United Nations Development Programme

Annotated Project Document template for nationally implemented projects financed by the GEF/LDCF/SCCF Trust Funds

Project title: Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Nakfa sub-Zoba, Northern Red Sea Region of Eritrea		
Country: Eritrea	**Implementing Partner:** Ministry of Local Government (MoLG) **Responsible Parties:** Northern Red Sea Regional Administration (NRS Local Government) Forestry and Wildlife Authority (FWA) Ministry of Land, Water and Environment (MoLWE) Ministry of Agriculture (MoA)	**Management Arrangements:** National Implementation Modality (NIM)
SPCF/Country Programme Outcome: *By 2021, environmental and natural resources management is gender responsive, and sustainable, negating the impacts of ecosystem degradation, climate change, and strengthening community resilience to disasters.*		
UNDP Strategic Plan Output: 1.3: *Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste;* **1.4:** *Scaled up action on climate change and mitigation across which is funded and implemented*		
UNDP Social and Environmental Screening Category: Moderate	**UNDP Gender Marker:** *2*	
Atlas Project ID (formerly Award ID):00111039	**Atlas Output ID (formerly Project ID):** 00110190	
UNDP-GEF PIMS ID number: 5519	**GEF ID number: 9266**	

Planned start date: 01 July 2019	**Planned end date:** 30 June 2025
PAC meeting date: July 2018*(prior to signing of the PRODOC)*	
Brief project description: There are few options for ensuring food security in Eritrea other than through intensifying agriculture and increasing productivity at the household and farm level. To sustain such levels of agricultural intensification, it is important to maintain and restore local ecosystems, allowing them to continue to provide the ecosystem goods and services necessary to keep land arable and ensure pastoral production remains viable for farmers. The GEF alternative will therefore address sustainable natural resource management issues that would remain largely unaddressed within the baseline scenario. A range of constraints limit the adoption of sustainable natural resource use, land management, forest-use strategies and other practices that yield local-level benefits. Some of these barriers also impede the generation of global benefits, such as those related to conservation of biodiversity and ecosystems and the landscape's ability to sequester carbon. To address these barriers, the project will demonstrate how agricultural development, landscape and ecosystem restoration/rehabilitation and sustainable forest management can be simultaneously achieved with tangible benefits for both the environment and local communities.The project will therefore adopt an approach that seeks to address these barriers and challenges, by adopting a combination of specific technical approaches and interventions at national and local levels, including at farm levels. The solutions advanced by the project strategy are expected to contribute to overcoming some of these barriers and challenges and facilitate the creation of an enabling environment that empowers government institutions, local authorities and land users, including farmers, to adopt and take up sustainable land use practices at the different levels of land and resource use and management.	
FINANCING PLAN (*only cash transferred to UNDP bank account and budgeted under the same GEF project should be included under this section (1), all others should be included under section (2).*	
GEF Trust Fund *or LDCF or SCCF*	USD8,260,607
UNDP TRAC resources	USD 2,500,000
Cash co-financing to be administered by UNDP	USD10,760,607
(1) Total Budget administered by UNDP	**USD 10,760,607**
PARALLEL CO-FINANCING (*all other co-financing that is not cash co-financing administered by UNDP)*	

Government	USD 21,000,000
(2) Total co-financing	**USD 23,500,000**
(3) Grand-Total Project Financing (1) +(2)	**USD 31,760,607**

SIGNATURES

Dr. Giorgis Teklemikael Minister Ministry of National Development Signature:	**Agreed by:** Ministry of National Development	**Date/Month/Year:** 23/07/2019
Woldemichael Abraha Minister Ministry of Local Government Signature:	**Agreed by:** Implementing Partner	23/07/19
James Wakiaga Resident Representative UNDP Eritrea Signature:	**Agreed by:** UNDP (GEF Agency)	23/7/19

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List of Acronyms

CBO	Community-based Organisation
CMIP	Coupled Model Intercomparison Project
CO	Country Office
CSA	Climate-Smart Agriculture
FWA	Forestry and Wildlife Authority
GAP	Gender Action Plan
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GoSE	Government of the State of Eritrea
IBA	Important Bird Areas
ILM	Integrated Landscape Management
INRM	Integrated Natural Resource Management
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resources Management
LDCF	Least Developed Country Fund
M&E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MoLG	Ministry of Local Government
MoLWE	Ministry of Land, Water and Environment
MoMR	Ministry of Marine Resources
MRV	Measurement, Reporting and Verification
NAPA	National Adaptation Programme of Action
NARI	National Agricultural Research Institute
NBSAP	National Biodiversity Strategy and Action Plan
NCSA	National Capacity Needs Self-Assessment
NIM	National Implementation Modality
NTFP	Non-timber Forest Product
NUEW	National Union of Eritrean Women
NUEY	National Union of Eritrean Youth
PIF	Project Identification Form
PIR	GEF Project Implementation Report
PMC	Project Management Cost
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
PSC	Project Steering Committee
RCP	Representative Concentration Pathways
SFM	Sustainable Forest Management
SLWM	Sustainable Land and Water Management
STAP	GEF Scientific Technical Advisory Panel
TEK	Traditional Ecological Knowledge
TOR	Terms of Reference
UAV	Unmanned Aerial Vehicle
UNCBD	United Nations Convention on Biodiversity
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNDP-GEF	UNDP Global Environmental Finance
UNFCCC	United Nations Framework Convention on Climate Change

I. DEVELOPMENT CHALLENGE

Global environmental problems and root causes

Eritrea, located on the Horn of Africa, is endowed with extensive natural resources that have been diminishing as a result of human activity and natural disasters – including increasingly frequent droughts linked to climate change, deforestation and a prolonged 30-year war that ended in 1991. The country is further affected by severe soil erosion and land degradation, with a significant decline in soil fertility and productivity in recent years. Such continuing land degradation renders agricultural production – the only livelihood source for more than 80% of the population – progressively less productive. In response, farmers resort to converting more land for agriculture to compensate for the declining agricultural productivity. The expansion of agriculture exposes more land to water and wind erosion – particularly in the highlands where erosion is already a significant problem – leading to the siltation of rivers, wells and dams[1]. This puts considerable pressure on what little natural resources remain. Valuable habitats for wildlife and plants are also being encroached on, including those of the juniper-olive woodlands and associated vegetation, which are of particular economic, ecological and cultural importance for local people. Over time, this has led to a considerable decline in many important natural resources, including: i) forest cover; ii) wild animals; and iii) bird species[2]; iv) soil; and v) water resources. Such loss of biodiversity and ecosystem degradation – coupled with the impacts of climate change and desertification – have been identified in a recent GEF Country Portfolio Evaluation as the greatest challenges to sustainable development in Eritrea[3].

The proposed project is located in the Rora Habab Plateau, in the Nakfa sub-Zoba, which falls under the authority of the Northern Red Sea Regional Administration. Situated approximately 250 km north-west of Asmara, the Rora Habab Plateau lies between 1,500 m to 2,760 m above-sea-level and extends about 40 km to the south, rising in many places up to 1,000 m above the surrounding countryside. The underlying geology is dominated by neutral to acidic volcanic rock – specifically andesite and trachyte rock – mantled by red clay loam and grey-brown sandy loam soils. The highlands of the Rora Habab Plateau fall under the arid- and moist-highland agroecological zones, with a mean annual rainfall of 300–400 mm and a mean annual temperature of 21.5 °C. Despite these harsh climatic conditions and shallow, highly erodible soils, cultivation and pastoralism are the major economic activities in the region[4]. Although crop cultivation is widespread, increasing population size and demand for food production are placing growing pressure on the land through overgrazing, over-browsing, deforestation and land fragmentation as more land is cleared for agriculture.

Land degradation and deforestation in the Rora Habab Plateau

Although land degradation is pervasive across Eritrea, the central and northern highlands are worst affected, with a degraded area covering ~2.4 million hectares, constituting 19% of the country. The root causes of land degradation in the highland areas have been identified as high population densities, overgrazing, deforestation, recurrent droughts, steep gradients, torrential

[1]Government of Eritrea. 2008. Action Plan for Integrated Water Resource Management (IWRM) in Eritrea.
[2]Government of Eritrea. 2014. The Fifth National Report on the Implementation of the UNCBD.
[3] GEF, 2014.Country Portfolio Evaluation: Eritrea (1992–2012).
[4]~80% of the Eritrean population live in rural areas and derive their livelihoods from agricultural activities– crop and livestock production in particular. Government of Eritrea. 2000. National Biodiversity Strategy and Action Plan.

rainfall and long-term unsustainable traditional agricultural practices[5;6;7]. Many of these problems are being exacerbated by climate change, with increasingly variable climatic conditions and more frequent droughts having a significant impact on natural resources and agricultural productivity in the region[8]. The human impact on the environment was further intensified by a prolonged liberation war, which destabilised traditional land use practices and placed pressure on the country's limited natural resources. As a result of this extensive land degradation, the gross annual rate of soil loss from croplands, rangelands and marginal lands is estimated at 2.1, 2.5 and 3.5 tonnes per hectare, respectively[9].

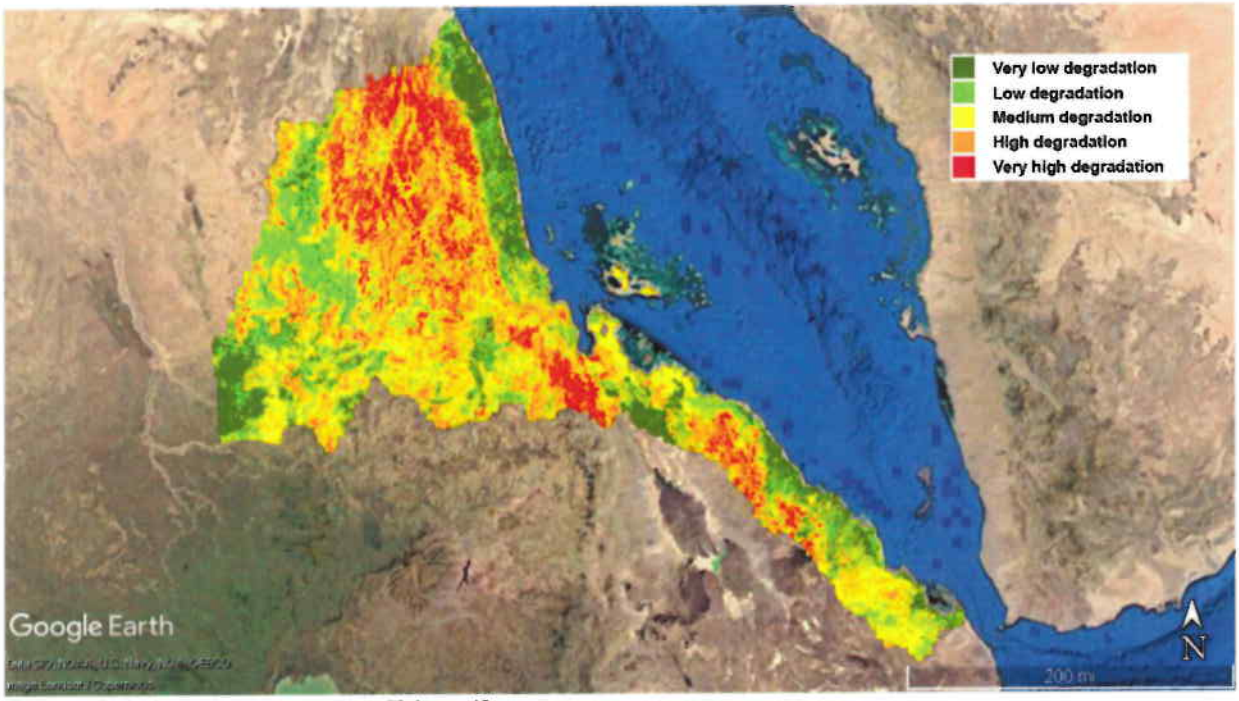

Figure 2.1. Land degradation Eritrea[10].

Deforestation for the expansion of agricultural lands and the collection of fuel wood and timber, combined with centuries of intensive land use, exposes the soil in the highlands of Eritrea to water and wind erosion, leaving the soils and the remaining vegetation heavily degraded. There are no updated forest inventory data for Eritrea. According to data from the Government, the highland close to medium forest has highland (close to medium forest - 59,100 ha), riverine forest (186,500 ha) and mangrove forest (6400 ha) and more than 60% of these areas with canopy cover above 10%. The biodiversity of the vegetation has been greatly reduced and the distribution of remaining natural woody perennials – including the juniper-olive woodlands – is heavily fragmented.

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[5]Government of Eritrea. 2006.The National Capacity Self-Assessment for Global Environmental Management.
[6]Government of Eritrea. 2001. Eritrea's Initial National Communication under the UNFCCC.
[7] Gurtner et al 2006. Land management in the central highlands of Eritrea. SLM Eritrea Report.
[8] Government of Eritrea. 2012. Eritrea's Second National Communication under the UNFCCC.
[9]Government of Eritrea. 2002. National Action Plan to Combat Desertification and Mitigate the Effects of Drought.
[10]ICPAC 2017. Eritrea Actual Land Degradation Index (Dec 2015 - May 2016). Available at: http://geoportal.icpac.net/layers/geonode%3Aer_act_15dec_16may

Agriculture, forestry and NRM in the Rora Habab plateau

Agriculture is the main economic activity in the project area, although yields are highly variable and often insufficient for the average family's yearly needs. Poverty levels are inflated in the highland areas and each household only cultivates ~0.5 hectares of land on average. Both cereal cultivation and animal husbandry are important in Rora Habab's mixed farming system, with some farmers preferring settled farming with a few animals and others relying primarily on livestock.

There are three farming systems in the highland areas of Eritrea: i) a rain-fed farming system supplemented with small-scale irrigation using traditional methods with low inputs and low outputs; ii) an agro-pastoral farming system where farmers practise growing cereal crops mixed with rearing cattle, goats and camels; and iii) semi-nomadic system on a very limited scale. The main rain-fed crops are wheat, barley and maize, the yields of which have declined by up to 50% compared with 20 years ago.[11] Varieties of fruits (including oranges, lemons and papaya) and vegetables (including tomatoes, cauliflower, peppers and onions) are also grown in the rain-fed areas and in the areas where spate irrigation is sometimes practised. Livestock often provides a 'safety net' to these farmers in the event of partial or complete crop failure. Animals are either consumed directly or else sold for cash to buy grain. However, the prices of livestock fall dramatically during a drought year when demand for grain is at its highest.

With regards to natural vegetation, dense forests are found only in small areas on the northern part of the plateau. The forests, that historically covered most of the highland, are now reduced to only approximately 160 ha in the region and even less in the project area, considering a canopy density above 10%[12]. The remaining remnant natural forests is currently under protection through permanent enclosures. The three major tree species across the plateau are *Juniperus procera* (juniper), also known as *J. procera*, *Olea europaeasubsp. africana* (African olive) and *Rhus abyssinica* (African sumac)[13]. Juniper and olive are co-dominant and commonly associated with the shrubs *Acacia origena*, *Carissa edullis*, *Dodonaea viscosa*, *Maytenus arbutifolia* and *Tarchonathus camphoratus*. Other trees, including *Nuxia congesta* and *Galega somalensis* are occasionally found, particularly in cemeteries and other protected areas. These isolated, protected individuals attest to the degraded status of the plateau's vegetation and were at one time present in far greater numbers. The natural vegetation is often mixed with exotic eucalypt trees – especially *Eucalyptus cladocalyx*, but also*E. globulus*, and *E. camaldulensis* – that have been planted through reforestation campaigns. Eucalypts are often popular among the population due to their high survival rate, good firewood quality and coppicing from stumps.

- *Juniperus procera* is especially valued for fuelwood, house construction, windbreaks, deadwood fencing and shade. As an evergreen species, it is also valuable for watershed protection, especially at the onset of the rainy season when little ground cover is present. The tree grows at an altitude of 1,750 to 2,500 m and reaches 30–37 m in height and 1.2–1.5 m in diameter. Rora Habab has the most northerly remnant of *J. procera* in Africa, except for an unsurveyed, small and declining population 80 km further north. The distribution of *J. procera* along Rora Habab is now patchy and restricted to the north of the plateau, where it is cut by villagers and subject to drought. The decline in the prevalence of *J. procera* in north-east

[11] Based on fieldwork conducted by the Ministry of Land, Water and Environment, Ministry of Agriculture and UNDP Eritrea Office in preparation of this PIF (September 2015).
[12] www.globalforestwatch.org
[13] Also called *R. glutinosa*

Africa can also be attributed to reduced and less regular rainfall resulting from climate change[14].

