 8 Villages Krbabis was Adi-Ibrihim where about 30% of the total (group 8) were in that village. This result was because it was started in that village.

The level of annual financial returns from different flock was roughly estimated by discussing with a group of 5 women beneficiaries in each of the 4 Village Kebabis studied.

Each of the successful beneficiary Households consume an average of 1-3 eggs per day and this has improved protein deficiency among children and women under special physiological state.

Problems

There were a number of problems encountered by the component during implementation and flock consolidation process of which some are important factors to achieve its sustainability. The main problems include economic feed source; chick supply, housing, initial support, management and

marketing. Poultry, being monogastric animals, do not consume feeds with high fiber content and are unable to efficiently synthesize vitamins and amino acids from feed in their bodies. As a result, they need high levels of starch content in their rations and they are sensitive to nutrient deficiencies such as to most of the essential amino acids. Their productive efficiency is highly dependent on the diet fed to them.

The commercial feed supply available at Asmara was very expensive for the location and poultry production system in the project area. The initial and transport costs were high, and most importantly, its availability was inconsistent.. The beneficiaries were feeding sorghum/wheat cereal grain as the base ingredient in addition to scavenging. Some amounts of food left-over from the household and such as waste vegetables were fed but the latter was rare. From this, it becomes obvious that the poultry ration being used was inadequate to enable egg production at a reasonable yield level and economic growth rate. It was also recognized that cereal grain was expensive where poultry and people were in direct competition for starch food.

The chick supply availability for replacement was not established. At present the beneficiaries are using 2-3 local hens for the traditional egg brooding where the fertility and hatchability results were satisfactory. About 20 eggs, uncontrolled for fertility and embryo development, are brood by each hen and the average hatchability rate was about 16 eggs hatched or 80% which is quite high as compared to that of incubators. The problem in this was that many of the beneficiaries had to sell at least two of the hens received from the component to purchase local hens for brooding function thus immediately reducing the economic size of the flock. To this were added the losses through diseases and predators or sales due to urgent problems thereby reducing the flock further to an unviable size. Related to this was also that the component procures day-old chicks from Egypt each time that it plans to expand the component. This practice was unreliable causing excessive delays and mortalities and it was rather expensive and demands forex supply.

The housing design for poultry was a problem because it was not appropriate. Considerable losses of chicks have been incurred due to this as access to predators such as volchers, snakes and wild cats had been easy.

Marketing of eggs and poultry meat was a problem and the cause was lack of marketing organization. The main market place in the project area was Agordat town but transport cost is expensive for the individual farmer to take her products to this market where it cosnts in the rage of (Nfa) 20 to 30/per single trip. At Adi-Ibrihim, a certain lady had started to collect eggs at an interval of about a week and

sell them at Agordat. However the system was not functioning efficiently and at times eggs were spoiled before selling due to the excessive storage heat at the production site. This was a great economic loss to the beneficiaries. The price per raw egg weighing about 40 (g), at Adi-Ibrihim was also low too (Nfa 0.5) and if boiled (Nfa 0.75); while the price at Agordat was > 1.0 Nfa per egg.

The beneficiary women did not acquire adequate knowledge on poultry flock management including disease prevention/control, rationing and feeding system and chick rearing. The cause was lack of adequate training of the involved women. Some of the beneficiaries have sold many of the received hens before the time of reaching egg laying point. The cause for the sale was to meet urgent needs such food or to buy medicine when family members become suddenly sick. The underlying cause was the extreme poverty where they could not wait for 3-4 months to allow the hens to lay eggs.

Impact

The component is contributing towards the project goals of achieving food security and nutrition and the long-term goal of poverty reduction. The extent to which this contribution was made varied among the various households and goals. An indicator of improving the living standards of at least some beneficiary households, was that many of the women beneficiaries had enough cash to purchase items such as beds, improved household utensils, ornaments including gold and pay tractor fee for ploughing land. It is assumed that these items can be purchased only after the needs on the essential commodities were satisfied. There was also unexpected positive impacts on women such as social behaviors and household economic empowerment. Traditionally, women in the project area were always in the house waiting for the husband to bring them essential commodities including food, but through the component women have started to freely move to markets and decide to purchase or sell independent of the decision of the husband. In some instances the situation has been reversed where husbands have started to request cash from their wives.

Table 7. The range of poultry flock sizes kept by household groups among beneficiaries in 8 Village Kebais of the Project Area

Group	Present poultry flock size per household	Number of beneficiary households by Village Kebabi								Total	% of total
		Mogoraib	Adi-Ibrihim	Jimel	Girjinai	Tekreret	Adi-Shekalamin	Lococh	Keru		
1	**≥ 20**	3	40	2	8	11	3	1	3	71	12
2	**15-19**	34	45	24	13	16	30	3	2	167	28
3	**10-14**	60	62	35	16	45	5	3	3	229	38
4	**5-9**	14	26	7	8	16	6	2	2	81	13
5	**1-4**	5	9	4	2	6	-	1	-	27	4
	None (0)	12	8	-	3	5	1	1	-	30	5
	Totals	**128**	**190**	**72**	**50**	**99**	**45**	**11**	**10**	**605**	**100**
	% of total	**21**	**32**	**12**	**8**	**16**	**7**	**2**	**2**	**-**	**100**

4.2. DAIRY GOAT

Result

The result of the component showed that it was in the process of achieving its specific objectives of increasing incomes and improving nutrition at the household level. Thus, it is contributing towards the project goals although the extent was modest at this stage. This component has the highest priority among women and men in the project area as compared to the other components such as poultry. This was mainly because its outcomes of milk and meat constitute essential parts of their diets and in particular milk. Traditionally, it is the most important source of cash because in a flock there will be always a potential off-take in times of cash shortage provided that it is of economic size. Many of the beneficiaries of the component were struggling to keep a sustainable flock starting from uneconomic size provided by the project. Table 8 shows the range of flock sizes by group of households in the Village Kebabis of the project area. From the total 792 households who were beneficiaries, the households that have lost the goats (*group 5*) represented only 1.5% of the total as compared to the poultry beneficiaries making 5 %. Those beneficiaries who still maintain a reasonable size of goat flock (*groups 1; 2; and 3*) were about 98.5 %; while those who are keeping approximately the same flock size that was provided (*group 3*) by the component were 54 %. The group that keeps the smallest size (group 4) represents only 7.5 % of the total number of households. About 67 % of the total

households in the project area benefiting from the component who lost the flock were in Girginai followed by Jimel (17 %) and Adi-Ibrihim and Adi-Shek (8 % each).

Problems

The main problems of the component during implementation were increased prices of goats which was higher than the budget allocated for each household and delays in procurement. In respect to the strategy design, the problems were low productivity, high costs of herding and uneconomic flock size. The cause for the low productivity was the production model used because it was the same to the traditional model without any improvement in nutrition and management. Under such conditions the productive and reproductive efficiencies remained low. The low reproductive efficiency was the main cause for low off-take which resulted into poor cash income. For instance, kidding interval remained to be one year as it was closely associated with the availability of feed supply of adequate quality and quantity. Once a doe misses one breeding season it has to wait for one year. The cause for the high herding cost (Nfa 5/goat/month) was lack of labour, and the tradition in the project area which does not permit women to herd animals.

Impact

The rate at which speed the component is contributing towards the project goals of achieving food security and overall improvement of living standards of the beneficiaries was slow but significant. An attempt was made to estimate the annual financial results of an average flock size kept by a household among the beneficiaries and the indicative value is given in Table 8**.**

Table 8. The ranges of dairy goat flock sizes among beneficiaries by household groups and by Village Kebabi in the Project Area

Present goat flock size per household (nos)	Village Kebabi Administration Centre and Number of beneficiaries by site and group										Total	% of total
	Hawashit	Afhimbol	Mogoraib	Adi-Ibrahim	Jimel	Girjinai	Tekrert	Adi-Shekalamin	Lococh	Keru		
≥ 9	-	-	1	5	2	5	6	3	2	1	25	3.1
6-8	8	24	35	36	33	30	29	40	17	16	268	33.8
3-5	19	33	77	54	46	52	49	49	20	28	427	54
1-2	3	-	12	8	7	13	11	1	3	2	60	7.6
None (0)	-	-	-	1	2	8	-	1	-	-	12	1.5
Totals	**30**	**57**	**125**	**104**	**90**	**108**	**95**	**94**	**42**	**47**	**792**	**100**
% of total	**3.8**	**7.2**	**15.8**	**13.1**	**11.4**	**13.6**	**12**	**11.8**	**5.3**	**6**	**100**	

The component has in most of the beneficiaries, achieved its immediate objectives and this is contributing toward the goal of attaining food security and nutrition at household level and long-term goals such as poverty reduction. The way it contributed was that the beneficiaries sell most of the young males to earn cash and through this they purchase essential commodities, household utensils, pay tractor fee and for any emergency situation that may require cash payment. As it was reported by the beneficiaries, child diets have improved considerably through the outcomes of the component and this has produced a positive impact on their health with a long-term goal of human capital development in rural areas. However, the magnitude or extent of contribution made by the component at the time of evaluation was very limited in both depth and width because in this phase, the component was being implemented on a pilot scale and for learning on the viability of the strategy. This was also because the strategy design was obviously inadequate where the flock size was too small to produce enough off-take and milk hence the limited extent of contribution towards the goal. It was also due to the fact that the package consisted of only breeding goats and no other elements such as nutrition were included to improve the productive and reproductive efficiency.

4.3. VETERINARY SERVICES

Results

The need of the component is high priority because disease is a major factor in limiting livestock productivity in the project area. Although it was not easy to measure the effectiveness and efficiency of the component due to lack of data, it appears that the component was only on the way to achieve its objectives. The result was that access of the farmer to the service and the quality of service were inadequate to enable the component to improve the poor animal health situation in the project area in concrete terms.

Problems

At the time of evaluation the required outputs have not been fully produced. These include the diagnostic facility, equipment, personnel and service delivery and disease monitoring systems. It has not been provided with the minimum requirements (water, finishings of buildings, equipment and skilled personnel) to produce the expected results.

Impact

The component has not yet contributed sufficiently towards the project goals at the time of evaluation because it should be able first to achieve its specific objectives. This would contribute towards lowering economic losses through the direct loss (mortality) and indirectly (low productive and reproductive efficiency).

4.4. RANGELAND

The specific objective of the Range Component was to increase livestock productivity through improved nutrition including water which is also a nutrient, and to eliminate the extensive animal movement by providing water and feed enough for the whole year.

Result

The various sites of the Range Component that were under implementation in the project area were at different stages of implementation at the time of evaluation. The Mogoraib site has achieved its objective and feed was being produced for cut-and-carry use. It was not possible to obtain conclusive forage yield results due to lack of records on site. However based on the records of the MoA (2003) forage productivity per unit area has been estimated to be about 3.3 tonnes (DM) per hectare per annum. However, this figure represented only the forage that was selectively harvested as good feed; while almost the same quantity of plant growth was discarded as useless for feeding animals. Thus, the total biomas produced /ha was estimated to be about 6 tonnes (DM)/ha per annum. Based on the result of the year 2003 the potential production was quite significant as compared to the productivity of the unimproved rangeland in the project area which ranges between 0.3 and 0.6 (t) DM/ha. Although no single experiment is valid, the result indicates an increase of 9 times and 1ha of improved pasture can support approximately 3 TLUs per annum.

The range at Bisha/Adi-Ibrihim was at an early stage of development at the time of evaluation. The result showed that the grass growth was satisfactory but growth was limited to the narrow strips along the earth embankments. This indicated that soil moisture content was the determinant factor considering that 2004 was a year of drought. There were no reliable forage yield records on site for the other years, but according to the farmers and senior project personnel, about 50 % of the rangeland area produced *adequate grass* during years of normal rainfall. The yield in 2003 was estimated at about 1.3 (t)/ha against the 2.2 (t)/ha anticipated at this time of its development. This was about 59 % of the planned result and it was equivalent to the feed requirement of about 650 TLU. This result

agrees with the report of the Grazing Committee which stated that in the year of 2003 about 700 heads of cattle remained at Bisha/Adi-Ibrihim throughout the year feeding on the improved rangeland instead of going to Gash.

The range at Jimel was, at the time of evaluation, at its initial phase of development. Although an attempt was made in 2004 to develop about 500 ha out of the total 1500 ha planned, it had failed due to the severe drought experienced. The planned range site development at Girjinai and Tekreret did not achieve their objectives at the time of evaluation because they were not implemented.

Problems

The problems encountered during implementation vary by site, but in general they were mainly institutional and technical. The main cause for the institutional problem was the inadequate capacity of the project implementing unit. The underlying causes were inadequate personnel; inefficient planning of the operational organization and monitoring. The few staff members who are available at project level had too many duties to be carried-out at the same time and some activities (e.g. river diversion for cropping) were of higher priority to the MoA-GB office. The technical problem was due to lack of appropriate techniques applied in run-off water spread and soil moisture conservation. The plan on soil/water conservation activity on the rangeland was inadequate. The reasons for this were the long-process required to fully develop rangeland; the interference of drought; the inadequate strategy design and low investment.

Impact

The component has, at least in Mogoraib and Bisha/Adi-Ibrihim, contributed towards the long-term goals of improving food security and reducing poverty, but the extent of contribution was very limited to make significant impact. It has however produced positive impact by creating consciousness of the community on the importance of range development.

4.5. INSTITUTIONAL CAPACITY

Result

The component has achieved its specific objectives of strengthening the capacity of the MoA at Gash-Barka in the areas of management functions; range management and mobility in particular. The achievement of the objectives at community level was in progress and in the right direction at the time of evaluation. At the project implementation level, the component did not appear to have achieved its

objectives such as that of the rangeland. There was shortage of personnel, office equipment and organization to ensure effectiveness and efficiency.

Problems

The main problem of the component was, at the time of evaluation, not to be able to establish an efficient project management unit at project site such as Agordat. The cause for this was lack of definition of the project within the MoA-GB institutional framework. For example, it had no formal link with the Animal Resources Division and the organizational structure was weak.

Impact

According to the MoA-GB officials and the involved staff, the component had a positive impact towards management efficiency. It was also reported that it assisted the technical staff such as those of the rangeland to improve performance. However this was in contradiction with the results in the Range Component. This result is expected to contribute towards the goal of institutional capacity of MoA-GB. It is also likely to contribute towards the quality of the long-term goals of food security and poverty reduction of the rural population through efficient agricultural services. The reason for this is that the MoA-GB will be able to improve its capacity in data management, extension, planning, implementing, organization and controlling mechanism of projects and programmes so as to achieve their objectives and goals efficiently. At this stage, the degree of contribution achieved by the component towards the project goals cannot be adequate measured.

