

ERITREA: NAPA PROJECT PROFILE

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ERITREA

NAPA PRIORITY PROJECT 1

INTRODUCING COMMUNITY BASED PILOT RANGELAND IMPROVEMENT AND MANAGEMENT IN SELECTED AGRO-ECOLOGICAL AREAS IN THE NORTH WESTERN LOWLANDS RANGELAND

PROJECT AREA

The north-western lowland, a hot arid region with extreme rainfall variability and frequent drought years, is the geographic focus for this project. The vegetation is of the savannah type and the topography is flat plain crossed by major ephemeral rivers flowing from the central highland area. The populations are pastoralists, hence their livelihood is almost exclusively dependent on livestock. The production system is featured with extensive seasonal movement to cope with shortage of feed and water. However, the system is becoming less sustainable and as a result the pastoralists are impacted by the low animal productivity and because many animals are lost due to starvation and lack of drinking water. The rangeland, the pastoral system and the livelihoods of the pastoralists in the project area are highly vulnerable to climate variability, extreme events such as drought and climate change. The most vulnerable populations in the project area are those thriving in the Kerkebet area. In general, 6 villages, 200 HH/village and 20,000 ha of rangeland will be covered by this project.

RATIONALE

The pastoralists in the project area are dependent on livestock for their livelihood. The extensive livestock production system has however failed to sustain their livelihood because the productive and reproductive efficiencies have been declining progressively and direct losses of animals due to lack of feed and water during the dry season and drought years have been increasing. The rangeland has been negatively affected by climate variability, drought and climate change where the total biomass has been decreasing sharply and the nutritive plant species have been replaced by plant species and associations of less nutritive value. The traditional coping practice of animal movement in search of water and feed has been disturbed by land use change and climate variability. As a sequel to this, the rangeland is currently unable to sustain profitable livestock production and because of this the system is not capable to sustain the livelihood of the pastoralists. This project has been designed to adapt the livestock system into the new conditions produced by climate variability and frequent droughts. The strategy is to increase feed and water supply for the long dry season and establish community based rangeland management system. This is expected to improve the productive efficiencies of the livestock and decrease the direct losses of animals due to starvation and thirst. In this way, the pastoral system will be intensified, avoiding long distance movement, to become more sustainable allowing also the pastoral households more time for other activities.

DESCRIPTION

Objectives:

The immediate objectives are to:

- improve rangeland productivity;
- improve livestock productivity (milk and meat);
- increase incomes of the pastoralists;

through these:

- establish livelihood of the pastoralists on a sustainable basis;
- improve nutrition of the population and in particular children.

Activities:

1. Preparing detailed strategy design and implementation plan;

2. Construction of soil/water conservation and small stream diversion structures on the rangeland;
3. Reseeding of the rangeland with suitable grass and legume species;
4. Constructing water points and equipping them;
5. Establishing community based rangeland and water management systems;
6. Training of communities in managing their resources;
7. Providing mineral supplement to improve animal nutrition;
8. Providing machinery for forage conservation and rangeland maintenance;
9. Monitoring and evaluation.

Short-term outputs

1. Strategy design prepared;
2. Sustainable forage supply system established;
3. Water supply system present;
4. Forage conservation system established;
5. Community institution for resources management established;
6. Local personnel trained for specific skills available;
7. Monitoring and evaluation system established.

Potential long -term outcomes

1. Pastoral communities will be able to cope with climate change by adapting the conditions of feed and water supply to become sustainable;
2. Establishing improved livestock production model through intensification of the pastoral system;
3. Improve food security and nutrition through increased incomes and food availability;
4. Reduce poverty.

IMPLEMENTATION

The main implementing body will be the Ministry of Agriculture through its regional office and its structure. The communities and the local government will participate in preparing the strategy design, implementing and monitoring and evaluation.

Risks and Barriers

Key risks are associated with Rangeland allocation for specific community use avoiding free access of others, as well as the technical Capacity of the Ministry of Agriculture.

Monitoring and Evaluation

The project will prepare a monitoring and evaluation system and this function will be jointly carried-out by the Ministry of Agriculture, the community and the local government.

Project duration

3 years starting from the time funds made available.

COST

The project will be the main source of finance; however, the Ministry of Agriculture will contribute for certain activities such as extension services and the local government in organizing the communities.