- *Olea europaeaL. subsp. africana* is co-dominant with *J. procera* in forests of Rora Habab but isolated trees, remnants of a much larger population, can be found along the hills and drainage channels as far down as to Nakfa (1,770 m). Although living trees are no longer cut or used as fuelwood on Rora Habab, villagers say that olive trees were cut extensively for fuelwood in the past. *Olea europaea*was the principal species used in the manufacture of plough handles, ox yokes, herding sticks, mattock handles and other agricultural implements. Twigs between one and two years old were used as toothbrushes. The principal reason this species is particularly threatened on Rora is that its foliage is the main green fodder crop in the dry season and during drought. Farmers know that the practice of stripping leafy branches ultimately kills the trees, but they face a dilemma; either they chop the olives to feed animals, or else the animals die. The seed of the species do not germinate easily and in the absence of protected areas, the result has been extensive deforestation with limited regeneration.

- *Rhus abyssinica*, one of ~130 species of *Rhus*, has a distribution limited mostly to the Sudan Hills, Eritrea and Ethiopia, with some occurrences observed in the highlands of Yemen and southwestern Saudi Arabia. In Rora Habab, the species is mostly found along riverbanks and at the foot of slopes but only rarely on more exposed or steeper slopes with shallower soils. Most specimens on Rora Habab are 4–6 m high and found in close association with other species, especially *Olea europaea*. The leaves of *Rhus abyssinica* are collected by local villagers and used to improve the taste of the water stored in goatskin containers and for dry season fodder. The trees also produce small, brown fruits that can be eaten in times of famine[15].

- *Eucalyptus cladocalyx* is an exotic species with origin from South Australia that has been planted extensively in Eritrea. Approximately 40% of the forest plantations established before 1996 were of the species *E. cladoclyx*, followed by *E. rudis* and *E. globulus*[16]. With the potential to grow into tall 25-30 m trees, *E. cladocalyx* can be used for windbreaks, shelterbelts, timber and firewood. The species is also drought tolerant and adaptable to a wide range of soil and climate types[17].

The restoration, conservation and sustainable management of the forest remnants in Rora Habab Plateau is important for the continued conservation of the natural forest ecosystem in the Northern Red Sea Region, making this a key region for biodiversity conservation in Eritrea that requires further protection and conservation status.

Climate change trends and projections for Eritrea

Climate change impacts in Eritrea include recurrent droughts, desertification, depletion of ground water, widespread land degradation and the emergence of climate sensitive diseases[18].Mean annual temperature has increased by 1.7 °C since 1960 at an average rate of 0.37 °C per decade,

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[14]Jones 1991. Restoration of *Juniperus procera* and *Olea europaea africana* woodlands in Eritrea. PhD Thesis. University of Stirling, Scotland.
[15]Jones 1991. Restoration of *Juniperus procera* and *Olea europaea africana* woodlands in Eritrea. PhD Thesis. University of Stirling, Scotland.
[16]Araya Eman, E.1998.State of forest genetic resources in eritrea. Sub- regional workshop FAO/IPGRI/ICRAF.
[17]Factsheet Eucalyptus cladocalyx. www.florabank.org.au.
[18] State of Eritrea. 2015. Intended Nationally Determined Contributions Report.

while rainfall for central and southern highlands has decreased by an average of 0.4 mm per year between 1912 and 2005.

Projections of future climate change under the A1B emission scenario predict that the warming trend will continue (with increases of 1.5 °C by 2030 and 2.7 °C by 2060) and that there will be a 2% decrease in precipitation by 2060[19]. The likelihood of severe droughts is also predicted to increase over the next 30 years, particularly in the northern reaches of the country where the Rora Habab Plateau is situated (Figure 2.4).

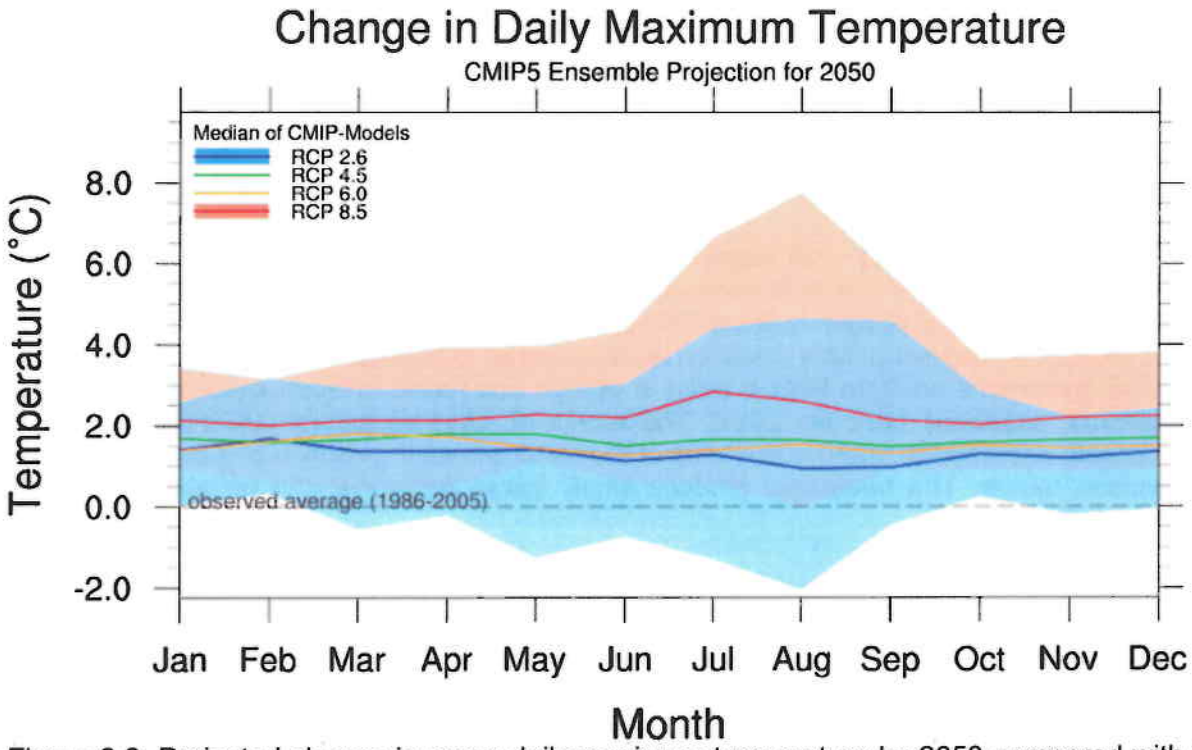

Figure 2.2. Projected change in mean daily maximum temperature by 2050 compared with the reference period (1986-2005) under all RCPs of CMIP5 ensemble modelling. Positive values indicate that warmest daily maximum temperatures will increase compared with the baseline, and vice versa. The shaded area represents the range or spread between the 10th and 90th percentiles of all analysed models[20].

[19]State of Eritrea. 2012. Eritrea's second national communication to the UNFCCC.
[20]World Bank. Climate change Knowledge Portal. Available at: http://sdwebx.worldbank.org/climateportal/index.cfm?page=sectoral_climate_statistics&ThisRegion=Africa&ThisCcode=ERI

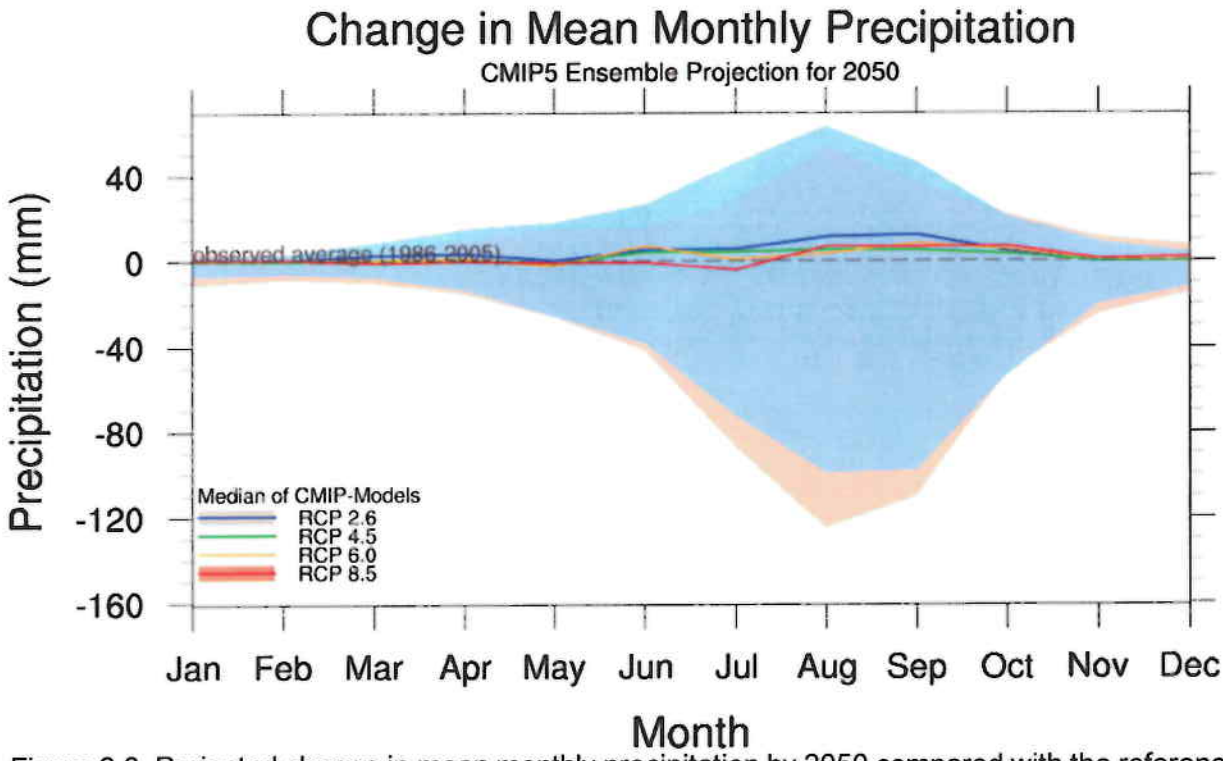

Figure 2.3. Projected change in mean monthly precipitation by 2050 compared with the reference period (1986-2005) under all RCPs of CMIP5 ensemble modelling. Positive values indicate that monthly rainfall will increase compared with the baseline, and vice versa. The shaded area represents the range or spread between the 10th and 90th percentile of all climate projections[21].

[21]World Bank. Climate change Knowledge Portal. Available at: http://sdwebx.worldbank.org/climateportal/index.cfm?page=sectoral_climate_statistics&ThisRegion=Africa&ThisCcode=ERI

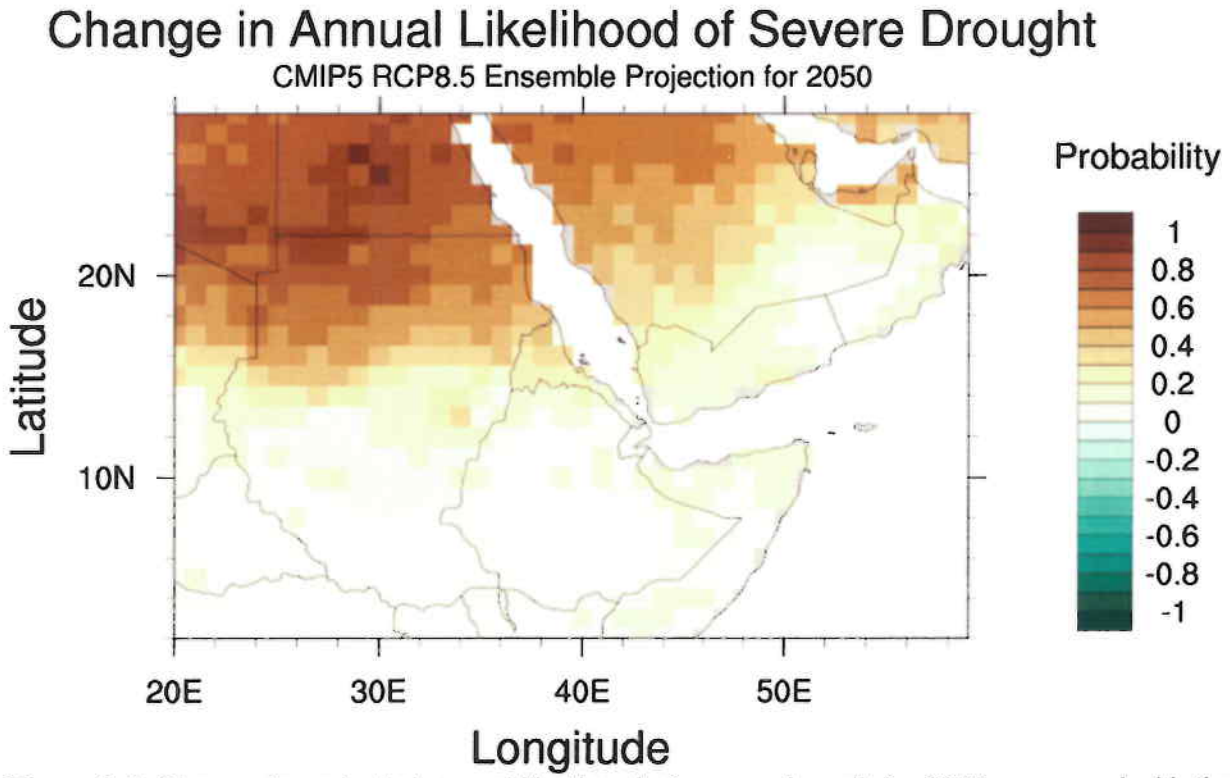

Figure 2.4. Change in projected annual likelihood of severe drought by 2050 compared with the reference period (1986-2005) under RCP 8.5 of CMIP5 ensemble modelling. Brown/Yellow areas are more likely to experience severe drought compared to the baseline period[22].

Barriers

There are multiple institutional, technical and financial barriers to addressing sustainable land and natural resource management in Eritrea. A National Capacity Needs Self-Assessment (NCSA) undertaken in 2007 identified several focal areas for building the capacity of government ministries. These included: i) weak inter-institutional coordination and communication; ii) inadequate funding; and iii) inadequate research and training. The proposed project will contribute to the preferred solution by addressing the barriers described below.

Barrier 1: Inadequate capacity for cross-sectoral planning, implementation and appraisal of integrated landscape management interventions.

It is widely recognised that Eritrea faces a shortage of professional staff within the environmental sector, particularly those with the knowledge and skills for addressing local resource use and development [23]. Although the government has enacted legal proclamations to conserve, sustainably use and manage biodiversity, ecosystems and natural resources, financial resources and technical capacity remains a challenge, and focus is instead being diverted to other pressing

[22]World Bank. Climate change Knowledge Portal. Available at: http://sdwebx.worldbank.org/climateportal/index.cfm?page=sectoral_climate_statistics&ThisRegion=Africa&ThisCcode=ERI

[23] Government of Eritrea. 2006. *National Capacity Needs Self-Assessment for Global Environmental Management in Eritrea.*

national human development issues, e.g. food security. A number of factors limiting the institutional capacity for effective environmental management in Eritrea have been identified including: i) insufficient inter-institutional coordination and communication among government line ministries; ii) inadequate policy and legal framework; iii) inadequate technical capacity to implement Multilateral Environmental Agreements; iv) insufficient institutional capacity; v) inadequate funding and lack of budget; and vi) inadequate research and training.

Soil and water conservation works are usually undertaken by the Ministry of Agriculture in collaboration with the Ministry of Land, Water and Environment (MoLWE), Ministry of Local Government and the Ministry of Education.

The Ministry of Agriculture has a widespread agricultural extension programme, but the potential of this programme is constrained by the inadequacy of the technical capacity and financial resources within the Ministry to properly train the agents on the relevant skills required to advise farmers. The extension agents deployed in the kebabis are usually residents of one of the villages in the kebabi they oversee. This approach is followed out of necessity, specifically the lack of financial resources to cover the costs of deploying extension agents in localities other than their own. It also allows the agents to be farmers themselves and practise what they teach. The extension agents are usually young and have less experience than most farmers. Their knowledge and expertise are therefore sometimes questioned by farmers, especially in cases where the agents can identify the problems but are unable to solve them – for example, when they are unable to provide inputs such as seeds, fertilisers or pesticides to farmers.