4.6. CAMEL

Result

The camel component has achieved its objectives of improving the incomes of the extremely poor male headed households directly and indirectly through enabling the beneficiaries to increase crop production, and to improve transport of family members and their materials.

Impact

The component was, at the time of evaluation, contributing to the project goals of improving food security and the living standards. The improved nutrition was through increased supply availability of energy source food or crops through ploughing. It was contributing also towards the project goal of poverty reduction by improving the welfare of the beneficiaries through increased income. The extent

of the contribution towards the project goals was very limited, but it was significant enough at household level (Annex 8).

4.7. DONKEY

The focus of this component was to improve women welfare by relieving the beneficiaries from the hard work of carrying water on their backs, facilitating transport and earning a limited amount of cash (Annex 8). The extent of contribution made by the component to the project goal was limited.

4.8. WATER COMPONENT

The component has achieved its objectives of providing safe adequate water supply to the population and livestock in most of the sites planned in the project area. It has made positive impact on the health of the population by reducing water born diseases and those caused due to unhygienic conditions and increased water supply availability for consumption. It had also reduced the movement of animals.

4.9 ENVIRONMENTAL AND COMMUNAL RESOURCES BASE

4.9.1 Environment

The project did not cause any negative impact on the environment. The environmental impact was quite positive. The activities of soil/water conservation and controlled grazing on the rangeland, the increased incomes and nutrition of the households were positive impacts to the environment. The water ponds for livestock contain water for only about 3-4 months in a year and they were sited far from residential areas. Their potential to be breeding sites of mosquito insects (biological vector of malaria) and snails of the *Lumnae* type (biological vector of *schistisomiasis*) was insignificant. This was supported by recent records on disease prevalence in the project area. The wells of which that of Bisha was operational at the time of evaluation, the hygiene of the water troughs and the reservoir was poor and inefficient drainage of excess water may pose potential negative environmental impact by contaminating potable water and becoming breeding site for insects. The project has also produced positive environmental impact on the communal resources because the communities have CBOs to manage such resources. These were due to faulty design and construction. These potential negative impacts can be easily mitigated by correcting the construction faults.

4.10 SPECIAL ISSUES

4.10.1 IMPACT OF PROJECT ON FOOD-AID

The project had positive impact on food security and nutrition through increased incomes and protein food supply availability among the project beneficiaries. Based on the estimated financial results of the income generating components the project should have a positive impact on reducing food-aid dependence of project beneficiaries. However, the data obtained on the food-aid situation and trends in the project area do not show clear indication on the impact made due to the project beneficiaries from food-aid. Table 9 shows the relationship among Food-Aid beneficiaries, and the project beneficiaries in the various Village Kebabi Administrative Centers. For example, the number of project beneficiaries were 1154 of which 132 were also under food-aid. This constitutes 59% of the total food-aid beneficiaries. In effect, the total population was under food-aid, while only 306 households were officially registered as beneficiaries. It was also important to distinguish among the project beneficiaries by component because they differ in their incomes generated by a component.

Table 9. Total Populations and HHs, HHs under Food-Aid, and households under project benefits by Village Kebabi in the Project Area

Parameter	Populations of Village Kababis in the project area						Total
	Adi-Ibrahim	Tekreret	Jimel	Girjinia	Adi-ShekAlamin	Lococh	
Total population	2922	3958	1947	2241	2124	2585	15777
Total households (HH)	614	1064	461	574	487	631	3831
Total HH under Food-Aid	306	550	265	275	248	312	1956
% HH under Food-Aid from total household	49.8	51.6	57.4	47.9	50.9	49.4	51
% Project Beneficiary HH of total under Food-Aid	43	16	37	27	27	11	59
Total project beneficiary HHs	318	191	214	187	162	82	1154
% of the project beneficiary households from total HHs	51	18	46	32.5	33	13	30

HH: Household

4.10.2. DROUGHT

During Phase I of the project implementation process, the project area was subjected to droughts in the years of 2002 and 2004, respectively. This factor has produced negative impact on the project as a

whole by reducing feed supply availability. This was because the range development component failed to grow adequate forage crop; less crop residue feed was produced for ruminant animals and less cereal grain for the poultry component were available.

This was a negative impact which had been slowing project implementation progress and the overall consolidation process of those already implemented. The ultimate impact was reduction of incomes of the project beneficiaries and destabilization of at least some of the components such as the rangeland and dairy goat.

5. OVERARCHING FACTORS

5.1 SUSTAINABILITY

At the time of evaluation, the project has started to produce positive impacts towards achieving the expected goals. The project is therefore anticipated to be sustainable provided that the models or components are given the opportunity of adequate time and commitments by the partners to be consolidated. One of the purposes of the evaluation was to examine the design of the project strategy and in particular the alternatives selected as the best and the assumptions that were taken as valid during project appraisal. To this affect, the factors that may influence the issue of sustainability concern are briefly highlighted on the basis of the findings of the evaluation study so as to assist the partners to make adjustments of the project strategy. The question on focus is "*will there be continued production of positive impacts due to the project following the time that the project funds are exhausted in the next five years ?*."

5.1.1 POULTRY COMPONENT

The main factors influencing sustainability of this component include economic feed supply availability; marketing system; day-old chick supply; and the capacity of the beneficiaries.

Poultry require rations that are balanced and with high levels of starch contents. This makes them expensive and feed accounts for about 80 % of the total production cost. However, poultry are also very efficient in feed conversion. The reason for the concern on feed was based on the fact that the supply availability of energy and protein source feedingstuff at economic prices is low in the project

area. The poultry feed distributed from Asmara was expensive, and most importantly, supply availability was inconsistent. Absence of continuous feed supply availability at economic prices may negatively influence the sustainability of the component.

The supply source of *day-old chick* is currently Egypt and if the component is to be expanded at a wider scale, continuous chick supply availability through import may pose a problem. At present, the technique of the traditional method of producing chicks by using local hen for brooding has not been adequately established in the project area. The system is simple but there were technical concerns such as feeding, chick rearing and protection from predators.

The *housing system* may have technical and economical concerns and most of the women beneficiaries had brought the issue at the time of evaluation that the loss of poultry due to this factor was high. The construction materials such as the corrugated iron sheets are not readily available in the project area and they were usually expensive.

The *egg marketing* system was not organized and it may influence economic sustainability. It was too expensive for individual beneficiaries to travel to sell few numbers of eggs to more profitable markets such as Agordat, because the bus fee was high and bus availability was inconsistent. Due to the absence of cooling system and high ambiental temperatures, eggs and those that are embryonated in particular are spoiled within a short time of storage. The low price at the production site (Nfa 0.5 per egg) and the difficulty of access to more profitable markets is a serious factor on financial economic sustainability of the component.

The poultry *flock management* (feeding, health, chick rearing etc.) capacity of the beneficiaries was not adequately established and it may affect sustainability.

Dairy goat

The factors that may influence sustainability of the component include flock size, feed, housing and management level. The uneconomic goat flock size being used as a production/economic model was of sustainability concern because it results into low level of total milk and meat production, hence less income. Shortage of adequate feed supply supplement will also influence financial results through poor productive and reproductive efficiency of the goats. The production model demands high labour input for herding because the system is extensive. This practice was expensive particularly when the flock is of small size.

Rang land

The issue of sustainability includes factors such as social support; institutional support; technical viability; droughts; and operational cost recovery or financial viability. These factors should be adequately examined during phase II planning.

Water

The factors that may influence sustainability issue are technical, institutional and financial. The borehole model has only one generator and pump set without emergency arrangements which is technically unsustainable. The pump operator has not adequate capacity to repair and service the equipment and the water fees may not be sufficient to cover the needs.

Veterinary Service

The factors that may affect sustainability include cost recovery on veterinary services and drugs; institutional support such as efficient management, organization and regulatory mechanisms.

Institutional capacity

The factors that influence sustainability include contribution of the staff trained towards the targeted services, because in the past, they were trained but they were not all in the place they were expected to serve. The selection process also need to consider this factor.

5.2. IMPACT ON GENDER

The project has correctly determined gender issues and it gave high priorities for potential development of women. The project design had included adequate components and operational means to enable women equal opportunities and to address gender related issues. Most of the income generating components were designed to empower women to participate in activities influencing household economy and to have economic power in the house by generating their own incomes. The project had established facilities such as offices and meeting halls for women, at least at Adi-Ibrihim, to enable them to discuss the gender issues, to take training on social matters and home economics. The project has contributed to the issue of gender equity because the consciousness and participation

of women have been considerably increased. Women participation in deciding project priorities, planning and implementation has been increased.

6. PERFORMANCE OF PROJECT PARTNERS

6.1. THE PROJECT PARTNERS

The main project partners and their functions are given below.

- **MoA:** formulate, implement, monitor and control the project, technical support, training to local community, delivery of vet. drugs and equipments, assigning staff to be coordinator.
- **MoLG:** participation in project formulation (problem identification, prioritization of interventions, setting up local committee and overall supervision) and beneficiaries selection.
- **MoH**: mobilization of people against HIV/AIDS.
- **DF**: Norway assignment of external auditor, funding the project, facilitation for training, project planning, project monitoring, supervision and evaluation, funding the whole project components.
- **Community**: owners of the project, participation in design, implementation monitoring, and evaluation of the project.
- **NUEW**: (Sub-zoba Agordat): selection of female headed household beneficiaries.

6.2. PROJECT ORGANIZATION AND MANAGEMENT

The project has no clear organization. It consists of a higher level body located at Barentu which consists of a project coordinator, the head of the MoA-GB and an accountant. The DF, Norway, part of this group. The group has decision making powers on project matters such as funds and it coordinates the donor and the MoA-GB. The second organ is the implementing unit operating from Agordat by a cashier, driver, and home economist. The agriculture officer for the project area is also the manager of NPA and DF projects in the same area in addition to his sub-zoba duties. The remaining of the project staff members were too junior to contribute to the management effectively. The manger is responsible for almost all of the project activities and he is unable to implement all of them due to overloading. The team in the absence of a livestock person at project site, is being supported by a veterinarian from Barentu who is also too busy to be able to contribute to the project and his position in the project is nominal. It is not very clear who prepares the AWPB, but it appears that it is the project coordinator who also coordinates other projects at the MoA-GB.

He is responsible to prepare project reports but he has little involvement in the other aspects of project management. Under this system, the project management efficiency and effectiveness are likely to be inadequate.

The parties involved have good work relations, but they are at Barentu and Agordat where communication is difficult. The keen interest of the MoA-GB head is of valuable assistance to the project.

6.3. PERFORMANCE OF THE PROJECT

The MoA-GB is implementing the activities as agreed with the donor, and it is, through the project, strengthening rural community capacity. The project has been facilitating for implementing the activities that promote gender equity. This activities were effectively supported by the NUEW office at Agordat. The community members are participating actively in the project decision making, designing, implementation, monitoring and selecting project beneficiaries. The women participating in the project is growing fast because most of the activities are focused on women issues.

Other Aid Agencies working with the MoA-GB

There are few aid agencies working with the MoA-GB. These are IFAD; the Small Scale River Diversion (SSRD); and KONA.

IFAD

This project focuses on rural development involving agriculture, livestock, health, water and capacity building. It is implemented by the Gash-Barka Region Administration through a coordinator. The other sectors such as agriculture provide technical support.

Small Scale River Diversion (SSRD)

The focus is on crop production through river water diversion. In the past, it was directly linked to the MoA, headquarters, Asmara and implementation was directly without involving the MoA-GB. Currently, it is operating within the MoA-GB institutional framework. The project is financed by the Belgians and upto 1999 it was known as Keru Agricultural Project (KAP).

KONA

The project is financed by the Netherlands and it has its own PCU. The management being independent of the MoA-GB in the same lines of the former KAP. However the MoA-GB has a role to approve AWPB. It has offices both at the MoA, Asmara and at Barentu.

7. LESSONS LEARNED

7.1. COMMUNITY PARTICIPATION

- The active participation of the beneficiary community was an essential element for the good implementation performance of the project.
- The full participation of women in the project has enabled to introduce economic activities and foods such as poultry into communities which were not accepted prior to the project.
- Women focused income generating activities and education are useful elements towards empowering women in socio-economic decisions and promotion of awareness.

7.2. PROJECT STRATEGY DESIGN

- It has been learned that the designs of each component have some problems.
- Many factors that influence sustainability were revealed.
- Some of the assumptions are nomore valid.

8. CONCLUSION AND RECOMMENDATION

8.1 CONCLUSIONS

The project has achieved most of its objectives to the expected extent at the time of evaluation. It is also in progress to achieve its remaining objectives and goals. The findings of the evaluation at mid-term of the project management cycle indicates that the project is expected to be socially, financially, technically and environmentally sustainable. The communities involved, and in particular the women, have recognized the important role that the project plays to improve their livelihoods. It has proved the relevance of the project to the beneficiary. The households involved in the Poultry, Dairy Goat, and Camel components have increased their incomes to the extent expected at the time of evaluation. The poultry and dairy goat components have improved family nutrition. The Donkey Component has already relieved women beneficiaries from hard work and it is generating a limited income to the household. The Water Component has achieved its immediate objectives at least in some of the project sites; the Range and Veterinary Components were in the process of achieving their specific objectives. However the indication of the impact or the extent to which the project is to contribute towards the goals of achieving food security, poverty reduction and institutional capacity is in place, but the speed

at which rate that the communities will benefit, will depend on the speed at which rate the project is implemented.

8.2 RECOMMENDATIONS

8.2.1. PROJECT ORGANIZATION AND MANAGEMENT

- The project management capacity should be systematically upgraded to attain the minimum required effectiveness and efficiency. It must have a viable organization and structure with adequate personnel and material resources to carry-out its functions at the required level of standard. Its office must be established at Agordat which is the project site with less dependence on Barentu. The present organization has inadequate operation mechanism and the project staff are wasting valuable time and funds to go to Barentu for petty maters. It is absolutely essential that a project manager be appointed with adequate support staff to manage only the project and not on a part time basis which is the present practice.

- The project should establish CBO offices at each Village Kebabi Administration Center of the project area. Each of these should be provided with facilities, equipment and two project contact personnel (female and male). This organization will facilitate project implementation and monitoring and strengthening institutional capacity at community level.

- It would be advisable to provide technical assistance to train personnel on technical and managerial matters; to establish organization, structure, linkages and functions; to design a detailed logframe matrix, AWPBs and monitoring and evaluation and recording systems.