USD 7,230,000

Cost estimates to improve rangeland for sustainable livestock production

Project Components	Cost (USD)
Preparation of detail strategy design	120 000
Soil/water conservation on rangeland	2 800 000
Small stream diversion structures	1 300 000
Reseeding	900 000
Padlocking	1 100 000
Machinery	700 000
Construction and equipping water points	240 000
Establishing community institution	40 000
Monitoring and evaluation	30 000
Total	7 230 000

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NAPA PRIORITY PROJECT 2

INTRODUCING COMMUNITY BASED PILOT PROJECTS TO INTENSIFY EXISTING PRODUCTION MODELS, AREA AND SPECIES SPECIFIC IN EASTERN LOWLANDS SELECTING SUITABLE SHEEP AND GOAT BREEDS

PROJECT AREA

An eastern coastal lowland area, the most arid in Eritrea, is the geographic focus of this project. Rainfall in this region is generally very low and with extreme variability and frequent droughts. The vegetation type is of the steppe and desert like shrubs; while the topography is flat plain intercepted by some hills. The plain is crossed by several ephemeral rivers and streams flowing from the eastern escarpment and highlands. The pastoralists move towards the escarpments during the dry hot season as a coping mechanism for shortage of feed and water. The population in these coastal areas is basically pastoralist and their livelihood is dependent on livestock. The livestock species raised are mainly browsers such as goats and camels; while the grazers such as cattle are increasingly becoming insignificant source of livelihood. The cause for this is the progressive decline of grasses due to climate variability and drought. The livestock numbers are also continuously decreasing due to lack of feed and drinking water and considerable number of them dying each year. In these areas, livestock productivity is poor and the trend is negative. The rangeland is unable to sustain livestock and as a result the livelihood of the population is very vulnerable to climate change. In the project area, the most vulnerable populations are those communities living between Zula and Tio areas. Generally, six villages, 1200 Households (HHs), 6000 population, 400 ha/village, and 6 spate irrigation sites in the eastern lowlands will be covered by this project.

RATIONALE

The pastoral system in the project area is failing to sustain the livelihood of the pastoralists. This is because the rangeland is vulnerable to climate variability, drought and climate change. The extensive pastoral system of production in the project area is not any more sustainable and the communities have failed with their coping mechanism which involved seasonal animal movement between their villages in the lowland and the corresponding eastern escarpment. The composition of animal species had been altered where grazers are not produced any more except some desert type sheep breeds. The only animal species that are being able to resist the impacts of climate variability and drought are some varieties of goats and sheep. The exiting extensive livestock system and production models should be intensified to the degree that they are sustainable and have the capacity to become sustainable source of livelihoods. The general coping strategy should be by using the most efficient varieties of goat and sheep, keeping their numbers to correspond the available feed and increasing the individual animal productivity. This project is designed to enable the pastoralists to cope with the impacts of climate variability, drought and climate change by intensifying the pastoral system. The elements of the strategy will be by using selected varieties of small ruminants that are more suitable for the project area that is vulnerable to climate change. The system will be further intensified by producing feed under spate irrigation and providing drinking water sources.

DESCRIPTION

Objectives

1. Increase incomes of the population by reducing direct loss of animals due to lack of feed and water and by increasing individual animal production and productivity efficiency through the use of selected breeds and improved management;
2. Improve nutrition of the population by producing protein food of high biotic value such as milk and meat;
3. Enable the communities to cope with the current impacts of climate variability and drought and future climate change.

Activities

The main activities will include selection and breeding of suitable varieties of indigenous goat and sheep breed types, evolving suitable breeding males, establishing sustainable animal feed and water supply, and organizing and training of communities.

1. Selecting dual purpose breeding goats;
2. Selecting sheep for higher mutton production;
3. Selecting suitable forage seeds;
4. Providing tools for pasture maintenance;
5. Establishing community based pastures under spate irrigation;
6. Constructing spate irrigation structure;
7. Training farmers on spate irrigation pasture management and overall small ruminant production system;
8. Establishing community based institution and providing with the required infrastructure.

Short-term outputs

1. Goat varieties with high milk and meat production established;
2. Sheep varieties with high meat productivity established;
3. Forage production under spate irrigation system established;
4. Community based institution formed;
5. Farmers have acquired skills in animal production;
6. Farmer have acquired skills in forage production;
7. Farmers trained in milk and meat production.

Potential long -term outcomes

1. Sustainable coping of livelihood with impacts of climate change;
2. Food insecurity and poverty reduced.

IMPLEMENTATION

Implementation arrangement will be mainly the Ministry of Agriculture branch in Zoba Northern Red Sea, agricultural research, and other participating bodies will be the Zula communities, and local government.