The decentralisation of government functions, including environmental issues, has sought to integrate environmental issues into decision-making processes at the regional and sub-regional administrative level. However, capacity deficiencies – relating to planning, baseline data, logistics, institutional and legal frameworks – exacerbate the problems rather than support environmental conservation efforts. Furthermore, the linkages between various natural resource sub-sectors are relatively weak. Environmental protection and the mainstreaming of international obligations – in accordance with the UNCBD, UNFCCC and UNCCD – is, therefore, not taking place as required.

The impact of this limited institutional capacity to coordinate natural resource management is, therefore, felt at the local level and manifests itself as highly sectoral approach to management of water, land, wildlife and other resources.

Barrier 2: Inadequate monitoring and use of scientific evidence for informed decision-making
Intensive awareness-raising regarding the conservation, sustainable use and sharing of the benefits of biodiversity conservation has also not been effectively undertaken as the focus of government programmes has been on promoting agricultural productivity, in some cases at the expense of sound environmental management. Consequently, there is limited capacity in government agencies for the assessment, identification and monitoring of biodiversity to promote its conservation. While there are significant community-level investments in soil and water conservation throughout Eritrea, facilitated through government financing, these are not always informed by up-to-date knowledge and science and do not sufficiently consider ecosystem integrity. Where knowledge does exist, it is not integrated into decision-making and advice, and does not always reach farmers in a user-friendly and timely manner. For instance, the practice of forest planatation has been widely adopted by farmers but often exotic species (e.g. Eucalyptus) are preferred over indigenous species partly due to the lack of full understanding of the negative impacts of this extotic tree species on the other natural resources (e.g. water). Even where the impacts of exotic species are understood by officials and practitioners, the short-term gains – for example, Eucalyptus grows faster and provides better timber than most indigenous species –

outweigh longer-term environmental considerations. Furthermore, the trade-offs between timber production and watershed rehabilitation are not well understood and cost-benefit analysis is not integrated into decision-making, partly due to lack of technical capacity on the use of these decision-support tools.

Barrier 3: Limited transfer of skills, knowledge and tools for integrated landscape management
The absence of a well-organised information and knowledge management system, focused on landscape-level resource use and management has restricted the documentation and dissemination of best practices that could be adopted by other kebabis in Eritrea. There is limited capacity and resources to disseminate information on best and proven practices; the provision of knowledge-based advice from extension agents is limited by the quantity and quality of information available to them. Despite the significant investments placed in them over recent decades, little systematic study has been done on the efficacy of erosion control and soil and water conservation practices and how these can be efficiently up-scaled to the rest of the country.

The large-scale nature of the soil and water conservation practices – designed to increase agricultural productivity – may cause some negative impacts on ecological sustainability, largely due to ecosystem fragmentation. In most cases, the ecological state of the resource is not known or well understood, prior to the design of interventions. New interventions should, therefore, make extensive efforts to integrate scientific information into the design of soil and water conservation interventions and properly integrate biodiversity and species conservation, as well as climate change, into agricultural development.

Barrier 4: Limited knowledge and awareness of the value of functional ecosystems for resilient livelihoods

The capacity limitations discussed above have significantly hampered the ability of the government ministries and institutions to disseminate information on best practices and approaches to land users and farmers. Ministries and departments have limited human, financial and technical resources to assess capacity gaps, appraise the performance of past initiatives, design practicable interventions, package lessons and best practices and disseminate these to land users. There is virtually no systematic monitoring, evaluation and knowledge management occurring within government and donor-financed projects and programmes and so learning is limited and slow.

Significant shifts in ways of working, that can facilitate an enabling environment for an M&E, learning and knowledge management and awareness raising culture, will therefore be key to ensure the sustainability of investments.

Barrier 5: Historical land tenure approaches that act as a disincentive to investing in land conservation

Land tenure arrangements continue to have a great impact on the ability and desire of villagers to manage natural resources and to plant or remove trees. *Diesa* (communal or village ownership) and *Risti* (private ownership by individuals or, more commonly, by a kinship group) are the most prevalent forms of land tenure in Eritrea. Historically, farmland acquisition system at the proposed project site (Rora Habab) has been *'Risti'*, under which land is inherited from parents. Typically, farmland passes from father to son. In some instances, women are also entitled to receive a limited share when their fathers decease. The major source of women's access to land, however, is through their husbands' customary right to land.

In 1994, the government approved a Land Proclamation (No. 58/1994) bestows the government the right of ownership to all land of the state and eliminating the old village or family ownership systems (Article-3). Following this a land reform process was carried out in 2009 to change the customary mode of land acquisition, applying some tenets of the Land Proclamation of 1994. Based on this land reform, all land now belongs to the state and eligible households – including female-headed households – are allocated equal pieces of farmland. The main purpose of this land reform was to achieve a more equitable land allocation and to provide access to land for those who had previously had none.

The long-term land redistribution to be undertaken under this new law was supposed to provide incentives for farmers to invest in sustainable agricultural practices and increase productivity. Implementation of the land redistribution under the new law was, excessively delayed largely due resource and technical limitations. The situation is changing slowly since a GEF SLM project has demonstrated the operationalization of the system in a neighbouring region. Through this project, some land redistribution has been conducted in twenty-eight villages, and this has generated awareness and realisation of the importance of land tenure security in facilitating increased investments in sustainable land management at farm level.

In the Rora Habab Plateau, the Risti system (private ownership by individuals or, more commonly, by a kinship group) was used for centuries before the introduction of the 1994 Land Proclamation. This has significantly shaped the settlement and land use patterns of the plateau community, such that families built their houses right near their inherited farm lands. For that reason, it is common to observe scattered houses on the plateau, on steep slopes and at valley bottoms. In the old Risti land tenure system ownership of land had been absolute, hereditary and derived from the historical right of a first possession by remote ancestor and that has forced families to settle in their family lands. The 2009 agricultural land redistribution has not altered these settlement and land use patterns; instead families with larger land holdings are forced to share some of their land with other families who have smaller land holdings. With adequate support through agricultural programmes, there is potential to promote increased investments in sustainable land management at farm level by farmers.

The land reform (i.e. redistribution) process is however a costly exercise and the government still lack the financial, technical and human resources to roll out the system. For instance, in elaborating the implementation of Land Proclamation 58/1994, the government introduced Legal Notice No. 31/1997, which mandates the Ministry of Land, Water and Environment (MoLWE), in collaboration with other ministries, to prepare land use and area development plans. According to such plans, agricultural lands, particularly those to be reserved for irrigation, protected areas, and national parks, areas for afforestation programs, mining areas, etc. are to be identified through the land use plans. To date, no land use and area development plans have been developed for the Rora Habab plateau area.

Baseline Scenario

Eritrea has a long history of implementing soil and water conservation interventions through widespread local community mobilisation for labour inputs. These include soil and rock bunds, check dams, terracing and tree planting, all of which have been extensively utilised throughout the country. These soil and water conservation activities are also ongoing in the proposed project site through government funding. However, these physical measures alone are insufficient to address the increasing rate of soil erosion, ecosystem fragmentation and land degradation. Furthermore, if not properly designed, planned and implemented, these interventions have the potential to cause more ecosystem degradation through the: i) inappropriate placement and

location of physical structures such as dams; ii) use/introduction of invasive alien tree species; iii) over-abstraction of groundwater; and iv) obstruction of natural aquifer recharge. Increasing land use intensity and the utilisation of land beyond its inherent capacity has affected the long-term sustainability of ecosystems. For instance, intensive crop production has led to significant soil nutrient depletion, resulting in low yields and further abstraction of other resources – such as water – to increase productivity and yields. Conversion of land for agriculture also exposes soils to extensive water and soil erosion, further degrading the land. If sustainability measures are not systematically integrated into the types of interventions employed to increase agricultural productivity and facilitate ecosystem restoration – including, *inter alia*, land use planning, conservation agriculture, sustainable grazing/rangeland management, soil & water conservation, watershed rehabilitation, sustainable forest management, agroforestry and appropriate methodologies to restore degraded forests – they will further exacerbate ecosystem fragmentation and degradation.

Land degradation resulting from human activities has had a significant impact on biodiversity in Eritrea. Unsustainable grazing, cultivation, and forestry practices have led to extensive deforestation and loss of habitat for local wildlife. The resulting loss of biodiversity, along with climate change and desertification, are identified as the greatest challenge to sustainable development in Eritrea[24]. The extent of landscape modification in Eritrea is considerable[25], with cultivated systems covering ~75% of Eritrea's terrestrial surface area[26]. While the expansion of agriculture and enhanced production is necessary for food security, the costs in terms of trade-offs with other ecosystems services are considerable.

To date, few studies have been conducted on biodiversity in Eritrea. Current available data is derived from national land use classifications[27] that describe the general ecological variations within the country but provide limited information about species diversity. Consequently, fine-scale information on biodiversity, in particular ecosystems and habitats, is lacking – for example, biodiversity in riverine forest – and historical data is often all that is available to reflect the current situation. Historical accounts suggest that the Rora Habab and Nakfa area once had extensive forests that provided habitat to abundant wildlife. Now, only remnant patches of these forests survive. In the absence of a comprehensive national biodiversity checklist, site-specific checklists can be used to try to determine overall biodiversity. These lists suggest that considerable diversity may persist in human-altered landscapes, including almost 700 plant species[28], ~90 reptiles and 19 amphibian species present in the country. There are also 12 bird species of global conservation concern recorded[29] and a total of 14 Important Bird Areas (IBA) identified across the country, providing a migration route and stopover location for many migratory species. As with ecosystem diversity, information on the status of individual species is incomplete and mainly comprises historical records. The Ministry of Agriculture, the Forestry and Wildlife Authority and Marine Resources conducted a rapid assessment of the population status of Eritrean mammals in 2013. The main finding of this assessment was that over 50% of mammal

[24] The State of Eritrea. 2014. Revised National Biodiversity and Action Plan for Eritrea (2014–2020). Ministry of Land, Water and Environment. Department of Environment.
[25] Areas where at least 80% of the landscape is under crop or livestock production.
[26] CBD. 2014. 5th National Report.
[27] Eco-geographical, agro-ecological and vegetation cover classifications have been produced at coarse scales.
[28] 4th National Report to CBD, 2010
[29] 5th National Report to CBD, 2014

species cannot be assigned a status[30] because of an insufficiency of information, highlighting the immediate need to improve biodiversity baseline information. Such a lack of data hinders effective biodiversity conservation planning.

In 2006, the Government of Eritrea entrusted the Ministry of Agriculture (MoA) and the Ministry of Marine Resources (MoMR) with the mandate to establish protected areas. The Forestry and Wildlife Conservation and Development Proclamation (Proclamation No. 155/2006) states that the MoA may establish and manage terrestrial protected areas. The objectives of the proclamation are the conservation, development and sustainable management of forests and wildlife resources of Eritrea. Despite this recognition, the requisite capacity to operationalise these plans has not been available, and this has hampered systematic implementation of these legal instruments. Consequently, Eritrea has no formal protected areas that are legally gazetted and implemented. However, more than one million hectares of marine and terrestrial ecosystems in Eritrea are targeted for protected area establishment. Through the GEF-financed, UNDP-supported project, *Integrated Semienawi and Debubawi Bahri-Buri-Irrori-Hawakil Protected Area Systems for Conservation of Biodiversity and Mitigation of Land Degradation (GEF ID:4559)*, the first protected area will be designated and operationalised under the Proclamation. In 1959 Yob Reserve was legally established under the post-World War Two administration[31], primarily for the conservation of the globally vulnerable Nubian ibex (*Capra nubiana*) and other desert wildlife species. However, no formal development of the reserve occurred, and there is little data available on the area since that time[32]. There are also currently no population estimates for the Nubian ibex for Eritrea.

Although there are no population estimates available for Nubian ibex in Eritrea, the presence of this threatened species has been confirmed in the country by recent reports. A recent field assessment confirmed the presence of the species in the Kerkebet area of Zoba Gash-Barka in the north-west of Eritrea[33]. The Kerkebet area is situated less than 100 km to the south-west of the former Yob Wildlife Reserve. In addition, consultations with community stakeholders in the Rora Habab Plateau during the proposed project's PPG phase revealed that Nubian ibex are present in the Adobeha valley, which is located on the northwestern boundary of the project area[34].

Some conservation measures have been proposed for the species including: i) conducting detailed surveys for Nubian ibex in northern Eritrea – either on the ground or from the air; and ii) developing a conservation strategy for the species based on survey data[35]. Such a conservation strategy will be reliant on the establishment of protected areas. During ground and aerial wildlife surveys conducted at the Zara Mine Project area on the northwestern boundary of the Rora Habab Plateau between 2008 and 2011, six groups of Nubian ibexes were detected in and around the

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[30] Extinct, Critical, Endangered, Rare, Common or Unknown.
[31] Gazetta Eritrea No. 4, p 31. 16 March 1959.
[32] Alkon, P.U., Harding, L., Jdeidi, T., Masseti, M., Nader, I., de Smet, K., Cuzin, F. & Saltz, D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e. T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en
[33] Ministry of Land, Water and Environment, Department of Environment. 2014. The 5th National Report on the Implementation of the UNCBD.
[34] Debretsion Y. 2018. Summary and findings of FGD and field assessment for the PPG phase of the proposed "Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Nakfa sub-Zoba, Northern Red Sea Region of Eritrea" project.
[35] Hillman, J. C. and Yohannes, H. 1997. Eritrea. In: D. M. Shackleton (ed.), Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae, pp. 26-27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

mountainous terrain of the Koka Valley[36,37]. There are no other confirmed reports of Nubian ibex in Eritrea, including in the area targeted by the proposed project. (More details on Nubian ibex in Eritrea are presented in Annex K).

There are no ongoing initiatives in Eritrea focussing primarily on the conservation of Nubian ibex. The Government of Eritrea has, however, demonstrated its commitment to the conservation of the countries wildlife – including endangered species such as Nubian ibex – through the development of various plans, strategies and legislation. National conservation plans for several endangered and priority species – including Nubian ibex – was proposed in the country's NBSAP[38] (see Annex L). These plans were developed under Target 12 of NBSAP's Strategic Goal C: "Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity". Target 12 states that by 2020, the extinction of threatened species has been prevented and the conservations statusof those most threatened have been improved, with declining trends significantly reduced[39]. This target will also ensure the conservation of these species (including Nubian ibex) through effective management and the development of an action plan[40]. Additionally, the FWA has proposed the establishment of a protected area that would include the Adobeha Valley (where Nubian ibex are reported to exist) and Hager Mountains. The proposal highlights the necessity of this protected area for the conservation of threatened and endangered species, including Nubian ibex, greater kudu (*Tragelaphus strepsiceros*) and warthog (*Phacochoerus africanus*)[41].

Although the presence of Nubian ibex within the project's implementation area in the Rora Habab Plateau has not been confirmed, the greater kudu and warthog are present[42]. These two species are threatened with extinction in the country because of the degradation of their natural habitats, and, therefore, require special attention at a national level according to Proclamation No. 155/2006[43]. The preferred habitat of the greater kudu, which includes African Wild Olive woodland and forest is severely degraded within the project area, resulting in a low local population density of this mammal.

While natural resource conservation has not yet taken off at scale in Eritrea, some significant momentum has been built around soil and water conservation throughout the country, within the context of promoting agricultural productivity. Large-scale investments have been made throughout the country and strategies developed to guide this process. The focus of these interventions and investments has been on infrastructure and physical developments, with limited integration of sustainable natural resources management principles to ensure ecosystem protection. The lack of integration of sustainability principles into ecosystem restoration and

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[36]GREDMCO. 2010. Wildlife Survey Report of Zara Mine Project Area. Sub-Sahara Gold Corporation/Chalice Gold Mines.

[37] GREDMCO. 2012. Wildlife and Habitat Management Plan for the Zara Mine Project. Sub-Sahara Gold Corporation/Chalice Gold Mines.

[38]Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).

[39]NBSAP's goals and targets are derived from the Aichi Biodiversity Strategic Goals and Targets.

[40]Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).

[41] Debretsion Y. 2018. Summary and findings of FGD and field assessment for the PPG phase of the proposed "Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Nakfa sub-Zoba, Northern Red Sea Region of Eritrea" project.