8.2.2. VETERINARY SERVICE COMPONENT

The two veterinary stations must be improved by equipping, improving the facilities and by providing personnel so that diagnostic services and safe management of sensitive drugs and biologicals are achieved.

- The health delivery system must be improved to allow adequate access to farmers. It must have a program to visit the beneficiaries through a fixed route and schedule and not to wait the farmers to come to the station.

- Adequate disease monitoring and recording system must be established to assist health service planning.

- For reasons of sustainability, community based recovery of operational costs must be gradually introduced in the lines of the Water Component. Suitable local personnel must be identified and trained in veterinary skills to eventually takeover the services.

- The staff need training and particularly in diagnostic laboratory techniques, disease monitoring and data management.

8.2.3. POULTRY COMPONENT

- The poultry feed problem must be addressed as soon as possible. A study must be carried-out to identify the potentials that exist at to prepare economic poultry rations from locally available feedingstuffs that are not edible to man. There are potential sources of protein (animal and plant origin), macro-minerals and vitamin sources in the project area. The most difficult, in respect to economics, is probably the energy source feed ingredients.

- Depending on the findings of the study, establishment of a simple, small-scale feed preparation facility to be located at Agordat should be considered. However, this must be of locally manufactured equipment and very simple consisting of a small mill, mixer and a filling bin. It should not be complicated or too big plant. It should be assessed to reveal possibilities of other interested poultry organizations operating in Gash-Barka to become partners.

- A sustainable chick supply system should be established in the project area.

- Community based egg marketing system must be organized possibly with cooling facility (+ 15 ^{o}C).

- The technical skills of the women beneficiaries should be upgraded through frequent and quality training.

8.2.4. DAIRY GOAT COMPONENT

- It is the most relevant component for the communities in the project area, but it has problems of strategy design. Special attention should be given to improve design

.

- The flock of the breeding goats being provided to each household should be of economic size. The present size is too small to allow adequate returns within short period of time. Due to this, the women tend to sell the goats received to meet their urgent needs such as food. This action is preventing the flock from reaching the economic size

- The provision of feed supplement requirement should be considered. At present the model being not better than the traditional has very low reproductive and productive efficiency. For instance the kidding interval is one year and fertility rate is as low as 60 %. Thus, the production model or system must be modified or redesigned to ensure a viable economic model.

- Abortions and stillbirth have been widely reported at the time of evaluation probably associated with malnutrition, however the veterinary component needs to establish this.

- The women beneficiaries are facing a serious problem of herding. Attention should be made on how to change the production system so that the herding issue is addressed.

8.2.5. RANGELAND

- Rangeland development has high priority in the project area and it deserves adequate attention if the livelihood of the population is to be changed fundamentally.

- The technique should be improved and the investment should be increased in respect to soil/water conservation and in particular water. In the current approach, surface water spread and retention of soil moisture are inefficient. Appropriate technical methods should be introduced and adequate budget must be provided for the soil/water conservation since the sustainability of the range component is influenced by drought. To address this problem range productivity per unit area should be improved to allow preparation of hay for purposes of feed emergency situations, or even as a standing hay.

- Monitoring and evaluation system should be established.

8.2.6. THE USE OF THE NLDP WATER WELLS

The NLDP had plans to produce high quality forage under irrigation so as to develop the animal industry in the project area, but the plan was not completely implemented. There is great opportunity to utilize these wells by integrating them with the DF project.

- The water wells are of high yield capacity (7 lit./s)and they were constructed by the National Livestock Development Project (MoA/ADB) at Adi-Ibrihim and Mogoraib areas towards the banks of Barka River. They are equipped and ready for use and adjacent to them exists large area of grazing land with high potential for irrigated forage production. It would be of great importance to the DF project to consider the utilization of these wells to fundamentally resolve the feed issue, including emergency needs during drought years, in the project area and to transform the project to become more productive and sustainable. This approach will also solve the feed problems of the Dairy Goat and Poultry Components. The additional requirement is the water conveyance system to pasture.

- An appropriate feasibility study is recommended.

8.2.7. CAMEL AND DONKEY COMPONENTS

- The camel component should be expanded because there are many male headed households in the project area that are very needy. The camel generates adequate income, facilitates human and material transport and contributes to crop production.

- The donkey component has resulted into significant impact on women welfare and it is an efficient means of transport and it generates some income. It should be expanded to more needy women in the project area.

8.2.8. CONSOLIDATION OR EXPANSION

- During Phase II, it is more logical to consolidate what has been achieved by the project rather than expanding it to other areas. There are many sustainability factors in each of the project components and it is essential to address them systemically. The various strategies must be given enough testing time and resources. This is also justified by the fact that institutional capacity of the MoA-GB is not adequate to be able to expand. Expansion would be viable only when the alternatives under test are proved to be sustainable, and that enough lessons are learning.

8.2.9. EXTENSION COMPONENT

An additional component which deals with rural organization, literacy, home economies, market, credit etc. should be established.

ANNEXES

ANNEX 1

PROJECT LOCATION AND SITE MAP

ANNEX 2
TERM OF REFERENCE

DRAFT

TERMS OF REFERENCE
FOR
THE EVALUATION OF
THE RANGELAND MANAGEMENT
AND
LIVESTOCK DEVELOPMENT PROJECT
IMPLEMENTED BY
MOA, GASH BARKA REGION

1. The evaluation should address the following issues:

1.1. Overall objective of the project:

- To asses the impact of the project compared to the overall objectives; i.e improved food security at household level and increased institutional capacity of MOA GB.
- How have the droughts in 2002 and 2003 affected the project/ beneficiaries
- Hass the project interventions moved beneficiaries out of the food aid line-
- if not-What is the % number of beneficiaries receiving food aid
- How is this % number compared to neighbouring villages which are not benefiting from project intervention.

1.2 Sustainability of the project

- Assess the sustainability of the project at MOA level and at community level.
- Assess the cost effectiveness of the project/project components with regard to expected/achieved results.

1.3 Relevance of the project:

Assessment of

- The assessment of the project with regard to needs and priorities identified by the beneficiaries.
- The procedure for selecting and identifying the beneficiaries
- The procedure for identifying the needs and priorities of the beneficiaries
- The decision making process for the annual implemented activities
- The local implementing capacity (MOA field staff)
- The participation from community in project implementation
- Stakeholders role in planning, implementing and monitoring/follow up

- What is the total number of people (or HH.) benefiting from this project (incl. 2004) compared to the total number of households in the project areas.

1.4 Project components

Evaluate the sustainability, effectiveness, costs and results compared to expected results (specific objectives)

1.5 Specific interventions to be assessed:

1.5.1 Rangeland management

- The management of the area (rotation of grazing field, the performace of the guards carrying capacity, grazing land enrichment)
- The impact of the water point in Bisha (both for livestock and for people)
- The management of the water committee and their responsibilities.
- The decision making re-payment for users and the management of the bank account
- The maintenance of the watering troughs/reservoir (cleanness, algees, tabs etc.)
- The performance of the livestock in Bisha during the last years of drought (from after the water point was up and running) compared to livestock in other relevant areas
- The cost effectiveness of water ponds constructed in 2003. Arc these ponds also used for human consumption?
- Postal migration- any change in migration routes resulting from the new ponds and water points?

1.5.2 Veterinary services

- The performance and the impact of the veterinary services, (clinic, availability of drugs/vaccines, out reach service)

1.5.3 Poultry development

- The relevance and quantity of the training.
- Problems (if any) with disease and chicken houses.
- The feed component
- The income generation and impact on the house-hold economy
- Marketing aspects of selling eggs
- Human nutrition aspects

1.5.4 Introduction of dairy goats

- Relevance and quality of training
- The impact on the household economy compared to poultry
- The management aspect (shepherds etc. school attendance)
- Has the introduction of poultry and dairy goats strengthened the women's position in the villages

1.5.5 Institutional capacity buildings for MOA GB

- The impacts of various training programmes in project management and finance.
- The impact of exposure visits to Kenya (KaARI) on the rangeland management. Have these study tours resulted in adjustments of project components in the project area? (or elsewhere in Gash Barka? The latter based on discussions with MOA only)

1.5.6 Other institutional dimensions to be discussed with MOA gash Barka:

- How/has MOA used the acquired knowledge/experiences from this project in dialog with the government/regional administration?
- What other donors does MOA receive funds from?
- How dependant is MOA on DF as donor?
- How is MOA collaborating with other international agencies on developing activities in Gash Barka
- In what way is MOA able to influence national policies/strategies related to agriculture/ livestock development.

2. Environmental dimension.

- Assess environmental effects of the project.
- Has the projects led to increased environmental awareness in the communities, (importance of grazing area closures)
- Assess health effects of the water points/ponds re. Emergence of diseases e.g. malaria, parasites, water born diseases.

3. Sustainability and recommendations for the second phase of the project

- Assess the sustainability, economically as well as administratively.

- Which of the project components have been most crucial to village development
  - According to the village administrations
  - According to the women groups/other beneficiaries

  Recommendations for the second phase of the project;
- Should the project in the next phase continue in the same areas in order to strengthen/consolidate the development efforts-or expand to other areas
- Should be additional components be included in order to achieve the overall project objectives?
- How can/should the project in the second phase focus (more) on influencing national development policies/strategies.

Date and place: _____

SIGN: _____

Teklemariam Zeggu

T. Consult

Date and place: _____

SIGN: _____

Knut Nyflot

The Development Fund

ANNEX 3
PROJECT BUDGET AND UTILIZATION

Ministry of Agriculture Development Fund Commercial Bank of Eritrea Barentu Account Number Public 183 financial Status Report

Table 3.1. Budget and utilization, year 2000

Budget				Expenditure			Balance budget available (8)	% budget used (9)
Budget line (1)	**Budget item (2)**	**Budget requested (3)**	**Disbursed (4)**	**To end of previous year (5)**	**This year (6)**	**To end of this year (7)**		
				0.00	910,028.00	909,506.00	522.00	
Capital (a)								
Capacity Building		**395,000.00**	**384,835.00**	**0**	**384,313.00**	**384,313.00**		97.42
	Purchase of Vehicle	250,000.00	330,837.00	0	330.837.00	330,837.00		100
	Construction Office	100,000.00	0.00	0	0.00	0.00		0
	Computer with accessories	30,000.00	0.00	0	0.00	0.00		0
	Office furniture and equipment	15,000.00	53,998.00	0	53,476.00	53,476.00		99
Range land and water point development		**410,676.00**	**0.00**	**0**	**0.00**	**0.00**		**0**
	Water reservoir	10,000.00	0.00	0	0.00	0.00		0
	Soil and water conservation structures	110,675.00	0.00	0	0.00	0.00		0
	Borehole drilling	200,000.00	0.00	0	-7.00	-7.00		0
	Purchase of generator and pump	90,000.00	0.00	0	0.00	0.00		0
Poultry		**39,656.00**	**0.00**	**0**	**0.00**	**0.00**		**0**
	Purchase of pullets	30,000.00	0.00	0	0.00	0.00		0
	Purchase of poultry equipments	9.656.00	0.00	0	0.00	0.00		0
	Total (A)	**1,295,664.00**	**392,603.00**	**0**	**392,603.00**	**392,603.00**		**0**
Operating (B)								
Emergency Humanitarian Assistance		**0.00**	**500,000.00**	**0**	**500,000.00**	**500,000.00**		**100**
	Purchase of sorghum	0.00	500,000.00	0	500,000.00	500,000.00		100
Capacity building		**300,830.00**	**67,289.00**	**0**	**67,289.00**	**67,289.00**		**100**
	Training	**42,750.00**	**4,800.00**	**0**	**4,800.00**	**4,800.00**		**100**
	Staff project mgt	15,750.00	0.00	0	0.00	0.00		0
	Staff financial mgt	15,750.00	0.00	0	0.00	0.00		0
	Staff computer operation	11,250.00	4,800.00	0	4,800.00	4,800.00		100
	Salary	**129,040.00**	**20,393.00**	**0**	**20,393.00**	**20,393.00**		**100**
	Project manager	21,600.00	0.00	0	0.00	0.00		0
	Accountant	14,400.00	0.00	0	0.00	0.00		0
	Computer operator	12,000.00	0.00	0	0.00	0.00		0
	Driver	14,400	0.00	0	0.00	0.00		0
	Others	**66,640.00**	**25,193.00**	**0**	**25,193.00**	**25,193.00**		**0**
	Fuel and lubricants	20,000.00	0.00	0	0.00	0.00		0
	Vehicle maintenance and service	10,000.00	0.00	0	0.00	0.00		0
	Office stationeries	10,000.00	0.00	0	0.00	0.00		0
	Field allowance/perdiem	26,640.00	11,225.00	0	11,225.00	11,225.00		100
	Bank service charge	0.00	878.00	0	878.00	878.00		100
	Vehicle insurance	0.00	8,290.00	0	8,290.00	8,290.00		100
Poultry		**74,550.00**	0.00	0	0.00	0.00		0
	Farmers poultry mgt	30,000.00	0.00	0	0.00	0.00		0
	Poultry feed	44,550.00	0.00	0	0.00	0.00		0
	Total (B)	**449,930.00**	**516,903.00**	**0**	**516,903.00**	**516,903.00**		**100**
	Total (A + B)	**1,091,672.00**	**910,028.00**	**0**	**909,506.00**	**909,506.00**		**99.9**

Source: MoA Zoba Gash Barka Annual Budget plan 2000 Reported to DF

Reviewed by Dr Teklezghi MoA Zoba Gash Barka Annual Resources Development Division,; Project Representative