Risks and Barriers

Key risks are associated with land allocation for communities to be spate irrigated, as well as the technical capacity of the agricultural office in Zoba Northern Red Sea.

Monitoring and Evaluation

The project design will contain monitoring and evaluation system. The responsible agency for monitoring and evaluation will be the agricultural office in Zoba Northern Red Sea and the beneficiary communities.

Project duration

3 years starting from the time funds made available.

COST

USD 5,077,000

Cost estimates for developing and utilizing suitable sheep and goat breed types

Project Component	Cost (USD)
Breeding animals (1200 HHs @ 12 animals)	800 000

Spate irrigation structure (5 villages)	3 000 000
Earth moving machinery	400 000
Construction water point (5 wells + equipment)	150 000
Farm tools	12 000
Forage seeds (1200 ha) 4 kg/ha	240 000
Community infrastructure and training	120 000
Monitoring and evaluation	25 000
Detail strategy design	90 000
Project management	240 000
Total	5 077 000

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NAPA PRIORITY PROJECT 3

ENCOURAGE AFFORESTATION AND AGROFORESTRY THROUGH COMMUNITY FORESTRY INITIATIVE

PROJECT AREA

The whole country is vulnerable to this climate related impact on forests. However, populations in the highland area are already suffering from the shortage of wood for cooking and house construction purposes and for this reason these areas are the geographic focus for this project. Forest goods and services are important sources of livelihood in Eritrea. However, these are made to be vulnerable to climate change mainly through human activities. Most parts of the highland Eritrea are highly degraded due to continuous absence of natural resources management resulting into deforestation, climate variability characterized with low and variable rainfall, as well as extreme events such as droughts and climate change.

The most important trend is desertification, loss of topsoil and lowering water penetration and retention of soils. The livelihoods of the populations in the western lowland area and in particular those in the main river basins (Barka River and tributaries, Gash River) and the south-western lowland are suffering from declining supply of goods and services obtained from forests. Although this is well recognized and that efforts have been made to reforest through cash and food-for-work, students summer campaigns, national development campaign etc...in the last 15 years, the success is minimal as compared to the magnitude of deforestation rate. Therefore, in order to address full participation of the entire communities at individual households/ families/ levels is needed to plant and grow trees in different settings.

RATIONALE

The impacts of climate change and variability, compounded with distractive human actions on the forest resources, have led to the loss of biodiversity, as well as wood and none wood products and services. Such problems will continue unless wider participation of the individuals, households and the entire rural and urban communities is secured in planting and maintaining trees in their respective areas.

In the Forest policy and legislation, provisions are made to secure trees for the person who has planted and maintain them on areas designated to use the land in accordance to the Eritrean Land Law No 58/1994. Therefore, the plan is that each village will allocate part of the marginal land under community use such land to be holding of individual households of the village. These holdings will be planted and grow trees, and use them accordingly. Similarly planting trees will be promoted by communities along homesteads, roadsides, school compounds, sacred areas, cemeteries, parks, river banks, scenic sites, farm boundaries and the like.

DESCRIPTION

Objectives

The immediate objectives are to:

1. Rehabilitate degraded landscapes through afforestation, and control run-off and loss of arable land on down stream areas through soil erosion;
2. Create healthy and well managed forest plantations so as to withstand impacts of climate change;
3. Encourage individual households in a community to plant and own trees and produce sustainable wood, fruit and fodder.

Activities

1. Strengthen forest extension system and develop a strong relationship with farming communities through frequent visits and interaction;
2. Assist communities to determine size and boundary of marginal land and to be allocated to individual households in the community for tree planting;
3. Establish new or upgrade existing community forest nurseries;
4. Train the communities to integrate tree planting and management in their farming systems.

Short-term outputs

1. New forestry nursery established and existing nurseries upgraded;
2. Households have been trained;
3. Individual land holding for afforestation distributed;
4. Marginal land has been afforested.

Expected long-term Outcomes

1. Availability of fire wood, construction wood in the rural communities ensured;
2. Production of none wood forest products such fruit, fodder, bee forage etc... enhanced;
3. Degraded catchments protected and rehabilitated;
4. Micro climate of the area improved;
5. Awareness of communities in planting, growing and managing trees increased.