[42]*Ibid.*

[43]Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).

agricultural production is therefore amongst Eritrea's pressing challenges. Field observations and discussions with local authorities show an extensive level of community participation in soil and water conservation initiatives throughout Eritrea, and ecosystem restoration is recognised at the community-level as an important aspect of addressing land degradation and increasing the productivity of land for agriculture[44]. There is, therefore, potential to raise significant awareness among land users through these community mobilisation programmes and provide training and capacity building to adopt sustainable land and natural resource management approaches at farm and landscape levels.

In Eritrea, agricultural extension services are provided primarily by the public sector, through offices of the Ministry of Agriculture. The extension services aim at raising the awareness of farmers towards the adoption of improved inputs and modern practices to increase their yields and improve the quality of production. The main points of contact between the extension specialists or frontline extension agents and farmers are sub-Zoba/region and in some places further down at local area administration offices. The extension programme, while successful in deploying much-needed support to farmers, has fallen short of fully integrating sustainable natural resource management into extension support and advice. This lack of integration of ecological sustainability has permeated agricultural practices, including the soil and water conservation activities. The effectiveness of government extension services is therefore limited, a problem compounded by limited human and institutional capacities for research, land-use planning and governance amongst technical staff, communal authorities and village leaders. Although institutions, such as the National Agricultural Research Institute (NARI) and Hamelmalo Agricultural College have clear roles and mandates, they face a shortage of technical staff and have limited funding for on-the-ground activities. Furthermore, the systems for capturing and disseminating lessons-learned and best practices for sustainable natural resource use and land management are inadequate. Inadequate data and information (in terms of quality, quantity and access) constrain decision-making and the knowledge needed for the effective practice of integrated land and natural resources management.

In response to some of the challenges discussed here, the government has been investing in local level solutions in the Rora Habab area, to arrest land and ecosystem degradation, promote watershed management and improved agricultural productivity.

Baseline Projects

Soil and water conservation for improved agricultural productivity in the Rora Habab Plateau

Over the past several decades, government budget has been allocated towards soil and water conservation measures such as the: i) establishment of check dams and hill-side terracing; ii) building of ponds and micro-dams; iii) initiation of afforestation activities; and iv) declaration of forest enclosures. This work has largely been conducted through the Eritrean philosophy of self-reliance and popular participation, and the programmes have resulted in an estimated 305,232 ha of enclosures – 214,133 ha of temporary and 91,099 ha of permanent enclosures – throughout Eritrea[45]. On-farm soil and water conservation practices are underway in all zobas and are currently implemented across an area covering 32,250 ha (2014). The government has made plans to increase this to 87,450 ha by 2018, as outlined in 2014-2018 Strategic Development Plan of the Ministry of Agriculture.

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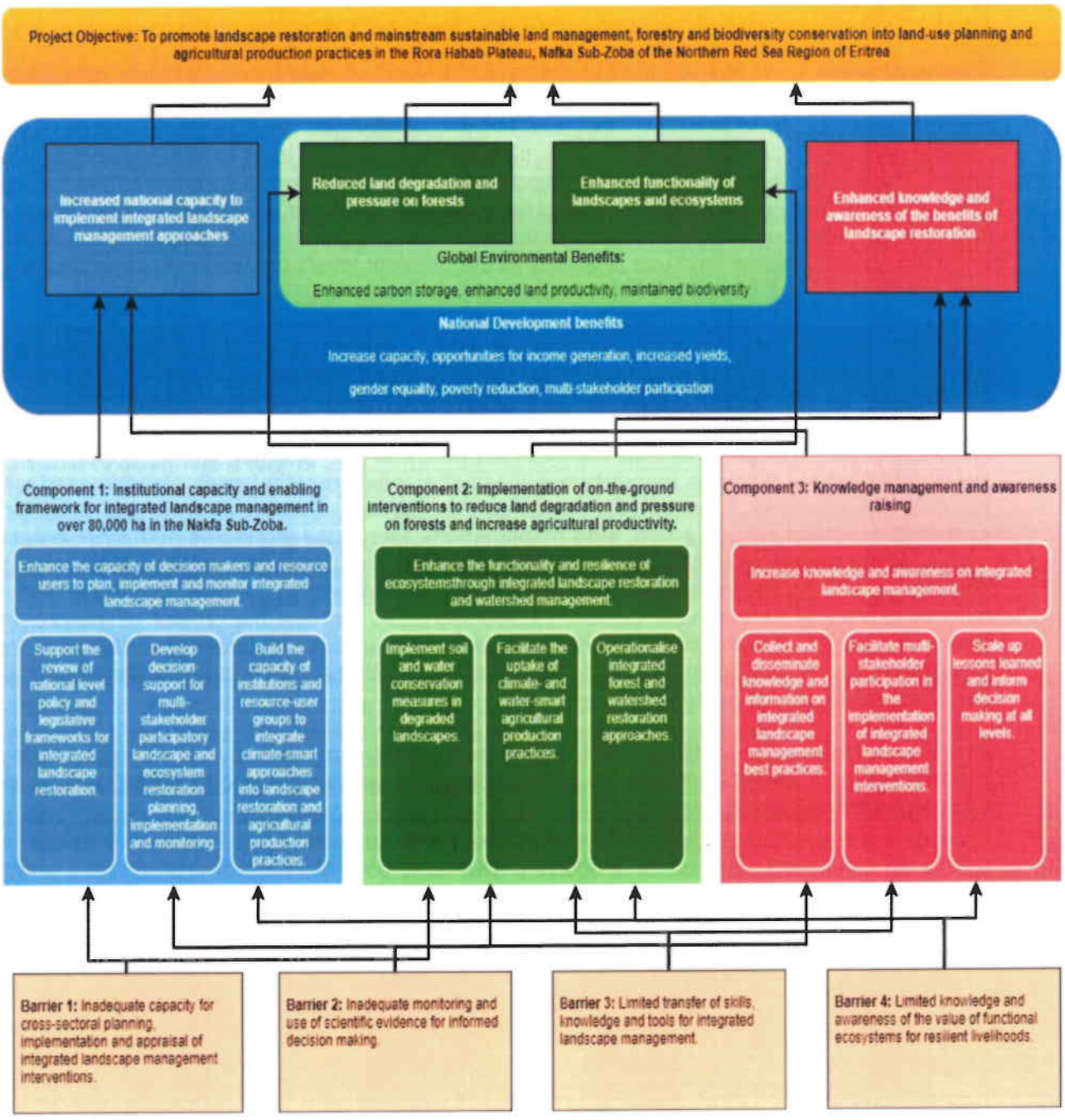
[44] MoLWE/UNDP field visits to the Debub Zoba, south of Asmara, July 2015.
[45] Government of Eritrea. 2014. *TheFifth National Report on the Implementation of the UNCBD.*


Project Objective: To promote landscape restoration and mainstream sustainable land management, forestry and biodiversity conservation into land-use planning and agricultural production practices in the Rora Habab Plateau, Nafka Sub-Zoba of the Northern Red Sea Region of Eritrea
Increased national capacity to implement integrated landscape management approaches
Reduced land degradation and pressure on forests
Enhanced functionality of landscapes and ecosystems
Enhanced knowledge and awareness of the benefits of landscape restoration
Global Environmental Benefits:
Enhanced carbon storage, enhanced land productivity, maintained biodiversity
National Development benefits
Increase capacity, opportunities for income generation, increased yields,
gender equality, poverty reduction, multi-stakeholder participation
Component 1: Institutional capacity and enabling framework for integrated landscape management in over 80,000 ha in the Nakfa Sub-Zoba.
Enhance the capacity of decision makers and resource users to plan, implement and monitor integrated landscape management.
Support the review of national level policy and legislative frameworks for integrated landscape restoration.
Develop decision-support for multi-stakeholder participatory landscape and ecosystem restoration planning, implementation and monitoring.
Build the capacity of institutions and resource-user groups to integrate climate-smart approaches into landscape restoration and agricultural production practices.
Component 2: Implementation of on-the-ground interventions to reduce land degradation and pressure on forests and increase agricultural productivity.
Enhance the functionality and resilience of ecosystemsthrough integrated landscape restoration and watershed management.
Implement soil and water conservation measures in degraded landscapes.
Facilitate the uptake of climate- and water-smart agricultural production practices.
Operationalise integrated forest and watershed restoration approaches.
Component 3: Knowledge management and awareness raising
Increase knowledge and awareness on integrated landscape management.
Collect and disseminate knowledge and information on integrated landscape management best practices.
Facilitate multi-stakeholder participation in the implementation of integrated landscape management interventions.
Scale up lessons learned and inform decision making at all levels.
Barrier 1: Inadequate capacity for cross-sectoral planning, implementation and appraisal of integrated landscape management interventions.
Barrier 2: Inadequate monitoring and use of scientific evidence for informed decision making.
Barrier 3: Limited transfer of skills, knowledge and tools for integrated landscape management.
Barrier 4: Limited knowledge and awareness of the value of functional ecosystems for resilient livelihoods.

III. RESULTS AND PARTNERSHIPS

Expected Results

The objective of the project is to *promote landscape restoration and mainstream sustainable land management, forestry and biodiversity conservation into land-use planning and agricultural production practices in the Rora Habab Plateau in Eritrea*. Enhanced social mobilisation towards addressing land degradation and the upgrade of institutional and human resource capacity will improve the implementation of on-the-ground measures – such as conservation agriculture, reforestation, enrichment planting, establishment of enclosures and agroforestry – to address environmental deterioration. The project is aligned with several focal area strategies and programs of the GEF, including LD 3 Program 4 – Scaling up sustainable land management through the Landscape Approach; BD 4 Program 9 – Managing the Human-Biodiversity Interface; CCM 2 Program 4 – Promote conservation and enhancement of carbon stocks in forest and other land use, and support climate smart agriculture; and SFM 3– Restored Forest Ecosystems: Reverse the loss of ecosystem services within degraded forest landscapes.

The above-mentioned objective will be achieved through three integrated components, detailed below.

Component 1: Institutional capacity and enabling framework for integrated landscape management in over 80,000 ha in the Nakfa sub-Zoba.

GEF financing for Component 1: US$1,980,000
UNDP financing for Component 1: US$240,000
Government co-financing for Component 1: US$4,960,500

Without GEF financing

The highlands of the Nakfa sub-Zoba of Eritrea are affected by severe soil erosion and land degradation, with a significant decline in soil fertility and productivity in recent years. Such continuing land degradation renders agricultural production – the only livelihood source for more than 80% of the population – progressively less productive. As a result, land degradation has long been identified as a primary area of concern for development in Eritrea, with widespread, government funded, soil and water conservation interventions ongoing throughout the country. However, while people in the region – particularly farmers – are aware of the causes of these problems, they are disincentivised to engage in long-term land restoration by limited understanding in the long-term benefits of sustainable land management and also the limitation of the relevant skills and technical support to adopt sustainable land use practices. Furthermore, limited institutional and technical capacity in government to design integrated landscape management (ILM) programmes has resulted in the implementation of interventions that have the potential to cause more ecosystem degradation through the: i) inappropriate placement and location of physical structures such as dams; ii) use/introduction of non-native tree species iii) over-abstraction of groundwater; and iv) obstruction of natural aquifer recharge.

With GEF financing

Under Component 1 of the proposed GEF-financed project, the institutional and technical capacity of the Government of Eritrea to mainstream climate change, biodiversity, sustainable land management (SLM) and sustainable forest management (SFM) into development planning will

be enhanced. The project will support the institutions spearheading the restoration of degraded landscapes in the Nakfa sub-Zoba through the development of management plans and restoration strategies, with a focus on cross-sectoral coordination. By integrating multiple focal areas into development planning, the project will reduce the risk of causing further ecosystem degradation through the implementation of inappropriate, single-focused interventions.

Closer to the ground, the capacity of resource users to understand and implement sustainable and climate resilient interventions will be strengthened. With an increased understanding of the benefits of land restoration, people will be more willing to engage in restoration activities. This, together with a reform in the traditional approach to land management, will promote community buy-in for project interventions.

Further details on the outcome, outputs and indicative activities for Component 1 are provided below.

Outcome 1.1: Support for the review of national level policy and legislative frameworks for integrated landscape restoration.

Output 1.1.1: Technical review and updates of existing legal instruments conducted to promote/incorporate sustainable use and conservation of forest and wildlife species into landscape restoration planning and implementation.

The Ministry of Local Government (MoLG), Ministry of Land, Water and Environment (MoLWE), and Ministry of Agriculture (MoA) will be supported to undertake a comprehensive review of existing legal instruments relating to land management and biodiversity conservation. The review will identify how the relevant articles under each proclamation can be applied to the protection, conservation and restoration of forest ecosystems and their associated fauna and flora species. The primary focus areas of the review will include the Forestry and Wildlife Conservation and Development Proclamation (2006) and the Environmental Protection, Management and Rehabilitation Framework (2017). The review will assess the alignment of the with national level policies/proclamations with global targets and agreements, including to the governments commitments regarding INDCs, the UNCBD Aichi targets and the UNCCD Land Degradation Neutrality targets.

Indicative activities under Output 1.1.1 include:

- 1.1.1.1. Review existing legislative frameworks and develop two strategies for the; i) protection and conservation of flora and fauna species; and ii) protection and restoration of forest ecosystems.
- 1.1.1.2. Provide training and capacity building of technical officers and institutions on how to properly apply best practices when designing Integrated Natural Resource Management (INRM) approaches.

Output 1.1.2: Integrated landscape restoration plans developed (including for watershed rehabilitation, reforestation and rangeland management) for each of the 5 administrative kebabis in the Nakfa sub-Zoba.

Further to the development strategies produced under Output 1.1.1, MoLG, MoLWE, MoA, and the relevant Zoba Administrations will be engaged to develop an integrated landscape management plan for the Rora Habab Plateau. This plan will include detailed subplans focusing on watersheds, forest rehabilitation, wildlife conservation, management of rangelands resources

and agricultural production systems. Each sub-plan will include a detailed baseline assessment of the available resources and the extent of degradation present in each system. Technical guidelines will also be developed for each subplan to support informed decision making, using appropriate restoration interventions based on international best practices.

Led by the Department of Water and the Department of Land, the watershed management subplan will focus on reducing degradation and promoting the rehabilitation of watersheds and the ecosystems that support them. The baseline assessments will focus on the: i) availability; ii) levels of groundwater versus surface water; iii) evaporation rates; iv) gradient of the landscapes; v) salinity; vi) runoff rate; vii) infiltration rate; viii) pollution levels; and ix) potability of water resources. This assessment will ensure that upstream/downstream dynamics of river systems are fully understood to guide decisions on the use of water in the catchments. Once the systems are understood, minimum standards will be set for the use of resources within the watershed and appropriate watershed management intervention will be defined. An integrated approach will be applied to the watershed management subplan, accounting for the interaction of water with other elements in the landscape.

Closely linked to the watershed management subplan, a forest rehabilitation subplan will be developed to define minimum standards and management objectives for reforestation activities. The forest restoration components will be based on a community forestry model, including community nurseries where sufficient water is available, and the community is interested. The combination of forest species for which to produce seedlings will be decided in the communities within the ecologically valid options. Reforestation will use a combination of plantation, direct seeding and support to natural regeneration, working with the community to assure long-term protection against hazards such as grazing animals, wildfires and unsustainable exploitation. Plantation sites will be selected according to expected highest survival rate. Plantations will include a mixture of the species mentioned in Section 2.1, with initial tree spacing of 2.5 m x 2.5 m to give room for future thinning in case of high survival. The plantations will be established in the early rainy season, and rainwater will also be harvested in situ to support these tree plantations. Agro-forestry and silvo-pastoral systems will be used where suitable combinations can be established, for example using the taungya model during early forest plantation establishment and grazing livestock in the shade of established forests.

Led by the Forestry and Wildlife Authority in collaboration with MoLG and MoLWE, a baseline assessment will be conducted to determine the: i) levels of degradation of forest ecosystems; ii) biodiversity and species composition of forest ecosystems; iii) historic ranges of specific tree species; iv) interaction between trees, shrubs and grasses within the ecosystems; and v) extent of invasive alien species. The focus of the forest rehabilitation subplan will be on reducing rates of habitat degradation and restoring already degraded ecosystems. This will be achieved through the designation of temporary and permanent set asides/enclosures, the demarcation of controlled land/resource use areas and the active planting of new forests. The focus or forest restoration subplans will be on vulnerable and threatened species, specifically *Juniperus procera* (juniper) and *Olea europaea subsp. africana* (African wild olive). The technical guidance will include details on the maintenance and care of forest species after planting.