Table 3.2. Budget and utilization, year 2001

Budget				Expenditure			Balance budget available (8)	% budget used (9)
Budget line (1)	**Budget item** (2)	**Year budget (3)**	**Disbursed (4)**	**To end of previous year (5)**	**This year (6)**	**To end of this year (7)**		
1	2			**522.00**	**249,522.00**	**1,159,028.00**	**682,049.00**	
Capital (a)								
Capacity Building		**135,000.00**	**135,000.00**		6,452.00			4.8
	Construction office	80,000.00	80,000.00		0.00			0
	Purchase of computer with accessories	40,000.00	40,000.00		0.00			0
	Office furniture and equipments	15,000.00	15,000.00		6,452.00			43
Range land and water point development		**222,000.00**	**222,000.00**		0.00			0
	Construction of water reservoir and water troughs	32,000.00	32,000.00		0.00			0
	Borehole drilling	130,000.00	130,000.00		0.00			0
	Purchase of generator and pump	60,000.00	60,000.00		0.00			0
Poultry		**213,000.00**	**213,000.00**		0.00			0
	Purchase of pullets	70,000.00	70,000.00		0.00			0
	Purchase of feed	130,000.00	130,000.00		0.00			0
	Purchase of poultry equipments	13,000.00	13,000.00		0.00			0
	Total (A)	**570,000.00**	**570,000.00**		**6,452.00**			**1.13**
Operating (B)								
Capacity building		**209,010.00**	**117,800.00**		**111,069.00**			**94.29**
	Training	53,800.00	53,800.00		36,750.00			68.31
	Staff project mgt	8,150.00	8,150.00		0.00			0
	Staff financial mgt	8,150.00	8,150.00		0.00			0
	Farmers training	37,500.00	37,500.00		36,750.00			98
	Salary	**40,800.00**	**40,800.00**		32,206.00			78.93
	Accountant	14,400.00	14,400.00		14,400.00			100
	Computer operator	12,000.00	12,000.00		12,000.00			1000
	Driver	14,400.00	14,400.00		5,806.00			40.32
	Others	71,210.00	23,200.00					
	Fuel and lubricants	15,000.00	15,000.00		11,110.00			74.07
	Vehicle maintenance and service	9,000.00	9,000.00		0.00			0
	Office stationeries	11,000.00	11,000.00		771.00			7.01
	Field allowance/perdiem	14,400.00	14,400.00		29,563.00			**ABOVE PER 205**
	Bank service charge	0.00	0.00		669.00			**ABOVE PER 0**
	Audit fees	10,000.00	10,000.00		0.00			0
	Vehicle insurance	7,000.00	7,000.00		0.00			0
Rangeland		**203,700.00**	**203,700.00**		**90,720.00**			44.54
	Seed purchase	90,000.00	90,000.00		90,000.00			100
	Tractor rent	35,500.00	35,500.00		720.00			2
	Guarding	70,200.00	70,200.00		0.00			0
	Monitoring and evaluation	8,000.00	8,000.00		0.00			0
Poultry		**14,000.00**	**27,527.00**		**0.00**			**0**
	Transportation and distribution of chickens and feed	14,000.00	14,000.00		0.00			0
Veterinary services		**11,500.00**	**11,500.00**		**41,281.00**			**ABOVE PER 359**
	Drugs, vaccines and amino acids	3,500.00	3,500.00		36,860.00			**ABOVE PER 153**
	Monitoring and evaluation	8,000.00	8,000.00		4,421.00			55.26
Contingency		48,010.00	0.00		0.00			

	Total (B)	**438,210.00**	**360,527.00**		**243,070.00**			**67,.42**
	Total (A +B)	**1,008,210.00**	**931,049.00**		**249,522.00**		**682,049.00**	

Source: MoA Zoba Gash Barka Annual Budget plan 2000 Reported to DF
Reviewed by Dr Teklezghi MoA Zoba Gash Barka Annual Resources Development Division,; Project Representative

Table3.3. Budget and utilization, year 2002

Budget				Expenditure			Balance budget available (8)	% budget used (9)
Budget line (1)	**Budget item (2)**	**Budget requested (3)**	**Disbursed (4)**	**To end of previous year (5)**	**This year (6)**	**To end of this year (7)**		
				682,049.00	1,276,344.00	2,432,372.00	874,170.00	
Capital (a)								
Capacity Building		**90,000.00**	**225,000.00**		**80,000.00**			**35.36**
	Construction vet clinic	80,000.00	120,000.00		80,000.00			66.67
	Construction office	10,000.00	105,000.00		0.00			0.00
Range land and water point development		**222,000.00**	**655,938.00**		**376,555.00**			**574.2**
	Construction of water reservoir and water troughs	32,000.00						
	Borehole drilling	130,000.00						
	Submersible water pump	60,000.00						
Dairy goats		**99,000**	**120,000.00**		**117,975.00**			**98.31**
	Purchase of dairy goats	99,000						
Poultry development		**19,500.00**	**155,365.00**		**230,503.00**			**148.36**
	Purchase of pullets	13,000.00						
	Purchase of feed	6,500.00						
	Poultry house construction	0.00						
	Total (A)	**430,500.00**	**1,381,303.00**		**805,033.00**			**58.28**
Operating (B)								
Capacity building		**516,500.00**	**273,271.00**		**141,630.00**			**51.83**
	Training	***86,250.00***	***91,150.00***		***71,527.00***			***78.47***
	Study tour to Kenya	50,000.00	50,000.00		35,377.00			70.75
	Farmers training	36,250.00	41,150.00		36,150.00			87.85
	Salary	***34,000.00***	***67,140.00***		***70,103.00***			***104.4***
	Accountant and computer operator	**19,600.00**						
	Driver	14,400						
	Others	***396,250.00***	***480,872.00***		***98,993.00***			***86.1***
	Office stationeries	7,100.00	0.00		2,151.00			Above per
	Field allowance/perdiem	44,000.00	35,197.00		32,499.00			92.33
	Bank service charge	0.00	0.00		1,498.00			Above per
	Audit fees	10,000.00	10,000.00		20,900.00			Above per
	Project follow-up	270,473.00			0.00			0
	Monitoring and supervision	18,934.00	0.00		4,369.00			Above per
	Vehicle machineries	0.00	0.00		9,359.00			Above per
	Fuel and lubricants		0.00		11,131.00			Above per
	Custom duty		0.00		17,092.00			Above per
Rangeland		**250,900.00**	300,000.00		0.00			0
	Seed purchase	160,000.00			0.00			0
	Tractor rent	40,400.00			0.00			0
	Guarding	50,400.00			0.00			0
Poultry and dairy goat		**5,600.00**	**5,891.00**		**0.00**			**0**
	Transportation and distribution of chicks and feed	5,600.00			0.00			0
Veterinary services		**46,500.00**	**30,000.00**		**227,688.00**			**758.96**
	Drugs, vaccines and amino acids	46,500.00	30,000.00		227,688.00			758.96

Contingency		45,743.00	69,784.00		0.00			0
	Total (B)	**819,500.00**	**609,162.00**		**468,311.00**			**76.78**
	Total (A + B)	**1,250,000.00**	**1,465,465.00**		**1,273,344.00**			**86.89**

Source: MoA Zoba Gash Barka Annual Budget plan 2000 Reported to DF
Reviewed by Dr Teklezghi MoA Zoba Gash Barka Annual Resources Development Division,; Project Representative

Table 3.4. Budget and utilization, year 2003

Budget				Expenditure			Balance budget available (8)	% budget used (9)
Budget line (1)	**Budget item (2)**	**Budget requested (3)**	**Disbursed (4)**	**To end of previous year (5)**	**This year (6)**	**To end of this year (7)**		
				874,170.00	4,642,100.00	7,074,472.00	852,690.00	
Capital (A)								
Capacity Building			**588,000.00**		**577,742.00**			**35.36**
	Construction vet clinic	120,000.00	120,000.00		118,542.00			66.67
	Construction of ponds		468,000.00		459,200.00			0.00
Range land and water point development		**321,300.00**	**800,000.00**		**1,141,290.00**			**574.2**
	Construction of water reservoir and water troughs							
	Borehole drilling							
	Sumersible water pump							
Restocking		**80,000.00**	**1,690,009.00**		**1,643,798.00**			
	Purchase of dairy goats							
	Purchase of donkeys							
Poultry development		**263,423.00**	**563,723.00**		**580,255.00**			**148.36**
	Purchase of pullets							
	Purchase of feed							
	Poultry house construction							
	Total (A)				**3,943,085.00**			**58.28**
Operating (B)								
Capacity building								
	Staff capacity building	**150,000.00**			**54,337.00**			**51.83**
	Training	86,250.00			172,905.00			78.47
	Study tour to Kenya	50,000.00	150,000.00		139,755.00			70.75
	Farmers training	36,250.00	33,200.00		33,150.00			87.85
	Salary	**34,000.00**	**16,000.00**		**11,900.00**			**104.4**
	Accountant and computer operator	19,600.00	12,000.00					
	Driver	14,400.00	4,000.00					
		396,250.00	**261,688.00**		**150,485.00**			**86.1**
	Office stationeries	7,100.00	7,000.00		5,126.00			Above per
	Field allowance/perdiem	44,000.00	94,700.00		88,817.00			92.33
	Bank service charge	0.00	0.00		4,364.00			Above per
	Audit fees	10,000.00	12,000.00		11,900.00			Above per
	Monitoring and supervision	18,934.00	130,000.00		130,000.00			Above per
	Vehicle insurance		0.00					Above per
	Fuel and maintenance	25,000.00	17,989.00		42,278.00			
Donkey and dairy goats		10,000.00	300,000.00					0
	Transportation and distribution of chicks and feed	10,000.00	300,000.00					0
Veterinary services		**225,200.00**	**203,000.00**		**179,388.00**			**758.96**
	Drugs, vaccines and amino acids	225,200.00	203,000.00					758.96
Contingency		62,945.00	130,000.00		0.00			0

	Total (B)				**699,015.00**			**76.78**
	Total (A + B)	**1,315,568.00**	**4,620,620.00**		**4,642,100.00**			**86.89**
To end of this year								

Source: MoA Zoba Gash Barka Annual Budget plan 2000 Reported to DF
Reviewed by Dr Teklezghi MoA Zoba Gash Barka Annual Resources Development Division,; Project Representative

ANNEX 4

INSTITUTIONAL CAPACITY BUILDING ACTIVITIES

Table 4.1. Training

MoA-GB PERSON TRAINING							
Year	**Trainee**	**Subject**	**Duration (day)**	**Place of learning**	**Trainer(s)**	**Assigned**	**Position**
2000		Project management evaluation planning		Asmara	Dr. Tesfay	Head quarter (Barentu)	Veterinary
2000		Financial management and		Asmara	Dr.Tesfay	Head quarter (Barentu)	Finance head
2000		Computer application		Barentu	Gate computer training center	Head quarter (Barentu)	Casher
2001	1	Modern poultry management	6 month	Holland		Not present in the country	
2001	8	Project planning management and evaluation		Asmara	Dr. Tesfay	In all MOA Zoba Zone	Technical expert
2001	5	Financial management and administration		Agordat	Dr. Tesfay	Head quarter (Barentu)	Finance and administration
2002	3	Range land management	14 days	Kenya	KARI	Barentu and Agordat	Veterinary range expert head and sub-core
2002	20	Principle of management	7 Days	Barentu	Dr. Tesfay	In 14 Sub-Zoba	Technical, finance, home-economic
2003	3	Range land management	21	Kenya	KARI	Barentu	Personal, Veterinary head and sub-zoba
2003	23	Principle of management	7 days	Barentu	Dr. Tesfay	In 14 Sub-Zoba	Technical, finance home economic
2004	3	Range land management	14 days	Kenya	KARI	Barentu	Veterinary assistant animal health technical
PROJECT STAFF							
2000	Abadi Hagos	Finance and administration		Asmara	Dr. Tesfay	Head quarter (Barentu)	Finance head
2000	Issac Elos	Project planning management evaluation		Asmara	Dr. Tesfay	Head quarter (Barentu)	Veterinary
2000	Senait Asmelash	Computer Application		Asmara	Gate computer training center	Barentu	Casher
2001	Daniel Yohannes	Project planning management	12 days	Asmara	Dr. Tesfay	Dighe	Project implementer management
2002	Abadi Hagos & Senait Tekle	Financial management and administration	5 days	Agordat “	Dr. Tesfay “	Barentu “	Finance lead casher
2002	Teklezgi Tekie	Range land management	14 days	Kenya	KARI	Barentu	Veterinary
2002	Daniel Yohannes & Teklezgi Tekle	Principle of management	7 days	Barentu “	Dr. Tesfay	Dighe Barentu	Project of implementer management

ANNEX 5
DATA POULTRY AND DAIRY GOAT COMPONENT IN THE PROJECT AREA

1. ADI-IBRIHIM VILLAGE

Goat

No. of Interviwee	Goat supplied		Available at present		Milk						Mortality (no.)			sales (no.)		Structure								Fertility	Kidding interval (month)	kidding percentage	Twinning rate (%)	Feeding		Herding
	Qty.	Year	Qty.	Year	yield/day/doe	length of lactation period (months)	total yield/lactation (liter)	home consumption in liter (%)	sales (liter)	price/liter (Nakfa)	kid	adult	abortion	<12 months	> 12 months	doe	buck	< 3 months	3 to 6 months	7 to 12 months	12 too 24 months	>24 months	Total					Type	Amount	
1	6	2001	17	2004	0.5 to 1	4	120	0	1	10	0	3	1	0	0	13	1	0	0	3	0	0	17	H	10	100	17	browsing		extensive
2	6	2003	10	2004	0.5	5	75	100	0	0	0	1	0	0	0	5	2	0	0	0	3	0	10	H	12	100	0	browsing		extensive
3	4	2004	4	2004	0.5	6	90	100	0	0	0	0	0	0	0	4	0	2	0	0	0	0	6	H		100	1	browsing		extensive
4	4	2004	3	2004	0.5	6	90	100	0	0	0	1	0	0	0	3	0	1	0	0	0	0	4	H		100	0	browsing		extensive
5	7	2002	4	2004	0.5	6	270	100	0	0	0	2	0	0	2	2	0	0	0	0	2	0	4	L	12	38	0	browsing		extensive
6	5	2001	9	2004	0.5	4	60	100	0	0	0	2	3	3	0	9	0	0	0	0	0	0	9	M	12	75	0	browsing		extensive
7	4	2004	3	2004	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	3	H	0	0	0	browsing		extensive
8	4	2004	4	2004	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	M	0	0	0	browsing		extensive
9	4	2004	6	2004	0.5	6	90	100	0	0	0	0	0	0	0	4	0	2	0	0	0	0	6	M	12	50	0	browsing		extensive
10	4	2004	6	2004	0.5	7	105	100	0	0	0	1	0	0	0	3	0	3	0	0	0	0	6	M	0	100	0	browsing		extensive