Table summarizing indicators to measure long-term outcomes:

Indicators/Expected Outputs	Potential Long Term Outcomes
<ul style="list-style-type: none"> - Frontline forest extension agents trained and equipped with training manuals - Frequent meetings convened with the local communities and forest development committees in each village established, - Local communities trained on appropriate forestry techniques 	<ul style="list-style-type: none"> - Awareness level of communities on forest conservation and use of trees in ameliorating the effects of climate change raised - Tree planting and maintenance at individual household and community level enhanced
<ul style="list-style-type: none"> - Individual households identify their own plot of lands for tree planting, - Tree planting sites prepared, planted, and maintained by respective households. 	<ul style="list-style-type: none"> - Accessibility of individual households in the rural community to their own wood and none wood forest plantation products increased, - Degraded watersheds resonated, - Downstream water reservoirs protected, - Micro climate of the area improved.
<ul style="list-style-type: none"> - Existing forest nurseries upgraded and new forest nurseries established at strategic sites, - Multipurpose tree seedlings raised/distributed. 	<ul style="list-style-type: none"> - Healthy and vigorous trees established, - Availability of wood and none wood forest products increased.
<ul style="list-style-type: none"> - Multipurpose trees are integrated with crop and livestock production systems (Agro-forestry). 	<ul style="list-style-type: none"> - Increased production of wood, fruit, fodder - Cumulative household income from wood and none wood components increased

IMPLEMENTATION

The project will be based with in the Ministry of Agriculture and will have its own management team and coordinator. The project team will work in collaboration with Regional MoA Branches. Steering committee will be established from different stakeholders to guide the project management.

Risks & Barriers

Key risks are associated with the following

1. A shortage of skilled human power;
2. Conflicting land use (for grazing & tree growing), and the redistribution of arable land to members of the communities every 5-7 years in the highland discourages the development agro-forestry;
3. Insufficient coordination among different stakeholders;
4. Financial capacity to support communities with planting stocks and provision of hand tools;
5. Lack of enforcement for national and regional action plans and regulatory instruments pertinent to forest conservation and development.

Monitoring and Evaluation

Monitoring and evaluation will be carried out on regular bases and more specifically after rainy season and in the late dry season. Village development committees, forest extension agents and subject matter specialists will conduct frequent monitoring and evaluation.

An independent evaluation assessment team will also be selected from the steering committee and conduct evaluation assessment in the middle and final project term

Project duration

5 years starting from the time funds made available.

COST

The total project cost is estimated at USD 5.15 million, out of which USD 150,000 will be for project office. Government contribution will be made for support activities as indicated in the table.

USD 5,050,000

Estimated Cost for Community Forestry Development

Project Components	Cost (USD)
Infrastructure/Civil works (construction of roads, office, community forest nurseries)	1 150 000
Equipment and supplies (Field and office equipment, hand tools, water pumps, vehicles etc)	1 000 000
Community development support (forest extension services)	950 000
Silviculture (seedling production and distribution)	1 100 000
Recurrent costs (Staff salaries, allowances, maintenances etc)	850 000
Total	5 050 000

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NAPA PRIORITY PROJECT 4

GROUNDWATER RECHARGING FOR IRRIGATION WELLS

PROJECT AREA

A decline in groundwater is already being experienced in most parts of the country and in particular in the more arid areas of the coastal plains and certain valleys in the highland such as Tsilma, Adi-Keih, Hagaz and Ala. In these areas, wells are drying up and groundwater supply for continuation of irrigation as well as for livestock and human uses has become critical. These areas are very vulnerable to climate variability, drought and climate change and the focus of this adaptation project.

RATIONALE

Urban and rural communities, irrigated agriculture and industries who rely on ground water resources for their water supply are already suffering from the negative impact of climate variability in particular low and unreliable rainfall, short rainy season, extreme weather events such as drought and climate change. The wells are drying up and the population in some villages are walking long distance to fetch water. Small holder irrigated agriculture from ground water is failing examples are like in Alla and Hagaz are depending on water trucking. Rural inhabitants are paying more than double the price they use to pay coastal areas groundwater sources are threatened with seawater intrusion. So far, no projects have been implemented whose main objective is to enhance ground water volumes as coping mechanizes strategies have not been effective. In Eritrea, about one million cubic meters of water flow out of the country as surface flow. If a substantial amount of this water is allowed to be stored in under ground aquifer as ground water, this will enable communities and livelihood resource to better adapt to the negative impact of climate changes. To cope with this problem and sustain the resource activities to enhance groundwater recharging will be required.

DESCRIPTION

Objectives

1. To enhance ground water recharging.
2. To ensure easily accessible water supply for domestic and agricultural use.
3. To increase spring water supply and protect natural forest and wild animals from extinction.
4. To prevent coastal ground water supply from salt water intrusion.
5. To prevent salt water intrusion to coastal ground water supply.