Rangeland management subplans will be developed together with the MoA and the Ministry of Local Government – Department of Agriculture and Land, to identify appropriate rangeland rehabilitation interventions. The baseline assessment will focus on determining the: i) available biomass within rangelands; ii) species composition of flora and their palatability; iii) carrying capacity; iv) sensitivity of species; v) interactions of rangeland ecosystems with water; and vi) level of land degradation within rangelands.

The baseline assessment for wildlife conservation will evaluate the status of fauna in Eritrea, specifying baseline data such as the: i) current population size and distribution; ii) extent of suitable habitats; and iii) threats additional to habitat loss facing each species, potentially including hunting and human-wildlife conflict. The result of this assessment will guide the formulation of a wildlife conservation plan, identifying and protecting important habitats and restricting the use of threatened species – including through the establishment of protected areas. A further detailed study of the threatened Nubian Ibex will be conducted under Output 1.2.

Indicative activities under Output 1.1.2 include:

- 1.1.2.1. Develop an integrated landscape management plan for the Rora Habab Plateau, including detailed subplans focusing on watersheds, forestry, wildlife, rangelands and agricultural systems.

Output 1.1.3: Technical support provided for the establishment and strengthening of community-level institutions for natural resource management (e.g. Water User Associations, Farmers' Association and Village Committees) to champion improved land and water management

The proposed GEF-financed project will support the establishment and strengthening of community level institutions such as farmer's associations, water user groups, land and natural resource management groups and committees set up by local government authorities as well as those established by community members themselves. The objective of this is to empower these community-based institutions to meaningfully participate in natural resource management and conservation decisions, and act as the focal and entry point for raising community awareness on issues of sustainable and integrated landscape management importance. This outcome will focus on training of stakeholders to be able to implement integrated landscape and watershed management interventions and establish protocols, rules, and laws that complement these interventions to ensure that monitoring and enforcement accompany implementation and to build sustainability into local level processes, particularly in light of the limited central level capacity to carry out these functions. The key goal here is to empower local land users, including community institutions to not only participate in designing responses for local level environmental problems, but to also take ownership of ensuring that their investments are sustained and bear fruit. Practical training on sustainable management of natural resources (land, water, forestry, wildlife) practices will seek to impart skills and knowledge and promote transfer an adoption of ecosystem restoration and livelihoods techniques to be deployed in Component 2.

Under this output, the project will identify the key community-based institutions currently present in the project area and assess their skills and capacity needs, and based on this, develop a support programme to build and strengthen their capacity to become effective natural resource management institutions.

Indicative activities under Output 1.1.3 include:

- 1.1.3.1. Identify existing community-based organisations and resource user groups and conduct a skills and capacity needs assessment.
- 1.1.3.2. Based on the identified capacity needs, develop a capacity building and training programme to improve the skills of these institutions and community groups to effectively participate in natural resource management decision-making processes at the local level and be the agents of change within their communities.

Outcome 1.2: Integrated decision-support tools to support multi-stakeholder participation in landscape and ecosystem restoration planning, implementation and monitoring.

Output 1.2.1: Biodiversity mapping (flora and fauna surveys) conducted to determine status of key species (in particular African Olive, Juniper and Nubian Ibex) in the Nakfa sub-Zoba.

The proposed project will conduct detailed fauna and flora surveys to gather and strengthen the data on threatened species in Eritrea. Spatial data and biodiversity mapping will provide valuable guidance for the development of biodiversity management strategies and planning in Eritrea. Output 1.2.1 will give special focus on two floral species – *Juniperus procera* (juniper) and *Olea europaeasubsp. africana* (African wild olive – and one faunal species – *Capra nubiana* (Nubian Ibex) *Tragelaphus strepsiceros* (greater kudu) and *Phacochoerus africanus* (warthog).

For plant species, a detailed baseline assessment will be conducted to map the current distribution of each species, building on assessments already conducted at PPG stage (see Annex M). This will be contrasted with historical distribution records, previous shifts in biomes and the expected shifts in distribution as a result of climate change and land use impacts. Details will also be collected on the threats facing each species – including those posed by alien invasive species that hinder growth – and the resilience of the species to disturbance. Finally, the ecosystem goods and services provided by each species will be assessed, along with its socioeconomic value to communities.

A similar approach will be applied to the Nubian Ibex. In the absence of detailed regional and historical distribution data, the extent of potential suitable local habitats, as well as recent local accounts of the species will be used as a baseline for detailed on-the-ground surveys. Along with local knowledge and accounts, a number of survey methods (in isolation or combination) may be used to assess the current population status of Nubian ibex in Eritrea, including *inter alia*: i) an abundance survey (using distance sampling methods such as line transects in open areas and fixed point counts in mountainous terrain); ii) camera trapping (to determine abundance, occupancy and habitat use); iii) aerial or unmanned aerial vehicle (UAV) surveys to determine abundance; and iv) the use of tracks and signs, with a specific focus on using traditional ecological knowledge – (TEK). The implementation of such surveys is aligned with biodiversity conservation targets set out within Eritrea's NBSAP[45], as well as the Forestry and Wildlife Conservation and Development Proclamation No.155/2006. Within the project area itself, the surveys will be used to confirm the presence or absence of Nubian ibex and collect data on other local species, including the greater kudu and warthog. This will allow for conservation planning for such species within the Rora Habab Plateau.

In addition to the abovementioned, habitat assessments will be conducted to characterise habitat conditions within the project's implementation area and to identify critical sites and habitats for Nubian ibex, as well as other local species such as the greater kudu. Such assessments will focus on the identification of biotic communities and landform types, including general and detailed descriptions of habitat types, as well as a list of main habitat features.

Once habitat assessments have been completed future protected areas and natural wildlife corridors for the conservation of vulnerable and threatened species in northern Eritrea – including the Rora Habab Plateau – can be identified. An example of an area that can be considered for

[45]Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).

protection is the Koka Valley bordering the Zara Mine Project area. The protection of this area would directly contribute to the conservation of Nubian ibex in Eritrea and would benefit from the data available from wildlife surveys, as well as the wildlife and habitat management plan already developed for the mine area. The project area is connected to the Semienawi and Seminawi Bahri and Debubawi Bahri via the central highland mountain zone. The Debubawi Bahri is considered as prime habitat for greater kudu. Through the restoration of the project area's forest vegetation under Output 2.1.3 there is potential for the establishment and protection of a natural wildlife corridor between the project area and the Semienawi and Debubawi Bahri, an important step towards the conservation of the area's wildlife (including greater kudu and Nubian ibex). Furthermore, the establishment of this natural wildlife corridor will add to and complement the work being carried out under the GEF-financed, UNDP-supported project, *Integrated Semienawi and Debubawi Bahri-Buri-Irrori-Hawakil Protected Area Systems for Conservation of Biodiversity and Mitigation of Land Degradation* project.The identification potential protected areas and natural wildlife corridors must be in alignment with the Land Proclamation No.58/1994, Forestry and Wildlife Conservation and Development Proclamation No.155/2006 and Eritrean Environmental Protection, Management and Rehabilitation Framework (Proclamation No.179/2017).

A land use conflict identification system will also be developed, whereby community consultations will be used to identify where human-wildlife interactions occur and what conflicts arise from these interactions. This will be accompanied by a detailed assessment of the threats facing the Nubian Ibex and other threatened species in the project area– including human-wildlife conflict, hunting and habitat loss – and the resilience of the species to habitat disturbance. Nubian ibex representation in conservation regulations, policies and plans will also be assessed. Results from the baseline assessment will then be used along with international guidelines and best practices[47] to inform local conservation planning for the species and update its local conservation status.

Such biodiversity assessments and mapping will support informed decision making and planning for the conservation, protection and reintroduction of key species in Eritrea. These assessments will, therefore, form integral components of landscape management plans and strategies. Through this work, the relevant MoLWE, MoLG technical departments will be significantly strengthened as flora and fauna species management institutions, as a key part of this will include on-the-job training and capacity building for the staff.

Indicative activities under Output 1.2.1 include:

- 1.2.1.1. Baseline assessment of flora in the Nakfa sub-Zoba, with a focus on *Juniperus procera* and *Olea europaea subsp. africana*.
- 1.2.1.2. Baseline assessment of fauna in the Nakfa sub-Zoba, with a focus on *Capra nubiana and other local species including Tragelaphus strepsiceros and Phacochoerus africanus*.
- 1.2.1.3. Draft management plans developed for the key flora and fauna species present in the project area.
- 1.2.1.4. A skills and capacity building/training programme for MoLG, MoLWE, Forestry and Wildlife Authority and MoA staff involved in carrying species baseline assessments to effectively inform the development of species management plans.

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[47] Such as those presented in the IUCN Red List species assessment for Nubian Ibex. Alkon, P.U., Harding, L., Jdeidi, T., Masseti, M., Nader, I., de Smet, K., Cuzin, F. & Saltz, D.
2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e. T3796A10084254.
http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en.

Output 1.2.2: Revision of existing community by-laws to integrate biodiversity species protection/conservation into the use and management of landscapes (e.g. through land-use planning).

Based on the information gathered through Output 1.2.1 and stakeholder consultations, local customs and community bylaws will be reviewed to ensure sustainable use of ecologically important species. Recommendations will be made for the revision of community by-laws, taking into consideration cultural land-use practices and the conservation requirements of target species. This will ensure that land use planning integrates knowledge about target species – including threats and opportunities – and recognises the need to allocate land for the protection and conservation of these species and restoration of landscapes and habitats to facilitate recovery. Finally, clear enforcement protocols will be developed to ensure that community by-laws are adhered to. The stakeholder engagement process will ensure the support of communities, allowing the recommended practices to integrate into local customs and sustainable practices, promoting compliance within communities.

Indicative activities under Output 1.2.2 include:

- 1.2.2.1. Review existing by-laws and local customs on the use, protection and conservation of key species (African Olive, Juniper and Nubian Ibex).
- 1.2.2.2. Develop a strategy for the inclusion of conservation recommendations into local by-laws.
- 1.2.2.3. Develop an enforcement protocol for local by-laws focused on land-use planning and species conservation.

Output 1.2.3: An integrated system developed to monitor the impacts and benefits of restoration on landscapes, ecosystems and biodiversity.

A three-tiered MRV system will be developed for monitoring landscapes, biodiversity and ecosystems integrity in the project area. The system will be user-specific, with varying levels of complexity depending on the level of the user, starting at the community level, through to local technical staff and finally to national government. At the base level, an unsophisticated design that is simple to use, easily accessible, inexpensive and reliable will be used to allow community members to participate in data collection on the ground. Protocols will include details on the frequency of monitoring events and identify specific monitoring points, with specific protocols being developed for individual user groups and relevant indicators set for each. By involving resource users in the collection of data, the project will expand the monitoring capabilities of technical staff, especially in remote and difficult to reach locations.

The data gathered by community members will be submitted to local technical staff who will collate the data and analyse it at the local level. Extension staff will also be responsible for ensuring quality control of data submitted to them and collecting additional technical data on the ground, with specific monitoring protocols developed for the collection of such data. Finally, the local data collated and analysed by the local technical staff will feed into a central national database or information system, where trends can be observed across the entire project area. Through the development and application of a simple cost-benefit analysis and ecosystem services valuation, data will be used to determine the environmental and socioeconomic returns of project interventions. Technical staff will be able to use the information gathered through the monitoring programme to influence policy and strategy formulation and overall decision making at the national level.

All relevant government staff and local monitors will be trained on the proper application of monitoring protocols. Training will be specific to each tier of the monitoring system, with the level of technicality being dependant on the knowledge and experience of the monitors. Community monitors will be trained on how to capture data on the ground in a way that is useful to extension agents. The technical capacity of local technical staff to collate and analyse data will also be strengthened. An adaptive management approach will be applied to the monitoring system to ensure effectiveness.

Indicative activities under Output 1.2.3 include:

- 1.2.3.1. Development of a three-tiered system for monitoring landscape and ecosystem integrity.
- 1.2.3.2. Training and capacity building of: i) national government staff; ii) local technical officers; and iii) local community monitors for the application of the monitoring system.

Output 1.2.4: Technical support and training provided for the development and implementation of measurement, reporting and verification (MRV) of carbon sequestration arising from forest restoration activities

Forest restoration activities (see Component 2) will sequester carbon from the atmosphere, contributing to the country's NDC target of an emission reduction by 2030 of 12.6% unconditionally and 38.5 % in the conditional scenario which is expected to rise to kt CO2 of 8183.22 – assuming external assistance – compared to the business as usual senarioThe proposed project will, therefore, conduct a baseline assessment of above ground carbon stocks using IPCC tier 1 data, with ground-proofing of satellite data to ensure reliability of the findings.Tier 1 employs the gain-loss method described in the IPCC Guidelines and the default emission factors, along with other parameters provided by the IPCC.Technical support and training will then be provided to forestry officers from the Forestry and Wildlife Authority on how to measure carbon sequestration, analyse land-user data and report on carbon stocks. Finally, land-users will be provided with support and training on basic monitoring of carbon sequestration variables, including tree numbers/ha, species, tree height, diameter at breast height, and species. On this basis, and knowledge about wood density, the average sequestration rate can be estimated. Once trained, land-users will contribute data through the monitoring system developed under Output 1.2.3.

Indicative activities under Output 1.2.4 include:

- 1.2.4.1. Conduct a baseline assessment of the landscape and design a protocol for MRV in the Rora Habab Plateau of Eritrea.
- 1.2.4.2. Provide technical support and training to forestry officers to measure and report on carbon sequestration.
- 1.2.4.3. Provide technical support and training to land-users on basic monitoring of carbon sequestration variables.

Outcome 1.3: Capacity of institutions and resource-user groups strengthened to integrate climate-smart approaches into landscape restoration and agricultural production practices.

Output 1.3.1: Agricultural extension support agencies trained on integration of climate advice into agricultural extension support services

The proposed project will train extension agents on up-to-date methods for natural resource management with a focus on agricultural and ecological interventions. The agricultural interventions will include: i) climate-smart agricultural (CSA) and livestock production; ii) integrated crop-livestock production systems; iii) conservation agriculture; iv) agroforestry; and v) sustainable water use and management including irrigation technologies. The agroecological interventions will include: i) soil and water conservation; ii) rangeland management; and iii) watershed restoration. Training will also be provided to extension agents, as well as relevant stakeholders who will be involved in the implementation of the project on CSA. The Ministry of Local Government's Agricultural and Land Division's capacity to disseminate and implement improved technologies – integrating climate risks and sustainable water resources management – will also be enhanced through on-the-job training.

Indicative activities under Output 1.3.1 include:

- 1.3.1.1. Conduct a needs assessment for CSA training. This will be initiated and coordinated by MoLG, MoLWE and MoA. The needs assessment will include: i) a stock-taking exercise to identify existing training materials on CSA in the Northern Red Sea Region of Eritrea; and ii) an assessment of the types of training required to build Zoba and sub-Zoba capacities.
- 1.3.1.2. Review and update the extension services package to include aspects that are not covered within the current portfolio and pilot the revised extension services package in sub-Zoba. The extension services packages will be tailored to the local context concerning: i) climate conditions; ii) prevailing socio-economic conditions; iii) environmental considerations; and iv) the needs of local communities.
- 1.3.1.3. Train extension agents on the revised extension packages, which will support the transition towards CSA and agroecological practices and establish an effective working link with farmers.

Output 1.3.2: On-farm demonstration and training on water and climate-smart agricultural methods and technologies conducted (e.g. rainwater harvesting, agro-forestry and integrated soil fertility management).

Through a combination of training workshops and on-farm demonstrations, the proposed project will train farmers on climate-smart agricultural practices and technologies. Appropriate CSA and agroecological interventions will be identified for the Rora Habab plateau, including the likes of: i) drought-resistant crop varieties; ii) water efficient irrigation technologies; iii) timing of cropping/harvesting seasons; iv) improved cropping methods such as intercropping, crop rotation, bunding, mulching, terracing, furrowing, and composting; v) mixed crop-livestock systems; vi) integration of agroforestry; vii) integrated pest management; and viii) post-harvest management. Demonstration plots will then be identified to allow farmers to observe these interventions in a practical setting through peer-to-peer exchanges. Communities will also be engaged in the planning and design of: i) water harvesting and storage interventions; ii) flood diversion and water spreading facilities; and iii) on-farm and off-farm soil and water conservation measures.