2. TEKRERET VILLAGE

Goat

No. of Interviwee	Goat supplied		Available at present		Milk						Mortality (no.)			sales (no.)		Structure								Fertility	Kidding interval (month)	kidding percentage	Twinning rate (%)	Feeding		Herding
	Qty.	Year	Qty.	Year	yield/day/doe	length of lactation period (months)	total yield/lactation (liter)	home consumption in liter (%)	sales (liter)	price/liter (Nakfa)	kid	adult	abortion	<12 months	> 12 months	doe	buck	< 3 months	3 to 6 months	7 to 12 months	12 too 24 months	>24 months	Total					Type	Amount	
1	6	2004	5	2004	0.5	3	45	100	0	0	0	1	1	0	0	2	0	0	0	3	0	0	5	G	0	17	0	browsing		extensive
2	4	2004	3	2004	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	3	G	0	0	0	browsing		extensive
3	6	2002	9	2004	0.5	4	220	100	0	0	0	2	0	2	0	8	1	0	0	0	0	0	9	G	11	50	0	browsing		extensive
4	6	2003	8	2004	0.5	4	480	100	0	0	0	2	0	0	0	4	0	0	0	4	0	0	8	G	7	50	0	browsing		extensive
5	6	2003	8	2004	0.5	6	360	100	0	0	0	1	0	2	0	6	2	0	0	0	0	0	8	H	7	50	16	browsing		extensive
6	6	2003	9	2004	2	4	240	100	0	0	0	0	0	0	0	6	0	0	0	3	0	0	9	H	7	33	0	browsing		extensive
7	7	2002	7	2004	0.25	6	180	100	0	0	2	0	3	0	0	4	1	0	0	2	0	0	7	P	10	50	15	browsing		extensive
8	7	2002	13	2004	0.5	4	60	100	0	0	0	1	0	0	0	7	0	3	3	0	0	0	13	G	6	4	0	browsing		extensive
9	6	2004	6	2004	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6	G	0	0	0	browsing		extensive
10	7	2002	8	2004	0.5	3	45	100	0	0	0	4	2	0	0	7	1	0	0	0	0	0	8	P	12	36	0	browsing		extensive

3. JIMEL VILLAGE

Goat

No. of Interviwee	Goat supplied		Available at present		Milk						Mortality (no.)			sales (no.)		Structure								Fertility	Kidding interval (month)	kidding percentage	Twinning rate (%)	Feeding		Herding
	Qty.	Year	Qty.	Year	yield/day/doe	length of lactation period (months)	total yield/lactation (liter)	home consumption in liter (%)	sales (liter)	price/liter (Nakfa)	kid	adult	abortion	<12 months	> 12 months	doe	buck	< 3 months	3 to 6 months	7 to 12 months	12 too 24 months	>24 months	Total					Type	Amount	
1	4	2003	8	2004	0.5	4	60	100	0	0	0	2	0	0	0	4	0	2	2	0	0	0	8	G	8	50	0	browsing		extensive
2	5	2003	9	2004	0.5	6	90	100	0	0	1	0	0	0	0	5	2	0	2	0	0	0	9	H	8	60	0	browsing		extensive
3	5	2003	6	2004	0.5	3	45	100	0	0	0	2	0	0	0	3	0	3	0	0	0	0	6	H	0	50	0	browsing		extensive
4	5	2003	5	2004	0.5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	G	0	0	0	browsing		extensive
5	5	2003	6	2004	0.5	2	30	100	0	0	0	0	0	0	0	5	0	1	0	0	0	0	6	G	0	30	0	browsing		extensive
6	6	2003	12	2004	0.75	3	68	100	0	0	0	0	1	0	0	6	0	2	4	0	0	0	12	H	6	60	0	browsing		extensive
7	6	2003	9	2004	0.5	3	45	100	0	0	0	1	3	0	0	6	2	1	0	0	0	0	9	G	7	50	0	browsing		extensive
8	4	2004	5	2004	0.5	4	60	100	0	0	0	1	0	1	1	4	0	1	0	0	0	0	5	H	10	50	0	browsing		extensive
9	7	2003	9	2004	0.5	7	105	100	0	0	0	0	0	0	1	4	0	3	2	0	0	0	9	G	10	50	14	browsing		extensive
10	6	2003	10	2004	0.5	6	90	100	0	0	0	0	2	0	0	4	2	2	2	0	0	0	10	H	11	50	0	browsing		extensive

4. GIRGINIA VILLAGE

Goat

No. of Interviwee	Goat supplied		Available at present		Milk						Mortality (no.)			sales (no.)		Structure								Fertility	Kidding interval (month)	kidding percentage	Twinning rate (%)	Feeding		Herding
	Qty.	Year	Qty.	Year	yield/day/doe	length of lactation period (months)	total yield/lactation (liter)	home consumption in liter (%)	sales (liter)	price/liter (Nakfa)	kid	adult	abortion	<12 months	> 12 months	doe	buck	< 3 months	3 to 6 months	7 to 12 months	12 too 24 months	>24 months	Total					Type	Amount	
1	7	2002	9	2004	0.75	6	135	100	0	0	3	1	4	0	2	8	0	1	0	0	0	0	9	H	12	50	0	browsing		extensive
2	7	2002	5	2004	0.75	6	135	100	0	0	0	6	0	0	0	5	0	0	0	0	0	0	5	G	12	40	0	browsing		extensive
3	7	2002	8	2004	0.75	6	135	100	0	0	0	4	0	0	1	5	0	0	0	3	0	0	8	G	12	50	0	browsing		extensive
4	7	2002	7	2004	0.75	6	135	100	0	0	0	1	1	0	0	4	1	0	0	2	0	0	7	G	12	40	0	browsing		extensive
5	7	2002	12	2004	0.5	4	60	100	0	0	0	3	1	0	3	11	1	0	0	0	0	0	12	H	12	55	0	browsing		extensive
6	7	2002	9	2004	0.75	7	68	100	0	0	3	1	1	0	1	5	0	0	0	0	4	0	9	G	12	60	14	browsing		extensive
7	5	2003	3	2004	0.75	6	135	100	0	0	0	1	3	0	1	3	0	0	0	0	0	0	3	G	6	50	0	browsing		extensive
8	7	2002	12	2004	0.75	4	90	100	0	0	0	0	1	2	1	3	2	0	4	3	0	0	12	H	6	60	0	browsing		extensive
9	7	2002	7	2004	0.5	4	60	100	0	0	0	1	0	0	2	4	0	3	0	0	0	0	7	G	6	50	0	browsing		extensive
10	7	2002	10	2004	0.75	4	90	100	0	0	0	1	1	0	1	4	2	0	4	0	0	0	10	H	7	57	0	browsing		extensive

I. TEKRERET VILLAGE

Poultry

No. of Interviwee	Chick supplied		Available at present		Egg						Mortality (no.)			Feed consumption/day/bird (gm.)	
	Qty.	Year	Qty.	Year	age of pullet at laying point (months)	eggs laid per year	egg weight (gm.)	egg sale (%)	length of laying period (year)	egg consumption (%)	chick	pullet	adult	type	amount
1	18	2004	17	2004	6	990	40	70	0.25	30	1	0	0	cereal	120
2	18	2004	26	2004	6	900	40	50	0.25	50	1	0	0	cereal	120
3	18	2004	16	2004	6	810	40	65	0.25	35	0	1	0	cereal	120
4	18	2004	14	2004	6	730	40	75	0.25	25	0	0	2	cereal	120
5	18	2004	42	2004	6	3600	40	50	0.65	50	0	0	0	cereal	125
6	18	2004	14	2004	6	630	40	70	0.25	30	2	0	0	cereal	120
7	18	2004	15	2004	7	1500	40	60	0.7	40	1	0	1	cereal	120
8	18	2004	13	2004	7	270	40	100	0.25	0	0	0	0	cereal	120
9	18	2004	17	2004	6	1560	40	75	0.25	25	0	0	1	cereal	120
10	18	2004	17	2004	6	420	40	65	0.25	35	1	0	0	cereal	120

2. ADI-IBRIHIM VILLAGE

Poultry

No. of Interviwee	Chick supplied		Available at present		Egg						Mortality (no.)			Feed consumption/day/bird (gm.)	
	Qty.	Year	Qty.	Year	age of pullet at laying point (months)	eggs laid per year	egg weight (gm.)	egg sale (%)	length of laying period (year)	egg consumption (%)	chick	pullet	adult	type	amount
1	25	2001	14	2004	6	6120	40	100	2	0	5	0	0	cereal	100
2	17	2003	16	2004	6	3000	40	50	2	50	1	0	0	cereal	100
3	17	2003	15	2004	6	3600	40	50	2	50	0	0	2	cereal	140
4	17	2003	17	2004	6	3600	40	50	2	50	0	0	0	cereal	120
5	18	2003	14	2004	6	3600	40	70	2	30	0	4	0	cereal	200
6	25	2001	13	2004	5	6000	40	60	2	40	2	0	7	cereal	70
7	20	2001	8	2004	6	3600	40	100	2.5	0	4	0	8	cereal	120
8	25	2001	18	2004	6	3600	40	100	2	0	0	0	15	cereal	150
9	25	2001	22	2004	6	7200	40	50	2	50	0	0	1	cereal	120
10	18	2003	14	2004	6	2880	40	50	2	50	2	0	2	cereal	140

3. JIMEL VILLAGE

Poultry

No. of Interviwee	Chick supplied		Available at present		Egg						Mortality (no.)			Feed consumption/day/bird (gm.)	
	Qty.	Year	Qty.	Year	age of pullet at laying point (months)	eggs laid per year	egg weight (gm.)	egg sale (%)	length of laying period (year)	egg consumption (%)	chick	pullet	adult	type	amount
1	17	2001	6	2004	6	1440	40	33	0.66	25	5	0	6	cereal	100
2	17	2001	17	2004	6	2400	40	62	0.66	37	0	0	0	cereal	120
3	16	2001	18	2004	6	4500	40	100	0.83	0	0	0	2	cereal	130
4	17	2003	22	2004	6	1800	40	50	0.66	50	1	0	0	cereal	120
5	17	2003	15	2004	6	2100	40	80	0.58	20	0	0	2	cereal	120
6	17	2003	20	2004	6	2100	40	70	0.5	30	0	2	0	cereal	110
7	17	2003	30	2004	6	3900	40	70	0.58	30	0	2	0	cereal	120
8	17	2003	30	2004	6	2400	40	70	0.83	30	0	0	0	cereal	120
9	17	2003	24	2004	6	3600	40	100	0.66	0	3	0	1	cereal	110
10	17	2003	31	2004	6	3900	40	75	0.5	25	3	0	0	cereal	110

4. GIRGINA VILLAGE

Poultry

No. of Interviwee	Chick supplied		Available at present		Egg						Mortality (no.)			Feed consumption/day/bird (gm.)	
	Qty.	Year	Qty.	Year	age of pullet at laying point (months)	eggs laid per year	egg weight (gm.)	egg sale (%)	length of laying period (year)	egg consumption (%)	chick	pullet	adult	type	amount
1	16	2003	7	2004	6	1800	40	100	1	0	1	4	1	cereal	130
2	18	2003	9	2004	6	1800	40	60	1	40	2	1	2	cereal	120
3	25	2002	5	2004	6	3600	40	75	2	26	2	11	3	cereal	120
4	23	2002	14	2004	6	3600	40	75	2	25	2	5	2	cereal	120
5	25	2002	12	2004	6	4200	40	60	2	40	3	2	5	cereal	120
6	25	2002	5	2004	6	1200	40	50	2	50	20	0	0	cereal	120
7	16	2003	11	2004	6	2700	40	66	1	34	6	0	0	cereal	120
8	25	2002	5	2004	6	6000	40	50	2	50	0	2	8	cereal	120
9	25	2002	13	2004	6	6000	40	50	2	50	5	2	0	cereal	120
10	25	2002	10	2004	6	4200	40	50	2	50	3	6	0	cereal	120

ANNEX 6
LIVESTOCK PROFILE AND PRODUCTION IN THE PROJECT AREA

I. TEKRERET VILLAGE

Range Animal

No. of Interviwee	Goat										
	Age at first kidding (month)	Twinnig rate (%)	Kidding percentage	Kids born/doe/life time	Kid mortality/year (%)	Kidding interval (month)	Lactation period (day)	Milk yield/lactation/doe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	12	20	40	6	10	7	180	90	12	10	7
2	12	15	50	6	15	7	180	90	15	12	8
3	11	15	45	8	12	7	120	60	15	8	6
4	12	20	40	7	20	7	180	90	10	10	8
5	12	10	40	6	10	8	120	60	12	12	10
6	11	20	45	7	15	7	120	60	10	10	7
7	10	18	50	8	30	8	120	60	30	6	7
8	12	30	55	8	30	8	120	60	30	6	7
9	12	30	55	8	30	8	120	60	30	6	7
10	10	18	50	8	30	8	120	60	30	6	7

No. of Interviwee	Sheep										
	Age at first lambing (month)	Twinnig rate (%)	Lambing percentage	Lambs born/ewe/life time	Lamb mortality/year (%)	Lambing interval (month)	Lactation period (day)	Milk yield/lactation/ewe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	12	35	40	6	15	7	180	45	10	10	7
2	12	30	50	6	20	7	180	50	10	12	8
3	11	25	45	8	15	7	120	30	15	8	6
4	12	35	40	7	25	7	180	45	8	10	8
5	12	20	40	6	20	8	120	30	12	12	10
6	11	25	45	7	20	7	120	40	10	10	7
7	10	20	50	7	40	8	120	60	35	6	7
8	12	50	55	7	40	8	120	60	35	6	7
9	12	50	55	7	40	8	120	60	35	6	7
10	10	20	50	7	40	8	120	60	35	6	7

No. of Interviewee	Cattle										
	Age at first calving (month)	Twinnig rate (%)	Calving percentage	Calves born/ewe/life time	Calf mortality/year (%)	Calving interval (month)	Lactation period (day)	Milk yield/lactation/cow (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	48	0	30	9	12	12	210	1050	15	30	100
2	52	0	35	8	10	12	210	1050	20	24	90
3	50	0	40	9	8	15	240	1200	20	24	100
4	48	0	30	7	12	15	210	1050	15	30	120
5	48	0	30	8	10	12	240	1200	15	30	130
6	48	0	40	7	10	12	210	1050	9	24	90
7	48	0	50	8	10	12	270	1050	20	24	115
8	36	0	40	8	10	12	270	1050	20	24	115
9	36	0	40	8	10	12	270	1050	20	24	115
10	48	0	50	8	10	12	270	1050	20	24	115

2. ADI IBRIHIM VILLAGE

Range

No. of Interviwee	Goat										
	Age at first kidding (month)	Twinnig rate (%)	Kidding percentage	Kids born/doe/life time	Kid mortality/year (%)	Kidding interval (month)	Lactation period (day)	Milk yield/lactation/doe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	10	10	75	7	35	10	180	110	17	12	15
2	12	20	65	7	20	11	180	150	40	24 to 36	20
3	10	30	50	7	10	11	120	180	25	6	8
4	12	20 to 30	40	10	20	7	180	270	30	7	12
5	12	20	40	10	20	7	180	270	30	7	12
6	12	10	50	10	15	12	180	90	10	6	15
7	12	30	50	10	10	8	120	60	45	6	22
8	11	30	50	8	10 to 15	7	120	120	50	6	22
9	11	40	40	7	10	6	120	120	25	7	12
10	12	10	50	10	15	12	180	90	10	6	20