Activities

1. Develop integrated watershed management programme
2. Construct an effective soil and water conservation structures for farm and non-farm lands
3. Establish ground water monitoring
4. Capacity building of *farmer* MOA and WRD

Short-term outputs

1. Water recharging structures are in place;
2. Community institutions for water use management established;
3. Water supply and demand control legislation present.

Potential long-term Outcomes:

1. Increased availability of good quality and quantity of ground water for urban and rural uses;

2. Increased availability of ground water for irrigation;
3. Quality and quantity of coastal water supply improved;
4. Improved wild life habitats through increased water supply availability;
5. Contribution to food security, health, nutrition, and poverty reduction;
6. Sustainable coping strategy to climate change;

Table summarizing indicators to measure long-term outcomes:

Expected outputs/ Indicator	Potential long term outcomes
Wild life habitats and natural forests maintained. Community based IWPP establishing and functioning effectively. Sustainable ground water resource.	Good quality and quantity of ground water available to urban and rural communities.
Ground water source improved and sustained. Well-maintained and effective terraces constructed, gullies stabilized erosion and stream and river flow reduced substantially.	Make irrigated agriculture sustainable
Monthly report produced to decision makers well informed. Ground water use regulated accordingly	Ground Water Resources are better understood and well controlled. In addition efficiently managed and utilized.
The Technique of ground water recharging well understood and practiced. Capacity of MOA extension agents improved in constructing effective soil and water conservation structures Capacity of farmers improved in construction and maintaining soil and water conservation structures	Soil moisture increased and land productivity increased; adequate spring water is available for wild animals.

IMPLEMENTATION

The national implementing agencies would be the MoA and the WRD. The MoA is the most appropriate body to implement this project. This is because it has a widely spread network of extension agents who are quite experienced in working with farmers. The farmers are the implementing bodies of most of the activities of the project. The WRD will be involved in monitoring ground water resource and in preparing appropriate legislation on management and utilization of groundwater resource.

A project management unit will be established to follow the day-to-day activity of the project. Project steering committees will be formed at national and local level and will consist of executive level officials of respective ministries and community representatives and private stakeholders like NGOs. The duty of the steering committees is to make sure that the project is financially and technically implemented according to an agreed project document.

Risks and Barriers

Key risks are associated with shortage of budget to implement this project, lack of existing national legislation on the proper utilization of ground water delays, and the physical structures constructed to enhance ground water recharging are not properly maintained and managed.

Monitoring and Evaluation

The project will be monitored and evaluated regularly every six months. It will also be evaluated by external consultants at the end of its life relative to the matrix shown below.

Project duration

3 years starting from the time funds made available.

COST

USD 7,252,000

The table below summarizes the costs associated with the implementation of this adaptation project.

Project Component	Cost (USD)
Develop integrated watershed management programme	2 000
Construct effective soil & water conservation structures for farm and non-farm lands (6,000 ha)	5 700 000
Establish ground water monitoring programme	1 500 000
Capacity building of *farmer* MOA and WRD	50 000
TOTAL	7 252 000

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NAPA PRIORITY PROJECT 5

INCREASE AGRICULTURAL PRODUCTION THROUGH SPATE IRRIGATION AND RANGE DEVELOPMENT

PROJECT AREA

The Project site location is in the Northern Western Lowland, which makes part of the lower Barka River Basin, and more specifically it is in the Dighe Sub region of the Gash Barka Region involving villages situated along both side of the funeral Barka River. The area is located between Tekeret and Keru Villages. The area is hot arid featured with low and extremely variable rainfall and high drought frequency. The rangelands-rainfed cropping are highly venerable to climate variability as a sequel to this, livestock production and the populations dependant on these activities are venerable to climate variability, extreme events such as drought, and climate change. In respect to rainfall, the project area falls in the threshold or margin for rainfed-cropping; hence this activity is venerable to the impacts of climate variability and drought.

The populations in the project area consist of Tigre and Hidarbe tribes organized in about five main villages. The average household number in a village is 400, while the average household size is 5persons; while the women headed households make about 30% of the total households. Traditionally, their source of livelihood was Pastoralism; but as the pastoral system has been failing gradually to sustain their livelihood, different autonomous coping mechanisms were practiced. The most important autonomous strategy has been growing drought resistant cereal crops such as Sorghum and Pearl Millet wherever moisture is favourable including riverbeds. In this way, the communities have become agro- pastoralists for the most part. However, frequent crop failure and animal loss are destabilizing their livelihoods.