Indicative activities under Output 1.3.2 include:

- 1.3.2.1. Identify locally appropriate climate-smart technologies and agroecological practices for agriculture and livestock management.
- 1.3.2.2. Conduct demonstrations and training on the implementation of CSA technologies and agroecological practices, including the identification of demonstration plots.

Output 1.3.3: Strategy developed to facilitate landscape-level adoption of climate-smart restoration of agricultural landscapes and SLM approaches

To reduce land degradation in agricultural landscapes, the proposed project will promote investment in the SLM, CSA and improved livestock management practices at the farm level. A strategy for the adoption of such land management practices will be developed based on the findings of a baseline assessment on the level of degradation in agricultural landscapes. The assessment will identify threats to the integrity and resilience of agricultural landscapes under the conditions of climate change, including the effects of soil erosion, nutrient depletion, fire damage, overgrazing, bush encroachment and trampling/compacting of soils.

Indicative activities under Output 1.3.3 include:

- 1.3.3.1. Conduct a baseline assessment of degradation of agricultural landscapes, identifying threats to the integrity and resilience of those landscapes.
- 1.3.3.2. Develop a strategy to reduce degradation and improve productivity in agricultural landscapes by investing in SLWM and promoting livestock management.

At the end of the project, it is expected that through this component, the local land users and decision-makers will be in a better position to recognize the land degradation challenges in their locality, collectively explore solutions and implement and monitor their impacts, enforce local-level rules and protocols for bringing these challenges under control, and recognize the importance of a better managed environment for their livelihoods and well-being.

Component 2: Implementation of on-the-ground interventions to reduce land degradation and pressure on forests and increase agricultural productivity.

GEF financing for Component 2: US$5,587,500
UNDP financing for Component 2: US$1,269,300
Government co-financing for Component 2: US$ 14,870,997

Without GEF financing
Severe land degradation is having a negative impact on ecosystem functioning and agricultural production in Eritrea, with the central and northern highlands being the most affected. This is threatening the livelihoods of the over 80% of the population that are reliant on agriculture as their main source of livelihood and income. Challenged by extensive erosion, nutrient-depleted soils and declining water availability, farmers are increasingly extending their agricultural practices into marginal areas. Such expansion, however, is not sustainable in the long-term. Converted agricultural land exposes more soil to erosion and causes further soil nutrient depletion. Low agricultural productivity under these conditions also results in further extraction of resources such as water and forest resources. Increasing land use intensity and the utilisation of land beyond its inherent capacity has also affected the long-term sustainability of ecosystems. To combat this, Eritrea has a long history of implementing soil and water conservation interventions through widespread local community mobilisation for labour inputs – including for construction soil and rock bunds, check dams, terracing and tree planting. However, these physical measures alone are insufficient to address the increasing rate of soil erosion, ecosystem fragmentation and land degradation. Furthermore, if not properly designed, planned and implemented, these interventions have the potential to cause more ecosystem degradation through the: i) inappropriate placement and location of physical structures such as dams; ii) use/introduction of

invasive alien tree species; iii) over-abstraction of groundwater; iv) obstruction of natural aquifer recharge; and v) lack of consideration of climate change and associated risks.

If sustainability measures are not systematically integrated into the types of interventions employed to increase agricultural productivity and facilitate ecosystem restoration – including, *inter alia*, land use planning, conservation agriculture, sustainable grazing/rangeland management, watershed rehabilitation, sustainable forest management and appropriate methodologies to restore degraded forests – they will further exacerbate ecosystem fragmentation and degradation.

With GEFfinancing
The proposed project will contribute towards the reductionof land degradation and buildingof the resilience of communities living in the highlands of Eritrea against the impacts of climate change, by implementing climate-smart interventions that: i) increase water availability and soil moisture content; ii) improve livestock management practices; iii) restore forest ecosystems; and iv) promote alternative livelihoods that are less dependent on unsustainable land-use practices. This will build on existing government programmes for soil and water conservation, introducing an integrated approach to landscape management to ensure sustainability of interventions.

Component 2 will support the efforts made through Eritrea's Integrated Water Resource Management (IWRM)[48] action plan to: i) create an enabling environment for water resource management; ii) improve the knowledge base for informed decision making on water resource use; and iii) improve water resource assessment capabilities. Effective water management is of fundamental importance to the restoration of ecosystems and the improvement of agricultural productivity. IWRM promotes the coordinated development and management of water resources, accounting for the complex interactions between water, ecosystems, agriculture and other water uses. This multisectoral approach will ensure that water management interventions do not focus on one sector to the detriment of others. Focal areas for water management will include agriculture, livestock production, forestry and water harvesting. Ecosystem restoration activities will be aligned with national and community-based land use and development plans, reducing watershed degradation through the implementation of reforestation and other soil and water conservation measures.

As part of the integrated landscape management approach, the restoration of degraded forests – through active planting and assisted natural regeneration – will support IWRM, while providing multiple additional environmental and social benefits. These include the rehabilitation of degraded land, the reduction in soil erosion, the production of NTFPs and an increase in water availability. The restoration of forest ecosystems, together with support for agroforestry by the project, will also increase nutrient and organic matter content in soils as well as increasing the water storage potential[49]. This will have a positive effect on agriculture, improving productivity and reducing the need to convert more land for crop cultivation. The pressure on natural ecosystems will also be reduced through improved livestock grazing practices and livestock water management. This will reduce the rate of land degradation and improve the natural regeneration of forest ecosystems. Further details on the outcome, outputs and indicative activities for Component 2 are provided below.

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[48]Government of Eritrea. 2008. Action plan for integrated water resource management (IWRM) in Eritrea. *Ministry of Land, Water and Environment.*

[49] An increase in soil organic matter and root density has been shown to increase the water storage potential of soils by 150 m^3 per hectare. - Kassam AH, Friedrich T, Shaxson TF & Pretty JN. 2009. The spread of Conservation Agriculture: justification, sustainability and uptake. International Journal of Agriculture Sustainability 7: 292-320.

Outcome 2.1.: Enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares

Output 2.1.1: Interventions to increase water availability and improve soil moisture implemented in the 5 kebabis.

Water availability is essential to rural communities who rely on agriculture and ecosystem services for their livelihoods. Project interventions will therefore improve water availability by: i) increasing infiltration to increase groundwater reserves; ii) restoring upper catchment areas to improve river flow; iii) demonstrating rainwater harvesting practices; and iv) introducing innovative landscape-level water harvesting technologies to direct rain and flood water into storage ponds, micro-dams and wadis. To ensure the effective management of water resources, the proposed project will undertake hydrological analyses of project sites to identify appropriate locations for the implementation of integrated water management, soil and water conservation interventions. The study will include an analysis of: i) ground water availability; ii) functionality of existing water storage facilities; and iii) the effect of water harvesting/capture on downstream water availability. Design flaws in existing water storage facilities will also be assessed, including whether existing facilities are functioning at their optimum capacity and where improvements can be made to enhance performance.

Based on the results of the assessment, site-specific interventions will then be designed to maximise the water harvesting capacity and soil water retention potential of the landscape. Both grey and green[50] infrastructure will be used, including: i) the planting of indigenous and multi-use trees in the upper catchment areas to improve infiltration and soil and water retention; ii) the implementation of physical interventions such as stone bunding and terracing to reduce runoff and improve infiltration; iii) directing rain/flood water to be captured in ponds, micro-dams and wadis; and iv) harvesting rainwater by treating surfaces to make run off available for irrigation and other uses[51].For rainwater harvesting, runoff will be stored in a reservoir to supply water in small fields, while ditches will be used to harvest rainwater from hillsides or gentle slopes where soil permeability is low. This will be linked to Outcome 1.3. for the promotion of climate-smart agriculture. Additional focus will be placed on controlling flood water and reducing erosion along primary access roads, thereby reducing degradation of the road systems and improving access to markets and essential services such as healthcare.

Indicative activities under Output 2.1.1 include:

- 2.1.1.1. Undertake site investigations and hydrological analyses of potential locations for the implementation of integrated water management, soil and water conservation measures, including watershed restoration to capture water and increase the functioning of existing ponds and wadis.
- 2.1.1.1. Establish water conservation infrastructure (grey and green) for the control and harvesting of rain and flood water.

[50] Grey infrastructure refers to hard, human-engineered infrastructure often involving concrete and steel. Green Infrastructure refers to the use of natural ecosystems as an infrastructure system.
[51]The approach of improving infiltration and harvesting rainwater/runoff will reduce the impact of increased water use for irrigation, preventing further depletion of groundwater resources and reducing the risk of increased soil salinity.

Output 2.1.2: Improved livestock grazing, and livestock water management practices promoted to reduce rangeland degradation and promote livestock productivity.

The proposed project will develop a community-level system for livestock and rangeland management to reduce the impact of livestock on the landscapes and water resources. This will include the management of land use for grazing/browsing, together with integrated crop-livestock systems and the promotionof cut and carry practices. To control grazing, special reserves will be defined – linked to permanent enclosures – where livestock will be allowed to graze in a controlled manner. Rotational grazing will also be promoted, allowing land to rest and recover naturally. In communal systems where paddocking is not feasible, increased mobility of herding will be promoted to prevent overgrazing of specific areas. Further to rotational grazing, livestock stocking densities will be managed based on wet and dry season biomass and water availability. When the degradation in an area is already too extensive to allow for natural regeneration of grasses and forbs, the areas will be reseeded to promote regrowth. Finally, fire management and removal of bush encroachment will be promoted to control the spread of unpalatable grass species and woody shrubs.

The effects of livestock on water resources will be controlled by the promotion of sustainable livestock water management. This will involve a two-faceted approach. Firstly, community-level protocols will be developed to inhibit herding around waterholes to reduce the trampling and piosphere affect around waterholes. Instead, a rotational system will be promoted in which livestock are herded to multiple waterholes at specific times to allow for drinking, leaving directly afterwards. This will help maintain water quality and prevent further land degradation. Secondly, livestock water management will be linked with watershed restoration practices (see Output 2.1.1) that will improve water availability and achieve a sustainable water-rangeland balance.
Indicative activities under Output 2.1.2 include:

- 2.1.2.1. Develop community-level livestock and rangeland management systems to reduce overgrazing and improve productivity of rangelands.
- 2.1.2.2. Promote sustainable livestock water management practices to reduce the piosphere effect and improve water availability.

Output 2.1.3: Agroforestry and forest restoration promoted through the establishment of community tree nurseries in Endlal, Laba, Bakla and Nakfa.

Agroforestry and forest restoration activities (see Output 2.1.1) require reliable access to healthy seedlings. The proposed project will, therefore, establish tree nurseries in Endlal, Laba, Bakla and Nakfa. There are existing nurseries in some of these locations: 1) in Endlal (serving Laba and Endlal) where the site has a total area of 1140 square meters, with an estimated potential capacity of 285,000 seedlings per year. This nursery is currently not well equipped, so will largely require improvements and labour capacity; 2) in Bakla, located equidistant from both Maret and Bakla, with a site of 3090 square meters, also not well equipped but has an estimated potential capacity of 772,500 seedlings per year, and has potential to be expanded. The third site is at Nakfa, with an area of 1200 square meters and seedling production capacity of 300,000 per year.

The establishment of the nurseries will involve extensive community consultations and scientific assessments of local hydrological interaction of trees and the landscape to identify locally appropriate tree species for cultivation. Potential useful tree options include: i) *Juniperus procera* – fuelwood, timber, shade and windbreaks; ii) *Olea europaeasubsp.africana* – fuelwood, charcoal, timber, medicine, bee forage and toothbrushes; iii) *Rhus glutinosa subsp. abyssunica* –fuelwood, timber, fruit and dry season fodder; iv) *Eucalyptus spp* – fuelwood, timber, bee forage and wind

breaks;*Carissa edulis* – fuelwood, fruit, medicine, fodder, bee forage and live and deadwood fencing; and v) *Acacia origena (*also known as *Vachellia origena)* – browse and deadwood fencing.

Once the nurseries have been established, community members will be trained on tree management. This will include the training of both nursery managers and community members to foster an understanding of the interactions of trees and the environment. People will also be trained on efficient water management, including irrigation.

Indicative activities under Output 2.1.3 include:

- 2.1.3.1. Establish tree nurseries in Endlal, Laba, Bakla and Nakfa
- 2.1.3.2. Train community members on tree management.

Output 2.1.4: Community-managed forest enclosures expanded through planting and assisted natural regeneration of indigenous and drought-resistant tree species, including the African Wild Olive (Olea europaea sub-species Africana), East African juniper (Juniperus procera) and Carissa edulis.

Forest ecosystems will be rehabilitated at the landscape level through the expansion of forest enclosures using a combination of active planting of trees and assisted natural regeneration. The area under enclosure will be expanded by 5,500 ha, from 20,925 ha to 26,425 ha. Assessments will be conducted to determine which enclosures can be expanded and where new enclosures can be established. The assessment will also identify the location and size of all new enclosure areas. For each enclosure, the appropriate tree species for restoration will be identified (see Output 2.1.3.) – incorporating multi-use trees in community managed forest enclosures and household woodlots – and a site-specific protocol will be developed outlining the technical standard and guidelines for reforestation activities. This will include the tree planting densities and horticultural techniques. The density of planting will depend on the proposed use. For forest restoration, trees will be planted at a density of 2.5 m x 2.5m (2,000 seedlings/ha), while silvipasture systems will be planted at an average density of ~400 seedlings per hectare and established in already existing mature forest.

Community members and extension staff will then be trained on the management and sustainable use of forest resources. This will be based on community-level agreements will regulate the use and management of woodlots. Guidelines for monitoring and enforcement of these regulations will also be produced, along with simple manuals on the sustainable use and management of forests and woodlots. Community-level champions will then be identified and trained to become trainers of other community members. They will also become custodians of knowledge on maintenance of woodlots and trees. To assist community champions in sharing information on forest restoration and maintenance, an awareness raising strategy will be developed. This will involve cost-effective methods to share information between community members and extension staff. A multi-stakeholder consultation forum will also be established, where people can meet, share experiences, share knowledge on benefits and teach each other. This will be linked with the community-level monitoring platform described in Output 1.2.3. The coordination between communities, including those outside of the project area, who use forest resources in Rora Habab based on existing natural resource sharing arrangements, will be further enhanced through the establishment of a joint forest resource management arrangements to ensure that sustainable practices protocols are known and adhered to by all users. The purpose of these joint management arrangements isto strengthen collaboration and information sharing between sub-

Zobas and provide resource users with adequate access to information on how to comply with legal requirements of SFM.

Since firewood collection represents a significant threat to trees and forests in the Rora Habab, as is the case in many parts of Eritrea, the project will also support identification and use of alternative energy sources for cooking and heating. Energy efficient wood stoves, locally referred to as "Adhanet Mogogo" are already used and accepted in Eritrea and can be provided as an important alternative energy source for use at household level. Different options will be considered based on an assessment of the local context and needs. A technology such as the African Clean Energy[52] stove which offers other use options and can also utilise solar, will be explored.

Indicative activities under Output 2.1.4 include:

- 2.1.4.1. Restore forest ecosystems through supplementary planting of trees as per technical standards and guidelines.
- 2.1.4.2. Train community members and extension staff on the management and sustainable use of woodlots and trees.
- 2.1.4.3. Establish a joint forest resource management network within the Rora Habab Plateau and surrounding areas/communities.
- 2.1.4.4 Support the procurement of energy-efficient stoves for use by households.

Output 2.1.5: Alternative livelihoods and value-addition opportunities identified and supported to reduce over-dependence on unsustainable land use practices, in particular, bee-keeping (honey production) and horticulture (vegetable and fruit crops).

To reduce people's dependence on the unsustainable use of natural resources, the proposed project will provide support for the development of alternative livelihoods and value-addition opportunities for local communities. This will focus on providing technical support for expanding the value chain of existing livelihoods, including: i) producing dairy products such as cheese; ii) producing meat from small livestock such as goat and sheep; and iii) producing honey. By expanding the value chain of these livelihoods beyond the primary production of raw natural resources, the project will improve the market value of produce, providing an alternative for income generation and reducing the need for overdependence on other potentially unsustainable land use practices. This will be further enhanced through the provision of training on the packaging and marketing of products, increasing their market value. A particular focus of the project will be on the diversification of income for female-headed households.