No. of Interviwee	Sheep										
	Age at first lambing (month)	Twinnig rate (%)	Lambing percentage	Lambs born/ewe/life time	Lamb mortality/year (%)	Lambing interval (month)	Lactation period (day)	Milk yield/lactation/ewe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	10	25	75	7	35	10	180	90	15	24	25
2	12	40	50	7	25	11	180	120	30	24 to 36	20
3	12	50	70	7	11	17	120	120	10	6	7
4	12	50	80	10	30	7	180	180	15	7	10
5	12	50	70	9	30	7	180	180	15	7	10
6	12	20	50	10	25	12	180	60	4	6	15
7	12	50	50	10	15	8	120	60	40	6	20
8	11	40	50	8	15	7	120	70	30	6	20
9	12	60	40	7	10	6	120	60	25	7	10
10	12	20	50	10	25	12	180	60	7	6	18

No. of Interviwee	Cattle										
	Age at first calving (month)	Twinnig rate (%)	Calving percentage	Calves born/ewe/life time	Calf mortality/year (%)	Calving interval (month)	Lactation period (day)	Milk yield/lactation/cow (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	54	0	40	6	25	18	270	710	4	24	160
2	53	0	40	9	4	18	540	2700	20	48	150
3	60	0	60	11	2 to 3	24	240	1200	10	10	70
4	48	1	50	10	2	12	270	2160	10	20	80
5	48	1	50	9	2	11	270	2000	10	20	80
6	48	0	50	12	2 to 3	24	300	1500	20	24	130
7	60	0	4o to 5o	7	7	12	210	1050	25	24	130
8	60	0	50	8	5	12 to 15	210	1050	20	24	130
9	48	0	50	10	4	10	270	1380	20	18	70
10	48	0	50	12	2 to 3	24	300	1500	20	24	120

3. JIMEL VILLAGE

Range

No. of Interviwee	Goat										
	Age at first kidding (month)	Twinnig rate (%)	Kidding percentage	Kids born/doe/life time	Kid mortality/year (%)	Kidding interval (month)	Lactation period (day)	Milk yield/lactation/doe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	11	20	50	7	4	6	120	60	15	10	8
2	17	10	50	7	35	8	180	180	30	12	8
3	11	20	50	7	4	6	120	60	15	10	7
4	12	2	50	7	30	6	180	90	15	12	7
5	12	2	50	7	30	6	180	90	15	12	8
6	12	2	50	7	30	6	180	90	15	12	8
7	12	2	50	7	30	6	180	90	15	12	8
8	12	2	50	7	30	6	180	90	15	12	8
9	12	2	50	7	30	6	180	90	15	12	8
10	12	2	50	7	30	6	180	90	15	12	8

No. of Interviwee	Sheep										
	Age at first lambing (month)	Twinnig rate (%)	Lambing percentage	Lambs born/ewe/life time	Lamb mortality/year (%)	Lambing interval (month)	Lactation period (day)	Milk yield/lactation/ewe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	11	40	50	7	5	6	120	40	9	11	8
2	17	30	50	7	35	8	180	180	15	12	8
3	12	40	50	7	5	6	120	40	9	11	7
4	12	10	50	7	35	6	180	45	10	12	7
5	12	10	50	7	35	6	180	45	10	12	8
6	12	10	50	7	35	6	180	45	10	12	8
7	12	10	50	7	35	6	180	45	10	12	8
8	12	10	50	7	35	6	180	45	10	12	8
9	12	10	50	7	35	6	180	45	10	12	8
10	12	10	50	7	35	6	180	45	10	12	8

No. of Interviwee	Cattle										
	Age at first calving (month)	Twinnig rate (%)	Calving percentage	Calves born/ewe/life time	Calf mortality/year (%)	Calving interval (month)	Lactation period (day)	Milk yield/lactation/cow (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	48	0	40	9	20	12	300	1500	20	24	115
2	48	0	40	7	20	12	365	1800	15	24	110
3	48	0	45	8	20	12	300	1500	18	24	115
4	48	0	40	7	20	18	360	1800	20	24	100
5	48	0	40	7	20	18	360	1800	20	24	100
6	48	0	40	7	20	18	360	1800	20	24	100
7	48	0	40	7	20	18	360	1800	20	24	100
8	48	0	40	7	20	18	360	1800	20	24	100
9	48	0	40	7	20	18	360	1800	20	24	100
10	48	0	40	7	20	18	360	1800	20	24	100

Poultry

	No. of animals						
Year	No.of HH	Intitial supply	Hatched	available	Sold	Change in number	Reason for change
2001	146	3200	311	2472	532	502	disease, eaten by predotors
2002	25	625	130	481	132	142	
2003	200	650	386	2988	98	950	
2004	204	3690	0	3600	0		
Total	575	8165	827	9541	762	1594	

Goat

	No. of animals						
Year	No.of HH	Intitial supply	Born	available	Sold	Change in number	Reason for change
2001	0	0	0	0	0	0	
2002	60	420	122	391	84	67	
2003	582	3347	1560	3484	1455	268	
2004	150	750	0	750	0		
Total	792	4517	1682	4625	1539	335	

Donkey

		No. of animals					
Year	No.of HH	Intitial supply	Born	available	Sold	Change in number	Reason for change
2003	220	220	231	11	0	0	

Camel

		No. of animals					
Year	No.of HH	Intitial supply	Born	available	Sold	Change in number	Reason for change
2003	20	20	20	0	0	0	

4.GIRGINAI VILLAGE

Range

No. of Interviwee	Goat										
	Age at first kidding (month)	Twinnig rate (%)	Kidding percentage	Kids born/doe/life time	Kid mortality/year (%)	Kidding interval (month)	Lactation period (day)	Milk yield/lactation/doe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)
1	12	10	65	6	20	12	120	90	30	12	12
2	12	10	65	6	20	12	120	90	30	12	12
3	12	10	65	6	20	12	120	90	30	12	12
4	12	10	65	6	20	12	120	90	30	12	12
5	12	10	65	6	20	12	120	90	30	12	12
6	12	10	65	6	20	12	120	90	30	12	12
7	12	10	65	6	20	12	120	90	30	12	12
8	12	10	65	6	20	12	120	90	30	12	12
9	12	10	65	6	20	12	120	90	30	12	12
10	12	10	65	6	20	12	120	90	30	12	12

Sheep											Sheep
Age at first lambing (month)	Twinnig rate (%)	Lambing percentage	Lambs born/ewe/life time	Lamb mortality/year (%)	Lambing interval (month)	Lactation period (day)	Milk yield/lactation/ewe (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)	Age at first lambing (month)
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12
12	20	65	6	20	12	120	60	20	18	22	12

Cattle											Sheep
Age at first calving (month)	Twinnig rate (%)	Calving percentage	Calves born/ewe/life time	Calf mortality/year (%)	Calving interval (month)	Lactation period (day)	Milk yield/lactation/cow (lt.)	Average flok size (no.)	Age at slaughter weight (month)	Slaughter weight (Kg.)	Age at first lambing (month)
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12
48	0	40	7	10	18	180	540	10	36	140	12

ANNEX 7
VETERINATY RECORDS IN THE PROJECT AREA

Summary disease report for 2004

Table 7.1. Disease include in domestic animals, 2004

SN	Disease	Cattle	Goat	Sheep	Poultry	Donkey	Camel	Dog
1	Trypanosomiasis	73	0	1	0	29	78	0
2	Mange mite	9	62	14	0	0	59	0
3	Malnutrition	13	34	17	62	11	0	0
4	Blot	8	1	4				
5	Diarrhea	16	57	51	60			
6	Mastitis	18	6	7				
7	Caughing	42	85	42	40			
8	Babesia	13		1		5	29	
9	Rabies		2	1				2
10	Mechanical injury	1	1			6	5	
11	ILT				1			
12	Helminthiasis	38	44	36	50	3	4	
13	Ring worm	1						
14	Newcastle Disease				1			
15	Chronic Respiratory Disease				9			
16	Castration					12		
17	Others	3	3	4	0	37	20	

Table 7.2. Number of animal treated for diseases and parasites, Mogoraib veterinary station

Type	2000	2001	2002	2003	2004
External parasites	1884	3215	758	1364	3432
Internal parasites	1515	2028	846	1206	3126
Blood protozoa	321	786	210	180	435
Infectious keratitis	-	1564	1416	1356	2323
Non-specific diseases condition	2141	2249	1008	1934	1554
Total	**5861**	**9842**	**4238**	**6040**	**10870**

ANNEX 8

INDICATIVES FINANCIAL RESULTS OF INCOME GENERATING COMPONENTS

8.1. POULTRY MODEL (25 layers per household)

(a) Production coefficient

- Brooding hens: 2
  - Brooding/hen/year 2
  - Eggs/hen/brood 20
- Total eggs/year 80
- Total fertile eggs incubated (brood) (nos) 80
- Hatchability rate (%) 90
- Chicks produced (nos) 58
- Chick mortality up to 24 weeks age (%) 10
- Pullet at laying point (nos) 26
- Males at slaughter age (nos) 26
- Adult mortality (%) 4
- Average layer flock size (nos) 25 to 26
- Egg laying rate (%) 68

(b) Feed Consumption

(i) **25 layer Hen**: laying for 1 year

@ 50 g/head/day = 18.25 kg x 25 = 456.25 kg =**456.25 kg/year**

(ii) **2 Brooding hens:** used @ 60 days/year

60g/day/hen = 60 x 50 days x 2 = 6kg/year

(iii) **50 Growers:**

0 - 6 weeks @ 25 g/chick/day = 25.8 g x 42 = 1.05 kg

7 – 20 weeks: @ 40 g/chick/day = 40 g x 98 = 3.92 kg

21 – 24 weeks: @ 60 g/chick/day = 60 g x 28 = 1.68 kg

(iv) **Cockerel:** 2 x 50g x 365 = 35.6

Total **506.5**

(c) Water Consumption

- **Intake**: @ 225 ml/hen/day = 37 x 225 = 8.3 liters/day

  Sub-total 3030 = 487 jery-cans

- **Cleaning:** @ 5 liters/house/day 1825 liters/year

  Sub-total 1825 liters/day

  Total 4855 liters/year or 243 jery-cans

Table 8.1 Average Income, Expense and Profit

Income	**Unit**	**Units**	**Value (Nfa)**	
			Unit	**Total**
▪ **Egg** @ 40 g weight	(nos)	(+) 6200		
o eggs for brooding	(nos)	(-) 85		
o (-) eggs for home consumption	(nos)	(-) 730		
o Spoilage 40	(nos)	40		
o Net for sale	(nos)	5345		
			1.0	**5345**
▪ **Meat** (live basis)				
o male broiler after 2 taken for breeding	(nos)	26	70.0	1820
o spent hen	(nos)	25	70.0	1750
o spent cock	(nos)	2	80.0	160
Sub-total				**3730**
Total income				**9075**
Expense				
o Feed	(kg)	507	4.5	**2,281.5**
o *Water*	20(liter)	243	0.20	48.6
o *Labour (family) @ 2 hrs/day*				329
o *Veterinary drugs*				100
o *Miscellaneous (market, repair etc.)*				200
Total expense				**2859.1**
Profit				**6216**

Assumptions:

(i) egg marketing system is improved

(ii) women beneficiaries keep medium level of flock management

Egg price:	***Place***	***Price/egg/(Nfa)***
Adi-Ibrihim	*0.5*	
	Tekreret	1.10
	Agordat	1.50

8.2. DAIRY GOAT MODEL (20 DOES + 2 BUCKS)

Production coefficient

• Fertility rate	(%)	80
• Kidding interval	(month)	12
• Age at first kidding	(month)	12
• Twinning	(%)	0
• Kids/doe/year	(nos)	1
• Kid mortality	(%)	8
• Adult mortality	(%)	5
• Male: female ratio	(%)	10
• Milk yield after kid feeding	(l)	0.6
• Doe culling rate	(%)	5
• Buck culling rate	((%)	20
• Lactation period	(day)	120
• Total kids born/year	(+)	16
• Mortality up to maturity	(-)	1.2
• Net kids		14.8
• Doe replacement/year	(-)	4
• Male : female ratio		1 : 1
• Total female for sale		3.4
• Buck replacement		0.4
• Total bucks for sale		7

Table 8.3 Average Income, expense and Profit

Income	**Unit**	**Units**	**Value (Nfa)**	
			Unit	**Total**
• Milk @ 12 does @ 0.6 kg milk yield/head after kid feeding @ 120 days per lactation o consumption @ 1.5 liter/day = 547.5 liters/yr o sale 576 liter	(kg)	152	6 6	(6,912)
• Meat Young bucks @ 1 year age after replacement culled doe culled buck	(nos) (nos) (nos)	7 2 0.4	460 400 500	3,220 800 200
Sub-total				**4,220**
Total: with total milk value				**11,132**
50% milk sale				**7,676**
Expense				
• **Labour:** **Herding @ Nfa 5/adult head/month @ 6 months herding/year**	(nos)	35	30	1,050
• **Fed supplement (min. greens)** o **Greens @ 1.2 kg (30% DM)** group 1 @ 0.8 kg/day for 180days @ 16 goats = 2304 kg group 2 @ 0.3 kg/day/head 240 days 19 goats equiv = 1368 kg total 3672 kg	(kg)	3672	0.4	1,469
• **Cereal grain:** @ 100 g/head/day feeding 16 goats for 250 days = 400 kg/year	(kg)	400	4.5	1,800
• **Minerals**	(kg)			200
Total				**4,519**
Profit • With total milk value • With 50% of milk value				 6613 3151

8.3. CAMEL MODEL

Male camels were distributed to male headed households that were very poor for the purpose of increasing incomes of the household. Camels in the project area can be used for different economic activities.

- fuel wood collection for sale;
- tree leaves collection for house repair or for manufacturing local items such as baskets, mats etc.;
- human and goods transport;
- crop residue collection; and
- land preparation, or ploughing for crop production.

Most of the beneficiaries of this component in the project area use the male camel for the following number of days and fee rates by activity in a year.