RATIONALE

The populations in the project area have been suffering from the low productively of the extensive livestock system, and the failure of rain-fed crop. The rangelands have been under continues human pressure, climate variability and drought, which have led in to seriously degradation and land and water use changes. Due to this, the rangeland productivity has reached its lowest point destabilizing the pastoral system. Rain-fed cropping is also failing due to climate variability and successive drought years with tendency of increased frequency and severity. The fail of the mixed crop-livestock farming system has severely impacted the livelihood of the population and their traditional coping strategies have become ineffective. This existing situation has made the farming system and the populations' dependant on it for their livelihood highly venerable to climate viability, drought and climate change.

This project is designed to adapt this vulnerable community to climate variability and drought immediately and to cope with climate change in the long term. The strategy is by intensifying the present practices of agro-pastoralism. It is expected to improve cereal food production and incomes by avoiding crop failure and low livestock productivity including death due to low and variable rainfall and drought. This will involve increase in soil moisture for cereal crop production and for feed productively of the rangeland. Through this the livelihoods of these communities will be sustainable.

DESCRIPTION

Objectives

- Increase food crop production by avoiding crop failer due to climate variability and drought;
- Increase cash income and protein food of animal origin by avoiding direct loss of animals and poor productivity due to starvation;

Strategies

- Establishing spate irrigated cereal crop production system;
- Improving livestock production through improving rangeland;
- Restocking of small ruminants;
- Providing machinery and initial agricultural inputs;
- Establishing community based effective institution.

Activities

- Designing detail strategy and implementation plan;
- Constructing river diversion and earth embankment structures for spate irrigation;
- Providing initial seed, farm tools and machinery for construction and maintenance of spate irrigation and soil and water conservation structures;
- Construction of soil water conservation structures on rangeland;
- Reseeding of rangeland;
- Providing initial good sheep breeding stock for women headed households and the poor in general;
- Constructing water wells and equipping them for human and livestock uses;
- Training communities to manage their resources; and
- Monitoring and evaluation.

Short-term outputs

- Spate irrigated cereal crop production system established;
- Improved rangeland for livestock present;
- Sheep goat breeding flocks for women headed households and the poor present;
- Safe and adequate water supply system established;
- Community organization and management systems made available;
- Initial agricultural inputs present;

Potential long term outcomes

- Coping strategy for agro-pastoralists to climate variability, extreme weather events and climate change have been established on a sustainable bases;
- Sustainable source of livelihood for the agro-pastoralist developed;
- Lesson on adaptation strategies to climate change and climate variability have been learned to enable replication at wide scale; and
- Decreasing food insecurity/malnutrition and poverty levels.

Implementation Arrangements

The main implementing body will be the Ministry of Agriculture through its Regional Agricultural Office in Gash-Barka Administrative Region. Other relevant stakeholders will be the target communities, local administration, the Ministry of Land, Water and Environment. The arrangement will be within the organizational structure of the stakeholder bodies.

Risks and Barriers

- Capacity of the Ministry of Agriculture for implementation;
- Capacity to prepare detail strategy design; and
- Land tenure and use for each of the village communities for purposes of spate irrigation and rangeland development.

Monitoring and Evaluation

The monitoring and evaluation system will be designed with the project strategy design. It should be established and implemented to ensure guidance of the project by collection information on problems and deciding on possible modification and adjustment of plan. The regional Agricultural Office in collaboration with the participating farmers will conduct the monitoring and evaluation function.

Financial Resources

The financial contribution will be mainly from the project, however, the Ministry of Agriculture will provide extension services on crop and livestock and in the control of major animal and crop pests. The Local Administration will provide assistance in organizing the agro-pastoral communities. The target communities will provide source of labor, but mostly on cash for work.

COST

USD 8,540,000

Table of Activities and Cost Estimates

Activities	Cost estimates (USD)
(a) Construction of Spate Irrigation Structures (at five sites)	4 200 000
(b) Initial Agricultural Inputs	300 000
(c) Construction of soil water conservation structures on rangeland (2500ha)	2 600 000
(d) Livestock breeder stock for women headed households/poor households	400 000
(e) Machinery for construction and maintenance of enhancements	600 000
(f) Community capacity building	160 000
(g) Detail Project design preparation	130 000
(h) Monitoring and Evaluation and related project management	150 000
Total	8 540 000