A market survey will be undertaken to determine the feasibility and viability of developing the market for processed goods at the local and regional scales. This will include engaging with government to develop a regional marketing strategy and researching potential private sector involvement.

Indicative activities under Output 2.1.5 include:

- 2.1.5.1. Provide technical support for expanding the value chain of existing livelihood strategies.
- 2.1.5.2. Train community members on packaging of products from existing livelihood activities to increase market value.

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[52] http://www.africancleanenergy.com/

- 2.1.5.3. Conduct a market survey to guide the development of local and regional markets.
- 2.1.5.4. Develop a market development support programme for small businesses in the project area.

Component 3: Knowledge management and awareness raising

GEF financing for Component 3: US$306,000
UNDP financing for Component 3: US$411,450
Government co-financing for Component 3: US$ 613,900

Without GEF-financed project

The Government of Eritrea has limited capacity within the relevant line ministries and academic institutions to adequately: i) collate and manage knowledge on community based, sustainable and integrated natural resource management (INRM); and ii) develop and implement education and public awareness campaigns on INRM. Human and technical capacity for the generation and collation of data and information, development and maintenance of modern data systems are limited, resulting in the limited availability and sharing of baseline data and overall use of information for decision-making within government in Eritrea. There is also limited generation and systematic sharing of knowledge on natural resource management which leads to a low level of understanding within communities, of the long-term negative impacts of unsustainable land-use practices. Given the scarcity of information available and the limited integration of environmental management into education programmes, the public has little understanding of the complex interactions within natural ecosystems and lack the skills to counteract these challenges. As a result, rural communities continue these unsustainable land-use practices, causing further land degradation and jeopardising ability and resilience of ecosystems to continue providing ecosystem goods and services that are at the same time a source of livelihoods and survival for the communities.

Knowledge and awareness of INRM and the associated socioeconomic and environmental benefits of reducing land degradation and restoring ecosystems – thereby improving communities' livelihoods – is likely to remain limited if information on INRM interventions is not shared at all levels. Furthermore, the capacity of national and local authorities to facilitate the implementation of such interventions will remain low. This will limit the replication and upscaling of good INRM practices across other regions of Eritrea.

With GEFfinancing
Building on data, information and knowledge generated through the other project components, work under this component will focus on documentation and collation of good practices and lessons learned from project implementation. It will promote the development of a simple knowledge sharing and management system to ensure these lessons and good practices are widely disseminated and shared throughout Eritrea. This will involve promoting education and awareness programmes to mainstream INRM from the national level to Zobas and down to community levels. Support for the implementation of project interventions will be generated through extensive public awareness campaigns that highlight the short- and long-term benefits of INRM.

The project will adopt an adaptive approach to the dissemination of knowledge, updating the information as lessons are learned from the project and adopting new methods of dissemination based on needs and responses from communities and land users. Project outputs will support the packaging of information using locally appropriate methodologies and establish dissemination

pathways that will result in maximin population coverage and uptake. Public awareness raising events will be arranged, along with training programmes for farmers and other land and resource-user groups and education programmes for schools. Special focus will be on gender and youth, with the development of a gender strategy to enhance the involvement of women and youth in the implementation of INRM practices. Finally, a strategy will be developed to promote the upscaling of best practices and lessons learned from the project to: i) other Zobas, sub-Zobas and kebabis; and ii) high-level decision-making platforms. These activities will contribute towards creating an informed and knowledgeable public that is committed to the sustainable development of land-use practices across Eritrea.

Further details on the outcome, outputs and indicative activities for Component 3 are provided below.

Outcome 3.1 Increased knowledge sharing and awareness at Zoba, sub-Zoba, Kebabi and community levels on integrated landscape management, including SLM, SFM, biodiversity conservation and water resource management.

Output 3.1.1: Communication, public awareness-raising and education campaigns conducted locally, with knowledge and best practices shared regionally and globally.

To increase public awareness of the importance of INRM, a series of awareness raising events will be organised. These events will use local media platforms to inform communities on the effects of climate change and benefits of appropriate integrated landscape management interventions. The campaign will include the development and dissemination of easily comprehensible, user-friendly literature on integrated landscape management and monitoring of the related interventions. These knowledge products will provide guidance on how to develop and implement watershed restoration and management practices, climate-resilient land use and area development plans as well as climate-smart agricultural practices. The development of an education programme will allow school-level learners to become aware of the benefits of INRM from an early age. Farmers and other land user groups will also receive targeted training on best practices and lessons learned for INRM and climate-smart agriculture. Lessons learned from the project will also be collated and disseminated: i) nationally through the information-sharing platform; ii) regionally through the Horn of Africa policy and knowledge/information networks (IGAD); and iii) globally through the UNCCD, UNCBD, UNFCCC.

Farmer training programmes will adopt several experiential learning methods including demonstration plots, farmer-farmer exchanges, field visits and study tours to publicise project activities and lessons learned from implementation experience. These field visits will include school and youth groups who will be encouraged to participate in various activities and competitions. Support will also be provided for the development and broadcast of farmer radio shows that provide easily accessible and useful agricultural and weather-related information to rural households.

Indicative activities under Output 3.1.1 include:

- 3.1.1.1. Conduct a public awareness campaign using local media to inform communities on the effects of climate change and benefits of appropriate integrated landscape management interventions.
- 3.1.1.2. Organise local-level awareness-raising campaigns and training programs for farmers on lessons learned and best practices.

- 3.1.1.3. Establish an education programme in local schools on the benefits of integrated landscape management interventions, including climate-smart agricultural technologies, livestock production practices and alternative income-generating activities.
- 3.1.1.4. Provide support to the development and broadcast of farmer radio shows.
- 3.1.1.5. Collate and synthesise lessons learned and best practices from project results, including the benefits of ILM interventions.

Output 3.1.2: A gender strategy developed and implemented, which includes capacity building and enhancing the participation of women in the implementation of INRM approaches and practices.

In response to the gender-specific effects of climate change and land degradation on women, a gender strategy will be developed, focusing on the: i) representation of women in land use planning and decision-making; ii) inclusion of gender matters in administrative processes; and iii) documentation of lessons learned from gender specific experiences and coping strategies. This gender strategy will guide the development of future projects and help promote community buy-in and support for project interventions.

Indicative activities under Output 3.1.2 include:

- 3.1.2.1. Collaborate with the NUEW to ensure that women's needs and interests are represented in the: i) preparation of land use and restoration plans; ii) strengthening and/or establishment of CBOs; and iii) development of community bylaws, under Outcome 1.2.
- 3.1.2.2. Create a discussion forum to facilitate dialogue on gender issues between the CBOs, Kebabi and sub-Zoba administration.
- 3.1.2.3. Document lessons learned from the experiences and coping strategies of women and men and the implications for a future project and program design.

Output 3.1.3: Strategy developed for the upscaling of lessons learned to: i) other Zobas, sub-Zobas and kebabis; and ii) high-level decision-making institutions

The proposed project will develop a strategy for scaling up lessons learned during project implementation across all administrative levels in Eritrea. Best practices and lessons learned will be shared between Zobas, sub-Zobas and Kebabis to: i) inform policy - and decision - making on a national level; and ii) influence the implementation of the baseline programmes in other parts of the country. The strengthened extension services, exchange and field visits will facilitate the replication and scaling up of the project activities elsewhere in Northern Red Sea Region and throughout Eritrea.

Indicative activities under Output 3.1.3 include:

- 3.1.3.1. Develop and implement a strategy for scaling up and replicating project activities and lessons learned throughout the Northern Red Sea Region.
- 3.1.3.2. Establish a good practice database, including traditional and project-supported activities.
- 3.1.3.3. Establish a system to periodically inform decision makers on best practices and approaches for ILM that are locally appropriate.

Incremental cost reasoning

Without the GEF investment, unsustainable land use practices and deforestation will continue to threaten ecosystem integrity and functioning in the Northern Red Sea Region of Eritrea and Rora Habab plateau in particular. Extensive ecosystem degradation in the area has negatively affected livelihoods and agricultural productivity for decades. The loss of forest habitats has also affected wildlife populations, with some species – such as the Nubian Ibex and Kudu – being classified as endangered, rare or locally extinct. Investments in post-war landscape restoration have facilitated the recovery of some forest ecosystems and augmented the availability of freshwater. Through the Ministry of Agriculture's Five-Year (2014-2018) Strategic Development Plan, significant investments are also being made to increase agricultural productivity throughout Eritrea, including in the proposed project area. However, if sustainable approaches to agricultural production and landscape restoration are not well integrated into development plans, they have the potential to facilitate the further adoption of ecosystem- and landscape-degrading practices. This poses a threat to the integrity of ecosystems and may lead to further ecosystem degradation and even collapse – for example through underground aquifer pollution and over pumping. They may also intensify the need to further convert land – for example for crop cultivation or grazing – and abstract more resources for agriculture. There is therefore a need to balance the goals of Eritrea's food security strategies and policies with the need to promote conservation and sustainable management of landscapes and natural resources, including forests, water and wildlife. While the Five-Year Strategic Development Plan makes mention of land and natural resource management plans, it is unclear what these entail, or how these will be developed at the landscape level. This challenge in defining which problems need to be address is partly due to the limited capacity for sustainable natural resource management and the bias towards agricultural production that utilises old and often unsustainable approaches. Building the skills and capacity to integrate long-term socio-economic and environmental sustainability into government programmes is therefore an integral aspect of natural resource management and conservation and should be fully integrated into agricultural policy and practice in Eritrea.

The GEF alternative is designed to turn around the conventional approaches currently being used and integrate sustainability aspects into agricultural production and natural resource management practices. Investments made now into integrated natural resource management in Eritrea have the potential to disrupt the widespread degradation of land and ecosystems in the country. This is particularly important in already-vulnerable landscapes such as the Northern Red Sea region, where the project will be implemented.

Without the proposed GEF alternative, the risk of further environmental degradation linked to the prioritisation of agricultural development and economic gains from agriculture will severely curtail the ability of the landscape and ecosystems to recover. This will reduce the provision of ecosystem goods and services and cause a decline in agricultural productivity, thereby further jeopardising the ability of farming communities and households to benefit from their surrounding landscape. Ecosystem degradation in the Rora Habab Plateau, and the Nakfa region in general, also poses a potential risk for the integrity of adjacent ecosystems in the Northern Red Sea region – particularly the Simenawi and Debubawi Bahri-Buri-Irrori-Hawakil area – which is the government's new focus area for biodiversity conservation and is the site for the development of Eritrea's first post-war protected area.

Global Environmental Benefits

A total of ~4,900 households are expected to be involved in the project activities, with a population coverage of ~22,477 people (11,576 males and 10,901 females). The ability of these households

to increase land and agricultural productivity will be promoted through the: i) improved access to irrigation water; ii) rehabilitation and restoration ecosystems; iii) provision of ecosystem services; iv) introduction of sustainable forest management practices; v) introduction of climate-smart agriculture practices; and vi) training of farmers on climate-smart integrated land management practices and vii) adoption of alternative energy efficient technologies.This will further contribute to household food security, in line with the goals of Eritrea's food security strategies. The promotion of alternative and sustainable income-generating activities – including the expansion of value chains – and incorporation of biodiversity strategies in agricultural production practices is expected to reduce pressures on land – for example by reducing the need for forest clearance for crop cultivation – and promote biodiversity conservation. Local level awareness of and buy-in for natural resource conservation and species protection will also be promoted through the: i) assignment of 'protected status' to flora and fauna species – including African Olive, Juniper and Nubian Ibex – within forest enclosures; and ii) setting aside and recognition of important wildlife habitats in local land-use plans and community by-laws.

The restoration and conservation of remnant forest/woodland ecosystems in the Rora Habab plateau will contribute to both regional and global biological conservation goals of the Afromontane Archipelago-like Regional Centre of Endemism. This will include the: i) expansion of the area of forest enclosures from 160 hectares to 5,660 hectares: ii) establishment of 12,000 hectares of agroforestry within temporary enclosures, rangelands and farming landscapes. Other soil and water conservation interventions will be promoted in watersheds and within settlements.

The carbon sequestration benefit (carbon sink) of the expansion of the forest enclosure area is estimated by the FAO EX-ACT tool[53], using IPCC Tier 1 data, to be ~6,363,189 tCO_2e over a period of 20 years (4,630,916 tCO_2e in biomass and 1,732,272 tCO_2e in soil), or ~318,159 tCO_2e/year. Tropical dry forest can continue to maintain positive net primary production and act as a carbon sink for decades, partly because stem respiration rates decrease with increasing tree size and partly because continual turnover of leaves, roots and woody material contribute to stabilisation of soil organic matter. Equilibrium between carbon assimilation and respiration may, therefore, not occur for several decades after planting[54]. Approximately 75% of the international carbon market sale is for less than US$ 10/t/CO_2e[55], but using the figure of ten dollars gives a total value of the project investment of US$ 63,631,890 over a 20-year period, which is more than the total GEF financing for the project (all components included). A potential income based on carbon sequestration in the project area would not be possible through REDD+ linked to the carbon market and with the whole country as the unit for MRV. However, there might be opportunities in the more accessible voluntary carbon market, financed by donors and NGOs, where the prices tend to be better than in the official carbon market.

The introduction of sustainable land management (SLM) practices will reduce current degradation trends for water, land and forests resources in the project area. As a result, pastures and agricultural landscapes will become more productive, thereby: i) improving local livelihoods; ii) securing food security; and iii) increasing income generation for men and women in the project areas. Sustainable land management practices will also lead to improved ecosystem integrity and the delivery of ecosystem goods and services that will benefit local communities. Furthermore, the sustainable management of forests and pastures will moderate runoff from intense rainfall

[53] http://www.fao.org/tc/exact/ex-act-home/en/
[54] See, for example, Keith *et al* (2009), 'Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests', *Proceedings of the National Academy of Sciences*, Vol 106 (28)
[55] World Bank Group 2017. Carbon Pricing Watch 2017 – An Advance Brief. 20 pp

events, reducing the risk of flooding that affects downstream populations and improving rainwater water infiltration across the landscapes. This will create further opportunities for sub-surface water storage through physical interventions. The pressure on scarce water resources and degraded rangeland ecosystems will also be reduced through improved water and livestock management approaches.

By incentivising sustainable forest management and ecosystem restoration, the project will create an enabling environment for greater investments in sustainable land management interventions at the local and national levels. This will promote the generation of global environmental benefits beyond the project's lifetime.

The proposed project directly contributes to the National Biodiversity Strategy and Plan for Eritrea (2014-2020) by promoting the mainstreaming of biodiversity conservation into agricultural landscapes in the Rora Habab Plateau of the North Red Sea Region of Eritrea. On a global scale, the project contributes to the achievement of the following Aichi Targets:

- Archi Target 1 – *By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.* The project site has a population of ~22,477 (~11,576 men and ~11,901 men). Since the interventions will be implemented within communities, it is expected that their direct participation in project activities will contribute to the raising of their awareness on the values of biodiversity and how to conserve and use it sustainably within agricultural production landscapes.

- Aichi Target 2 - *By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.* As part of Outcome 1.1 *(Support for the review of national level policy and legislative frameworks for integrated landscape restoration) and Outcome 1.2 (Integrated decision-support tools to enable multi-stakeholder participation in landscape and ecosystem restoration planning, implementation and monitoring)* biodiversity conservation and monitoring will be incorporated into local, regional and national land use and restoration plans, as well as policy and regulatory frameworks, including community by-laws and national regulations.

- Aichi Target 7 – *By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.* The entire project strategy, particularly Outcome 1.3 (*Capacity of institutions and resource-user groups strengthened to integrate climate-smart approaches into landscape restoration and agricultural production practices*) is geared towards the achievement of Target 7. The project will achieve this by developing decision support tools that are based on scientific assessments that promote the consideration of biodiversity in local and national level land use planning processes and through farmers' and land users' practices. Furthermore, training, awareness-raising and knowledge dissemination focusing on the benefits of conserving biodiversity and recognising its value to local communities will promote informed decision-making at household, farm, landscape and administrative-political levels. Climate-smart, agroecological and biodiversity-friendly land management practices, including physical restoration of degraded ecosystems will be promoted.