- **fuel wood collection:** working @ 20 day/month for 8 months in a year = **160 days**
- **crop residue collection:** @ 30 days/year; = **30 days**
- **ploughing:** @ 1 camel day (CD) being 4 hrs; ploughing 0.25 ha per 1 camel day or @ 4 camel days required per ha
  @ 8 ha per camel per year, or **32 days/year**
  @ (Nfa) 80/camel day
- **tree leaves collection:** @ about 9 days/year; @ Nfa 50/load
  @ 1 load per day
- **human transport:** for household members @ about **30 days/year**
  @ Nfa 20 saving of bus fee/trip

The male camel works an average of about **261 days/year.**

Camel feeding

The camel in the project area feeds on cheap browse plants, but during the dry season it is supplemented with crop residue or cereal grain. When the camel is used for long trips or heavy works, it is supplemented with sorghum cereal grain.

Rations and costs

- **Sorghum stalks** are fed @ about 2.5 kg DM/day/camel for about 240days in a year; @ Nfa 3.0/2.5 kg bundle
- **Cereal grain** is fed for about 137 days in a year @2-4 kg/day @ (Nfa) 4.5/kg

Table 8.4 Average Income, Expense and Profit

	Unit	Units	Value (Nfa)	
			Unit	**Total**
INCOME				
• fuel wood load	(nos)	160	80	12,800
• ploughing	(ha)	4	320	1,200
• tree leaves load	(nos)	60	20	600
• human transport trip	(nos)	(30)	(20)	(600)
Total income				15,130
EXPENSE				
• feed supplement				
o sorghum stalk @ 2.5 kg bundle	(nos)	240	3	720
o sorghum grain @ 4 kg/day	(kg)	548	5	2,740
• veterinary				600
• labour (family)	(day)	(30)	(20)	(5,000)
Total expense				4,060
PROFIT				
• without including labour cost				11,670
• including labour cost				(6,670)

- The figures in bracket were not added.
- Labour source was the family hence no taken as cash.

8.4. DONKEY MODEL (1/ household)

The donkey model was designed for the purpose of reducing the workload women primarily through water transport. However, the donkey provides also other benefits although at a very limited scale. These include generating income by hauling water at a fee (Nfa) 1.50/jery can of 20 liter capacity. 2 jery-cans are carried/trip @ 8 jery-cans/day. About half of the water (40 litre/day) are used by the family. It is used also to collect fuel wood @ the rate of 2 trips/week @ Nfa 30/trip. It is used in collecting of tree leaves (*Lacha*) @ 1 trip/week @ (Nfa) 40/trip.

Table…. Approximate work and time plans for the donkey in a week

Activity	**Frequency of use (day/week)**
• water collection	
o home consumption	1.5
o on fee	1.5
• fuel wood collection	1
• tree leaves collection	1
Total	**5**

It is assumed that the donkey works 5 days per week and 45 weeks per annum.

Table 8.5 Average Income, Expense and Profit

	Unit	**Units**	**Value (Nfa)**	
			Unit	**Total**
Income				
• water collection @ fee	(nos)	576	1.5	810
• fuel wood @ 1 load/week	(nos)	45	30	1,350
• tree leaves	(nos)	45	40	1,800
Total income				**3,960**
Expense				
• feed				
o stalk @ 1 bundle of 2.5 kg/day	(nos)	300	3	900
• veterinary				200
• grain supplement	(kg)	100	4.5	450
Total expense				**1,550**
Profit				2,410

This is excluding

- human transport value equivalent to Nfa 600/year was not included as income
- labour source was family and not taken as cost

In the table above, the following were excluded

ANNEX 9
LOGFRAME

PROJECT LEVEL

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
• Enhance food security and living standards in the project area • strengthen institutional capacity in the project area • to support the regional administration to better represent the needs and interest of the agro-pastoral comminutes • to alleviate poverty and improve living standard of the Digge sub-zone community	• availability of food • livelihood is reasonably improved to standard • institutions in the project area have developed their skills in project mgt • projects prepared through participatory methods and keeps interest of the pastoralists • poverty status improved in the project area	• food security and livelihood assessment • institutions KAS survey • PRA tools survey • Poverty assessment survey	• Records will be available to the evaluates from the stakeholders • Beneficiaries will be willing to give correct information and to be transparent
Purpose/objective/outcome • To decrease feed shortage • to participate women in backyard poultry p/n • to increase consumption of animal protein for children and lactating mothers • increase income of the Fh/h/hs • increase meat, egg and milk p/n • improve protein requirements of children and lactating mothers • decrease workload of FHH/Hs (Fetching water, collecting firewood, transporting grain to mills etc.) • to increase cultivated land	• carrying capacity of rangelands • amount of egg and milk produced • nutritional status of children • health and performance of animals • hectares of land ploughed • types of transportation services • number of donkeys and camels for transport • number of community member with job opportunities	• productivity trend reports • KAS survey • Milk production records • Mkt survey • Income expenditure analysis and wealth ranking survey • Statistical data reports • Pie charts for household food supply and feeding habits • Hath records and nutritional assessment survey	
Outputs • To grow 4400 quintals of palatable grass • Constructed office and veterinary clinic • recruited staff (drive, veterinary technician, computer operator, and finance head) • Trained staff in project mgt, accounting, computer operation • Computer and other office equipments at site • 3200 pullets, 500qts of poultry feed, 300 water and feed troughs distributed • 150 women trained in poultry production and 300 in dairy goats husbandry • 300 dairy goats distributed • veterinary drugs supplied	• amount of eggs, and milk produced • carrying capacity of the rangeland • improved health and performance of animals • hectares of land plowed by camels • number of animals	• reports and financial forms and receipts • household interview • vet records • survey on mgt practices	

Narrative summary	Indicators	Verification	Risks and Assumptions
Activity • area enclosre and enrichment of the grazing land (Rangeland development 2000ha's enclosures and sowing with native grass seeds) • watering pint development (two water points with distribution systems) • improved animal production and income generating activities (Distribution of dairy goats to 240 FHh/hs, Training on dairy goats to 240 FHh/hs, Distribution of poultry (chickens, feed and housing) to 130 FHh/hs, Training on poultry to 130 FHh/hs, Distribution of female donkey to 40 FHh/hs and Distribution of male camel to 30 MHh/hs) • veterinary services (Employment of two animal health technicians and provision of regular vet care) • institutional capacity building (construction of office and supply of necessary office equipment, materials and supplies, recruitment of essential staff, exposure of the project staff to technical and administrative knowledge in various fields and regular training of local community)	**Inputs** • 100 quintals native grass seeds • 2 animal health technicians • 1200 dairy goats • 2000 poultry chickens • 175 qt poultry feeds • 130 set of poultry equipments (water and feed trough), housing materials) • 40 female donkeys • 30 male camels		

RANGELAND DEVELOPMENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • To decrease feed shortage • Livestock body condition improved • Milk production increased • 100 farmers develop skills in rangeland mgt	• improved livestock productivity • number of skilled/awareness created farmers in rangeland and livestock mgt and production • quality of produced milk in the project area and lifespan • carrying capacity of rangelands • grass yield will increase to 2.2 qts/ha • milk yield/lactation period of cows will be increased to 400 lts • improved body condition of animals • reduced livestock losses due to mortality from 25% to 15%	• productivity trend reports • KAS survey • Milk production records • Demand and supply and Mkt survey • Biomass/TLU survey • Animals body observation and Caracas weight measure • Income expenditure analysis and wealth ranking survey • Statistical data reports • Pie charts for household food supply and feeding habits • Health records and nutritional assessment survey	• records will be available to the evaluates from the stakeholders • beneficiaries will be willing to be transparent
Outputs • to grow 4400 quintals of palatable grass • to rendered effective and efficient animal health services • to develop skills of best rangeland resources utilization and livestock husbandry	• quantity of biomass harvested • number of livestock grazing in the enriched rangeland • number of trained farmers • 610 TLU as feed reserve for the critical dry season	• reports and financial forms and receipts • household interviews • vet records • survey on mgt practices	
Activities • rangeland development (2000 ha's enclosures collection and re-sowing with palatable, fast growing, drought resistant, native grass and accepted by the pastoralists seeds) • construction of veterinary clinic, supply of drugs and medicines and employment of animals health technicians • training of farmers on rangeland management • training on animal health for 8 days	**Inputs** • 100 quintals native grass seeds • 2 animal health technicians • equipments and materials for water point development and distribution channel construction • equipments materials for enclosing 2000 ha grazing land		

WATER COMPONENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • to prove safe and clean human and animal consumption water • to decease the workload of the female sex/gender • fuel, salary of the motor operator and other expenses covered •	• discharge rate 12 liter/sec Bisha liter/sec at Girjinay • status of Human and animals health • status of female workload • water system is operating well	• water hygiene, sanitation, operation, maintenance survey and records • financial records • human and animal health records • gender assessment calendars • community satisfaction rate assessment	• records will be available to the evaluates from the stakeholders • beneficiaries will be willing to give correct information and to be transparent
Outputs • two boreholes drilled at Bisha and Girjinay • water committees who run the water system elected by the community • traffics payment for the service development and collected	• number of drilled boreholes\ • water committees KAS to water management, hygiene and sanitation • develop traffics and its financial payment records • 0.10 cents/head sheep/goat	• observation • semi structured interview with the committees • KAS survey • Statistical and financial records	
Activities • Borehole drilled • Development of water committees Cashier/Treasure, secretary, chairman Hand Pump Caretaker, and Technical Officer • Water service charge development (water tariffs)	**Inputs** • Contractor water drilling company • Participation of the community • Willingness to pay for the service charge		

CAPACITY BUILDING COMPONENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • Constructed and operational office • Skilled staff in computer operation, project mgt, and accounting •	• operational project office • standard financial and project management reports • number of staff who develop skills and knowledge and changed their awareness by the training program	• office supplies observation • reports and project implementation documents and view of NDF • KAS survey	• Records will be available to the evaluates from the stakeholders • Beneficiaries will be willing to give correct information and to be transparent
Outputs • Constructed office and veterinary clinic • Recruited staff (driver, veterinary technician, computer operator, and finance head) • Trained staff in project mgt, accounting, computer operation • Computer and other office equipments at site	• Two offices 4 x 4 constructed • One computer with accessories is in the project area • Office furniture and other office equipments available at the project area • Number of staffs recruited • Skills of the staff in project mgt, accounting, computer operation • 3 staff Trained on rangeland mgt for 14 days in Kenya • improved internal financial mgt and reporting	• building/developed infrastructure observation • reports and project implementation documents and view of NDF • KAS survey	
Activities • Construction of office and veterinary services • supply of office equipments and furniture • recruitment of staff (driver, veterinary technician, computer operator, and finance head) • staff training in (project mgt, accounting, computer operation) • local community training in administrative capacity building	**Inputs** • computer with accessories • recruitment of 3 staff • construction materials for building office		

DAIRY GOATS COMPONENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • milk production increased • to improve Nutritional requirements supply of animal protein to children and lactating mothers • female headed households income increases • children and lactating mothers health status improved	• improved dairy goats productivity • number of skilled /awareness created farmers in dairy goats mgt and production • quality and quantity of produced milk • sustainable dairy goat production • decreased price of milk in the market in the project area • increased income of female headed households • number of beneficiaries in dairy goat production • increased availability of milk for home consumption • health and nutritional status records of children and lactating mothers	• productivity trend repots • KAS survey • Milk production records • Mkt survey • Income expenditure analysis and wealth ranking survey • Statistical data reports • Pie charts for household food supply and feeding habits • Health records and nutritional assessment survey	• Records will be available to the evaluates from the stakeholders • Beneficiaries will be willing to give correct information and to be transparent
Outputs • To distribute 1200 dairy goats to 240 female headed household beneficiaries • To rendered effective and efficient animal health services to the dairy goats • To develop skills of best dairy goat husbandry practices	• Number of distributed dairy goats • Number of dairy goats package beneficiaries • Number of dairy goats have got a chance to veterinary services • Number of farmers who have developed skills of dairy goats husbandry	• Reports and financial forms and receipts • Household interviews • Vet records • Survey on mgt practices	
Activities • Distribution of dairy goats • Farmers training on dairy goats husbandry • Drugs and vaccines services given	**Inputs** • 1,200 dairy goats • 240 beneficiaries female headed household • drugs and vaccines, animal health technicians and vet equipments		

POULTRY PRODUCTION COMPONENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • egg production increased • to improve Nutritional requirements supply of animal protein to children and lactating mothers • female headed households income increases • children and lactating mothers health status improved	• improved poultry productivity • number of skilled/awareness created farmers in poultry mgt and production • quality and quantity of produced egg • sustainable poultry production • decreased price of egg in the market in the project area • increased income of female headed household • umber of beneficiaries in poultry production • increased availability of egg for home consumption • health and nutritional status records of children and lactating mothers	• productivity trend repots • KAS survey • egg production records • Mkt survey • Income expenditure analysis and wealth ranking survey • Statistical data reports • Pie charts for household food supply and feeding habits • Health records and nutritional assessment survey	• Records will be available to the evaluates from the stakeholders • Beneficiaries will be willing to give correct information and to be transparent
Outputs •	• Number of distributed poultry • Number of poultry package beneficiaries • Number of poultry have got a chance to veterinary services • Number of farmers who have developed skills of poultry husbandry • % survival rate of the distributed animals	• Reports and financial forms and receipts • Household interviews • Vet records • Survey on mgt practices	
Activities • Distribution of pullets (foyomi breed) • Number of household beneficiaries • Distribution of poultry feed • Number of household beneficiaries • Distribution water and feed troughs • Distribution of housing materials • Fh/h/hs farmers trained • Regular vaccination, vitamins and antibiotics provided to beneficiaries • Training to beneficiaries for eight days • Monitoring and evaluation	**Inputs** • 1950 poultry birds • 3200 pullets, • 500 qts of poultry fee, • 300 water and feed troughs distributed • 150 women trained in poultry		

DONKEY COMPONENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • to decrease workload/save energy of female headed households • to improve the transportation services of female headed household •	• number of skilled/awareness created farmers in camel mgt • decreased workload of females in the project area • saved time and energy • income generated due to the donkeys	• income expenditure analysis and wealth ranking survey • statistical data reports • time and energy use colanders • seasonal calendars • KAS survey	• Records will be available to the evaluates from the stakeholders • Beneficiaries will be willing to give correct information and to be transparent
Outputs • To distribute 40 female donkeys to 40 female headed household beneficiaries • to rendered effective and efficient animal health services to the donkeys • to develop skills of best donkeys mgt	• number of distributed donkeys • number of donkey package beneficiaries • number of donkeys have got a chance to veterinary services • number of farmers who have developed skills of donkeys mgt	• reports and financial forms and recipes • household interviews • vet records • survey on mgt practices	
• distribution of donkeys • farmers training on donkeys mgt • drugs and vaccines services given	**Inputs** • 30 donkeys • 30 beneficiary female headed household • drugs and vaccines, animal health technicians and vet equipment		

CAMEL COMPONENT

Narrative summary	Indicators	Verification	Risks and Assumptions
Goal			
Purpose/objective/outcome • area plowed for crop production increased • minimize energy loss for transportation and caring goods • increase poor male headed household income	• number of skilled/awareness created farmers in camel mgt • increased plowed land area • income generated due to the camels • amount energy and time saved	• income expenditure analysis and wells ranking survey • statistical data reports • time and energy with commanders • signal calendars • KAS survey	• Records will be available to the evaluates from the stakeholders • Beneficiaries will be willing to give correct information and to be transparent
Outputs • To distribute 30 camels to 30 poor male headed household beneficiaries • to rendered effective and efficient animal health services to the camels • to develop skills of best camels mgt	• number of distributed camels • number of camels package beneficiaries • number of camels have got a chance to veterinary services • number of farmers who have developed skills of camels mgt	• reports and financial forms and receives • household interviews • vet records • survey on mgt practices	
Activities • distribution of camels • farmers training on camel mgt • drugs and vaccines services given	**Inputs** • 30 camels • 30 beneficiary poor male headed household • drugs and vaccines, animal health technicians and vet equipment		

ANNEX 10
LIST OF PERSONS MET

List of Village administration

Name	Place
Bakash Abdela	Tekreret
Berhane Telesembet	Tekreret
Humed Yacob	Adi-Ibrihim
Abdela Saleh	Adi-Ibrihim
Mohammed Omar	Girjinay
Ali Omer	Adi-Shekalamin
Mohammed	Jimel
Kassa Sedege	Jimel
Mohammed Saleh	Mogoraib
Saleh Abdela	Mogoraib

List of people met

- Suleman MehamedAli (Vice Administration of Agordat Sub zone)
- Afet Saleh (National veteran women association Agordat sub-zone)

Adi-Ibrahim

Name

- Humed Yacob (Adi-Ibrahim)
- Abdela Saleh
- Osman Kerar
- Idris Ata
- Humed Osman Belal
- Idris Beyed
- Abdela Idris
- Haj Yacob
- Fatna Idis

Project staff for (IDA + NDF)

Name	Position
Daniel Yohannes	Project Implementation Manager
Abubeker Osman	Project coordinator
Tesfalem Began	Veterinary technician
Kesete Gebresselassie	AHA (Girginai)
Senait Asmelash	Accountant
Almaz Mehari	
Almaz Habtom	Cashier
Teklit Debesai	Driver
Dr. Teklezghi	Technical support

ANNEX 11

PROBLEMS AND PRIORITIES RANKING

Site 2 (TEKRERET)

Priority ranking:

- Spate range
- goat
- credit (fattening, trade)
- education

Goat is the best for rehabilitation, but feed should be available even though irrigation

site 3 (JIMEL)

group
priority ranking:

water fotr livestock spate
range
veterinary
spate cropping
goat
Health (puplic)

site 4 (GIRGINAI)
Group

Water
Range
priority for livestock

- vet.
- water
- feed

SITE 4

GOAT

Priority problem ranking in goat model by women

Women:	1	2	3	4	5	6	7	8	9	10	11
1st	Feed	House	House	Fed	Fed	Herd	House	Herd	Herd	Herd	Feed
2nd	Water	Feed	Fed	Water	Water	Herd	Fed	Fed	Fed	Feed	Water
3rd	Herd	Herd	Water	Herd	Herd	Fed	Water	Water	Water	Water	
4th		-	Herd	Herd	Herd	Water	Herd	-	-	-	

Women 11 has no son

Feed –irrigation house theft, hyena (fund needed)

Milk- if fed 1 liter
If not only kid

They feed cereal:

- because goats come home
- because milk increase

SITE 3

1st water
range
spate irrigation
4th goat

Net service very low

Emphasis- to increase productivity- no movement

SITE 1 (Bisha- Adi-Ibrihim)

1st Livestock (but water and feed are essential, irrigation forage such as bersem.

2nd Water for people

3rd Job certain

4th credit (e.g. for livestock trade, fattening)

SITE 1 additional priorities by women

WOMEN BISHA	WOMEN ADI-IBRIHIM
School up to 8th grade	Water
Health	Sanitary
Water	Transport
Sanitary	Health
Fence for fields	
More tractor	
Electricity	

Site 4 priority group

1st spate	livestock problem
2nd Livestock water	feed
3rd range	health
	water

Goat more important than cattle - easy in feed

ANNEX 12

SITUATION OF THE DAIRY GOAT DISTRIBUTED

Table 12.1 situation of the dairy goats distributed in 11 households in Girginai (site 4)

Women Nr.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Year received	2002	2002	2002	2002	2003	2002	2002	2002	2002	2003	2003
• Goats	7	7	7	7	7	7	7	7	7	5	7
• Died											
• Disease		1			1	5	1			1	1
• Theft		2									
• Predator			4	3					1		
• Sold for :											
• food	1		1		1		1	3	1	1	1
• medicine	1						1				
• herding fee	1	1			1	1					
• house repair							1			1	1
• tractor ploughing					1				1		
• slaughter			2		1						
• abortion	1	3		4		1	1	1			
• kid mortality											
• flock size now	7	8	5	8	12	4	10	12	7	3	9
• doe	4	5	3	6	10	2	8	6	4	3	5
• grower	3	3	2	2	2	2	2	6	3	-	4
• buck											

Relevance: (i) The women stated that it is most important and that they service on it

(ii) The size of goat flock should be 20-25 does to effectively support livelihood

ANNEX 13

LIVESTOCK OWNERSHIP

Average livestock ownership by household in Village Kebabis

Site 2 (Tekreret) Household ownership by category

Status	Number of livestock owned by spp (either)				
	Cattle	**Goat**	**Sheep**	**Camel**	**HH (nos)**
Rich	30	150-200	100-150		10
Medium	7-10	40	20		50
Low	1-3	5-15	1-2		200
Lowest	-	2-7	-		300
Without	-	-	-		440

Site 3 (Jimel) Household ownership by category

Status	Number of livestock owned by spp (either)				
	Cattle	**Goat**	**Sheep**	**Camel**	**% of total HH**
Rich	10	200	-	7	10
Medium	-	50	10-15	-	30
Low	-	2-10	1-3	-	15
Lowest	-	2-5	-	-	20
Not owing	-	-	-		35

- As livestock decreased poverty grew
- Poor agriculture production performances reduces livestock-sell to buy food this is why it should be integrated (NPA)
- Livestock are capital, insurance, indicator of good livelihood
- Goat is the most important animal

Site 1 Household ownership by category

Status	Number of livestock owned by spp (either)				
	Cattle	**Goat**	**Sheep**	**Camel**	**HH (nos)**
Rich	30	50	50	5	29
Medium	5	30	30	1	200
Low	1-2	10	5	0	250
Lowest	0	3-5	0	0	300
Not owing	0	0	0	0	35
Total					814

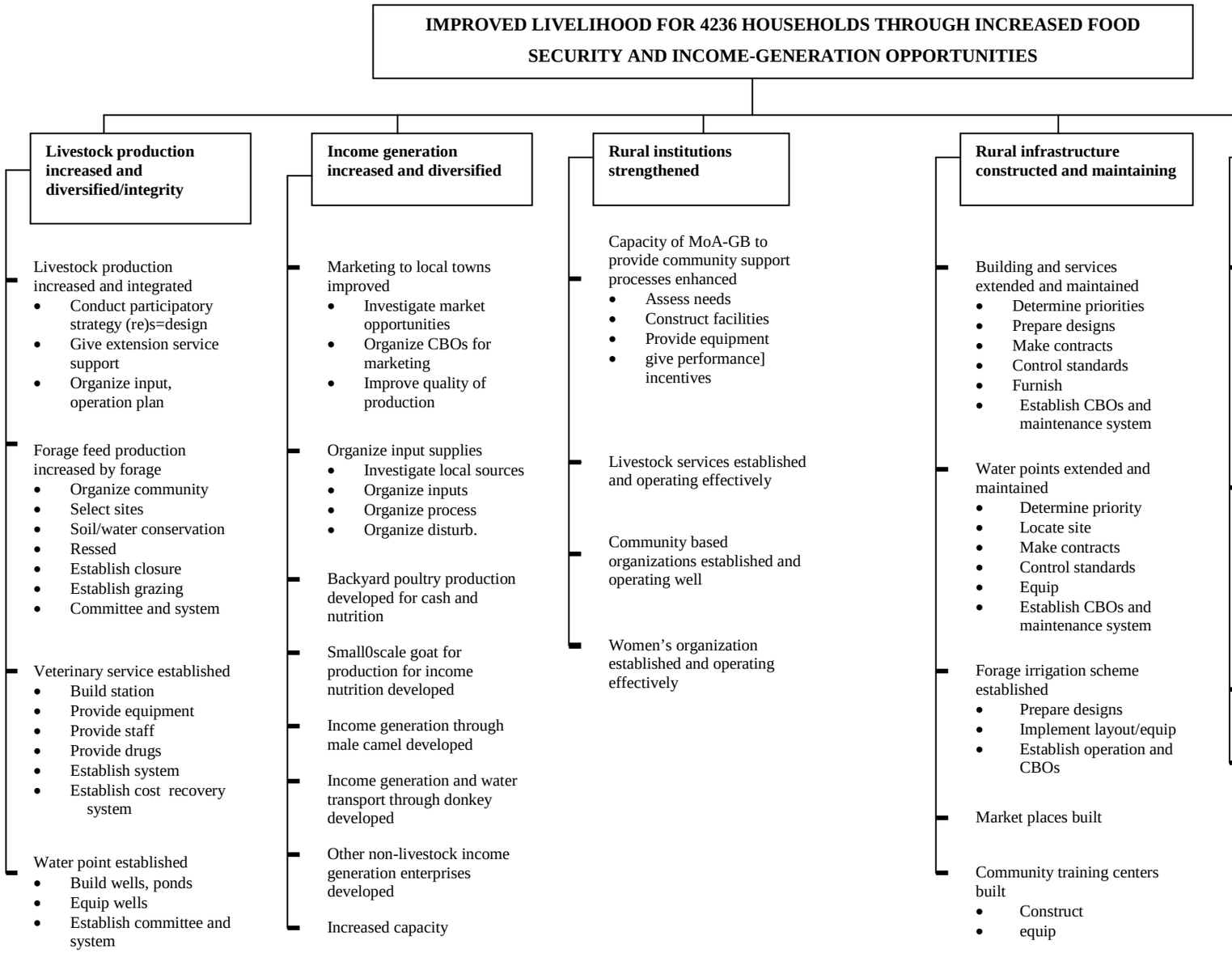
ANNEX 14

AVERAGE HOUSEHOLD BUDGET (5 members)

Item	Unit	Units	Value	
			Unit	Total
• sorghum drain	Kg	600	4.5	2700
• clothing				
o adult:				
@ 2 pairs/year/person	(nos)	4	130	520
o children:				
@ 3 pairs/year/person	(nos)	9	50	450
• shoes				
o adult:				
@ 2 pair/year/person	(nos)	4	20	80
o children				
@ 2 pair/year/person	(nos)	6	15	90
• coffee	(kg)	9	100	900
• sugar	(kg)	144	7.5	1,080
• cooking oil	(liter)	36	30	1,080
• ginger	(kg)	3.6	60	216
• onion	(kg)	36	6	216
• chilly powder	(kg)	3	60	180
• tomato	(kg)	150	6	900
• milk	(Liter)	547.5	6	3,285
• meat	(kg)	60	50	3000
• vegetable mix (pumpkin, bamia, potato)	(kg)	150	6	900
• water @ 2 Jery can/day	(nos)	730	0.10	73
• kerosene	(liter)	55	6	330
• soap @ 6 pcs/month	(nos)	72	6	432
• salt	(kg)	8	5	40
• fuel wood @ 2 camel loads/month	(nos)	24	50	1200
Total				**17,672**

ANNEX 15

VISUAL OVERVIEW PROJECT OBJECTIVES



Evaluation of Integrated Livestock and Rangeland development Project (MoA).
an external evaluation of the project for the period 2001-2004 was conducted by an external evaluation team.
A summary of the conclusions:

- The project has been operative from 2001 to 2004. It was planned to start in 1997, but was delayed due to government policies on NGO's in Eritrea and the war with Ethiopia.
- The project area was selected on the basis of its potential livestock resource base and the context of high levels of food insecurity and poverty. The area is the former Digge subzone.
- The project has achieved most of its objectives to the expected extent at the time of the evaluation. It is also in progress to achieve its remaining objectives and goals. The project is expected to be socially, financially, technically and environmentally sustainable. The communities involved, and in particular the women have recognized the important role that the project plays to improve their livelihoods.
- The households involved in the poultry, dairy goat and camel components have increased their incomes to the extent expected at the time of evaluation.
- The poultry and dairy goat components have improved family nutrition. 605 women have received 22 chickens and 792 beneficiaries have received goats.
- The donkey component has already relived women beneficiaries from hard work and is generating a limited income to the household.
- The water component has achieved its immediate objectives at least in some of the project sites.
- The rangeland and veterinary components were in the process of achieving their specific objectives

Recommendations:
- The project management capacity should be systematically upgraded. Present organisation has inadequate operation mechanism and the project staff are wasting valuable time and funds to go to Barentu for petty matters. It is advisable to provide technical assistance to train personnel on technical and managerial matters.
- The veterinary stations must be improved and the veterinary delivery system must be improved to allow adequate access to farmers. For reasons of sustainability community based recovery of operational costs must be gradually introduced as it has been on the water component.
- The poultry feed problem must be addressed. A small-scale feed preparation facility must be considered. A sustainable chick supply system should be established in the project area.
- The present flock size on dairy goats is too small and the women beneficiaries are facing a problem of herding.
- A monitoring and evaluation system should be established
- The second phase should focus on consolidate what has been achieved rather than expanding to other areas.

- The project has entered a second phase planned from 2005 to 2007. MoA and DF have discussed and tried to include a lot of the recommendations. The project management capacity and technical competence were improved during 2005. It has been agreed that the project should end 31st of December 2007 and that focus in the second phase should be on achieving sustainability. A new project in a different area was planned to start in 2007.
- However the project has been suspended from March 2006 due to DF's problems on getting approval to continue to work as an International NGO in Eritrea.