- Aichi Target 9- By 2020 invasive alien species and their pathways have been critically studied and prioritized, with the most harmful species brought under control through sustainable utilization and management programmes. Responding to the identified challenge, pathways are studied and monitored to prevent the introduction and sustainable utilization of invasive alien species in the country. Given its adverse impacts, invasive alien species will be studied, prioritized and sustainably utilized.

- Aichi Target 11- By 2020, at least 10% of the national territory, set-aside for Protected Area System for Conservation of Biodiversity and Mitigation of Land Degradation. Eritrea shall operationalize an integrated Semenawi and Debubawi Bahri, Buri-Irrori- Hawakil as well as Bara'sole Protected Area System with a total land area of 1,009,860 ha (649,266 ha for terrestrial and 360,594 ha for marine protected area) for Conservation of Biodiversity and Mitigation of Land Degradation. Biodiversity also continues to be managed and conserved in other potential woodland, grasslands and forest areas.

- Aichi Target 12 – *By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly those most in decline, has been improved and sustained.* The project will facilitate an understanding of the status of flora and fauna species in the Rora Habab Plateau and support the recognition and conservation of important species – in particular the African Wild Olive, the East Africa Juniper and the Nubian Ibex.

- Aichi Target 14 – *By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.* A significant portion of the project resources under Outcome 2.1 *(Enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares)* will be allocated to physical restoration interventions to increase the resilience of ecosystems and enhance their ability to continue to provide the goods and services that both land users and biodiversity depend on.

- Aichi Target 15 – *By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration of at least 15% of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combatting desertification.* The restoration of degraded forest ecosystems and the promotion of sustainable forest management under Outcome 2.1 *(Enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares)* will address the problem of land degradation, while the expansion of forest enclosures will lead to increased rates of carbon sequestration. This will support climate change adaptation and mitigation efforts in Eritrea.

The project will also contribute to several SDGs and targets, in particular SDG 7 (Affordable and Clean Energy), 13 (Climate Action), and 15 (Life on Land).

Knowledge Management

The element of knowledge generation and management is a strong aspect of this project, and weaved into all project components, and also receives special focus under Component 3 - *Knowledge Management and Awareness-raising.*

Knowledge will be generated together with farmers, user-groups, community-based organisations and local communities in the Kebabi Administrative Areas within the Rora Habab Plateau. The project will specifically support and facilitate improved access to knowledge, and the development of guidelines and tools based on action research, field demonstration and the use of traditional and scientific knowledge in the design of response strategies. Local knowledge and experiences will therefore be documented and packaged in a manner that will be accessible for use by other users elsewhere. The project will also strengthen technical capacity at the local level, thereby contributing to increased capacity of extension services to deliver advice on sustainable and INRM to farmers and land users. In addition, the project will improve knowledge management among targeted institutions and communitiesand train all relevant land and resource-users on best practices and approaches to natural resource use and management.

Risks and assumptions

The list of project risks has been expanded since the original PIF to make them more specific and comprehensive. These risks are summarised in the table below. As per standard UNDP requirements, the risks detailed in the table below will be monitored quarterly by the Project Manager/Coordinator. The Project Manager will report on the status of the risks to the UNDP Country Office who will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. 5). Management responses to critical risks will also be reported to the GEF in the annual PIR.

Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Increased frequency and intensity of droughts under climate change conditions negatively impact the habitability of the Rora Habab Plateau for water-dependent wildlife species (such as Nubian ibex) and may affect the restoration interventions that are dependent on rainfall such as reforestation.	Environmental	P=3 I=4	(i)Training on DRM and early warning; (ii) Improved water harvesting practices combined with SLM/SFM. The project will adopt an ongoing learning-by-doing approach that will allow for iterative and adaptive management. (i) Focus on reliability of water in selection of communities to establish nurseries; (ii) Additional production in one central nursery with reliable water resources, to complement community nurseries that have problems. Under Output 2.1.1 of the project, interventions will be implemented to improve water availability in the Rora Habab Plateau through inter alia: i) increased infiltration to strengthen groundwater reserves; ii) improved river flows through the restoration of upper catchment areas; and iii) enhanced filling of storage ponds, micro-dams and wadis through the introduction of innovative landscape-level water harvesting technologies. Consequently, water availability within the project area will be strengthened, reducing the impacts of droughts on wildlife. This risk will also be mitigated through the identification of natural wildlife corridors connecting the project area to neighbouring areas. For example, the project area is connected to the Seminawi and Debubawi - Bahri – which	MoLG, MoLWE	Increasing

			has been targeted for the establishment of a protected area – through the central highland zone. Restoration activities implemented under Output 2.1.3 will improve the ecological functioning of this natural corridor allowing local wildlife to access water (and other resources) during drought periods.		
The increased density of wildlife in the project area results in a rise in the occurrence of human-wildlife conflict. This may include: i) crop damage caused by herbivores (e.g. greater kudu) or omnivores (e.g. warthog); ii) competition for resources – water and food – between wild and domestic species; and iii) killing of livestock by predators (e.g. leopard; Panthera pardus). Such conflict may result in the retaliatory killing of wildlife – including endangered species – and a negative attitude of local communities to the conservation of biodiversity.	Social and Environmental	P=2 I=3	The enforcement of Article 31 of the Forestry and Wildlife Conservation and Development Proclamation No.155/2006 will ensure that the Government of Eritrea compensates community members for any damage caused by wildlife – such as crop damage and livestock losses. Furthermore, the revision of community by-laws to integrate biodiversity conservation and the protection of endangered species into landscape management will allow for planning to mitigate human-wildlife conflict in the project area. This will be supported by awareness-raising activities carried out under Output 3.1.1, which will increase the awareness of communities on the conservation of biodiversity. Improved agricultural practices, resulting in a decrease in the degradation of and pressure on ecosystems will minimise the movement of wildlife through agricultural areas, as well as limit the competition for resources between wild	MoLG, MoLWE	No change
Institutional capacity and relationships between line ministries are not sufficient to provide effective solutions to environmental problems that are complex and multi-sectoral. The capacity of state institutions, notably in Government agricultural extension services and for natural resource management, is known to be weak and under-resourced.	Organisational	P=3 I=4	The project will have a strong focus on building the staff, resource and technical capacity of farmers, agricultural extension agents, local authorities, across the natural resource management and agricultural production spectrum, to ensure that they are adequately capacitated to design and manage SLM and landscapes/watershed/forest restoration interventions. Training and capacity building activities will focus on ensuring that decision-making on resource use and management (e.g. agricultural extension services and watershed rehabilitation) integrates knowledge, science and best-practice to promote environmental sustainability of management interventions.	MoLG, MoLWE, MOA	No change
Reduced co-funding and delays of public funding due to higher Government priority to other issues.	Financial and Political	P=3 I=3	There is strong government support towards the type of interventions that the project support, and so this will guarantee that sufficient resources will be available to the project.	MoLG, MoLWE	No change

Limited human resources and institutional capacity, particularly at the Zoba and sub-Zoba level.	Organisational / Operational	P=3 I=3	Capacity building and training for community and government institutions will contribute to efficient and effective project implementation and uptake of interventions promoted by the project.	Organisational / Operational	
Increased security risk in project area negatively impacts field operations	Political and Social	P = 3 I = 3	The Eritrean government adopts a strong NIM approach to project implementation ensuring that conditions always facilitate continuation of work, atleast by local authorities. The project will also build strong relationships with local communities; (ii) Maintain fluent communication with UNDP national security advisor; and (iii) Assure that all project staff have security	MoLG, MoLWE	

As per UNDP policy, a social and environmental risk screening exercise was conducted at PPG stage to identify potential risks that may require monitoring and mitigating. The table below presents a summary of the identified risks, their probability and impact, as well as their significance, as indicated in the UNDP Social and Environmental Screening Procedure. The full SESP is annexed to the PRODOC (see Annex E).

Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
Risk 1: The capacity of state institutions, notably in Government agricultural extension services and for natural resource management, is inadequate and under-resourced. Principle 1, item 5 (checklist): Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	I = 3 P = 3	**Moderate**		The project will have a strong focus on building the staff, resource and technical capacity of farmers, agricultural extension agents, local authorities, across the natural resource management and agricultural production spectrum, to ensure that they are adequately capacitated to design and manage SLM and landscapes/watershed/forest restoration interventions. Training and capacity building activities will focus on ensuring that decision-making on resource use and management (e.g. agricultural extension services and watershed rehabilitation) integrates knowledge, science and best-practice to promote environmental sustainability of management interventions.
Risk 2: Stakeholder capacity for participation in decision-making is inadequate. All land in Eritrea belongs to	I = 2 P = 2	**Low**		The project will support communities and land users to gain skills and capacity to

the state, and citizens only have user rights to resources on it. Principle 1, item 6 (checklist): Is there a risk that rights-holders do not have the capacity to claim their rights?				participate in local level decision-making process about the use of land and other natural resources within community control. Community institutions and resource-user groups such as farmers' associations and water user associations will also be trained/capacitated with skills to adopt and take up improved agroecological and land use practices that position them to better benefit from the use of natural resources and ecosystem goods and services.
Risk 3: Project-supported reforestation activities are intended to promote ecological and watershed benefits, but unintended consequences (e.g. excessive abstraction of groundwater by trees) is possible if fast-growing tree species are planted in areas with low precipitation. Standard 1, 1.5 - Would the Project pose a risk of introducing invasive alien species? 1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?	I = 3 P = 3	**Moderate**		The project is designed by biodiversity, SLM, SFM and climate change experts to promote reforestation and regeneration of degraded forests and watersheds. Only indigenous plant species will be promoted by the project for enrichment planting and nurseries. It should be noted, however, that in Eritrea the practice of using exotic tree species for reforestation is common and widespread and the project will respect the local communities' control of the production in their nurseries and plantations. The project will actively engage the relevant state agencies on the pros and cons of this approach and ensure that project funds are only used to promote interventions that enhance rather than jeopardise ecosystem integrity. Where exotic species are used, UNDP will ensure that these are procured using government co-financing, and not UNDP or GEF funds.
Risk 4: Increased frequency and intensity of droughts under climate change conditions negatively impact the habitability of the Rora Habab Plateau for water-dependant wildlife species (such as Nubian ibex) and may affect the restoration interventions that are dependent on rainfall such as reforestation. Standard 2 - Climate Change Mitigation and Adaptation, 2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	I = 2 P = 2	**Low**		Training on DRM and early warning; (ii) Improved water harvesting practices combined with SLM/SFM. Under Output 2.1.1 of the project, interventions will be implemented to improve water availability in the Rora Habab Plateau through inter alia: i) increased infiltration to strengthen groundwater reserves; ii) improved river flows through the restoration of upper catchment areas; and iii) enhanced filling of storage

				ponds, micro-dams and wadis through the introduction of innovative landscape-level water harvesting technologies. Consequently, water availability within the project area will be strengthened, reducing the impacts of droughts on wildlife. This risk will also be mitigated through the identification of natural wildlife corridors connecting the project area to neighbouring areas. For example, the project area is connected to the Semienawi and Debubawi Bahri – which has been targeted for the establishment of a protected area – through the central highland zone. Restoration activities implemented under Output 2.1.3 will improve the ecological functioning of this natural corridor allowing local wildlife to access water (and other resources) during drought periods.
Risk 5: Landscape restoration (soil and conservation) activities in Eritrea are usually implemented using the community mobilization approach, where community members carry out supervised physical work (e.g. building stonewalls, bunds, terraces, planting trees etc.) on communal land. An average government fee for each category of work, referred to as 'Work Norm' *(e.g. Hill side terrace construction /width=1m/height > 75cm)* is compensated at about US$4 per day. Principle 3, Standard 3 3.8 - Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	I = 3 P =3	**Low**		To ensure compliance of the intervention with the national and international labor standards (i.e. principles and standards of ILO fundamental conventions), the project will ensure that the social and environmental safeguards policy of the UNDP (SES) are fully adhered to implementation stages of the project. The project will put in place a mechanism to ensure that all labour utilized by the project is fully compensated through a cash-for-work mechanism following the guidance put in place by government.

Stakeholder Engagement

The implementation strategy for this project includes extensive stakeholder participation. At a broad level, participation and representation of stakeholders will be conducted through the governance structures to be put in place by the project as outlined and depicted in the organigram in the Governance and Management Arrangements of this document and through the existing structures at national and local/village levels (e.g. CBOs, Farmer Associations). Stakeholders will be engaged throughout the project implementation phase to: i) promote community understanding of the project's outcomes; ii) promote local community ownership of the project through engaging in planning, implementing and monitoring of the landscape restoration interventions; iii) communicate to the public in a consistent, supportive and effective manner; and iv) maximise

synergy with other ongoing projects.A stakeholder engagement plan is annexed to this document (see Annex F), and will be revisited for refinement during the project Inception Phase to ensure it is comprehensive and locally-adapted to the context.The different project stakeholders will participate in the project activities as outlined in the table below.

Component	Outcome	Stakeholders	Key Responsibilities
Component 1. Institutional capacity and enabling framework for integrated landscape management in over 80, 000 ha in the Nakfa sub-Zoba.	Outcome 1.1: Support for the review of national level policy and legislative frameworks for integrated landscape restoration	MoLG – Department of Agriculture and Land MoLWE FWA MOA NUEW NUEY	• Participation in the capacity and resource needs assessment. • Preparation of capacity development strategy. • Establishment and strengthening of community institutional structures. • Training programme developed and implemented.
	Outcome 1.2: Integrated decision-support tools to support multi-stakeholder participation in landscape and ecosystem restoration planning, implementation and monitoring.	MoLG MoLWE MoA Zoba, sub-Zoba and Kebabi administrations NUEW NUEY	• Development of network and information sharing platform. • Establishment of Farmer Advisory Services. • Establishment of linkages with international institutions.
	Outcome 1.3 Capacity of institutions and resource-user groups strengthened to integrate climate-smart approaches into landscape restoration and agricultural production practices.	MoLG, MoLWE MoA MOLG Zoba, sub-Zoba and Kebabi administrations Farmers Resource User Groups NUEW NUEY	Training of extension agents, local government representatives and community members.
Component 2: Implementation of on-the-ground interventions to reduce land degradation and pressure on forests and increase agricultural productivity.	Outcome 2.1: Enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares	MoLG – Department of Agriculture and Land MoLWE MoA Zoba, sub-Zoba and Kebabi administrations Farmers Resource User Associations NUEW NUEY	• Review and assessment of capacity and capacity needs • Implementation of physical interventions at landscape and farm levels • Review of and updating extension packages. • Development of monitoring and evaluation strategy. • Development and implementation of community-based land-use and restoration plans. • Development and implementation of alternative livelihood options. • Assessment of the groundwater and surface water resources. • Identification and implementation of improved water use and management techniques. • Support to farmers on implementation of on-farm water conservation measures • Implementation of a range of climate-resilient agricultural technologies and

			methods within and around pilot communities • Establishment of demonstration plots at each of the project intervention sites. • Training of local communities on climate-smart agricultural technologies and livestock production methods.
Component 3: Knowledge management and awareness raising	Outcome 3.1 Increased knowledge sharing and awareness at Zoba, sub-Zorba, Kebabi and community level on integrated landscape management, including SLM, SFM, biodiversity conservation and water resource management.	MoLG MoLWE MOA NUEW NUEY Farmers Resource User Associations	• Awareness-raising campaigns for stakeholders, academic institutions, NGOs, CBOS and local communities. • Implementation of a gender strategy • Disseminating lessons learned and knowledge generated through the project

This project will build on lessons and knowledge generated from a portfolio of past and ongoing initiatives and projects funded by government and other partners, including the GEF. Key GEF and donor-funded ones include the following:

The project will build on lessons from the former GEF SIP, *Sustainable Land Management Pilot Project* (UNDP ID: 2979; GEF ID: 3364), whose objective was "To create the enabling environment (policy, capacity, knowledge, alternatives) necessary for adoption of sustainable land management practices and alleviate environmental degradation while improving livelihoods of the farming communities of the Central Highland Zone (CHZ)". The project will draw from the lessons learned and replicate the best practices for SLM, particularly relating to positive linkages between land tenure security and increased investments in SLM by farmers and the resultant agricultural productivity and ecosystem resilience.

The project will also significantly learn from the Adaptation Fund project entitled *Climate Change Adaptation Programme in Water and Agriculture in Anseba Region*, Eritrea (PMIS 4540), soon to conclude in 2018. The Adaptation Fund project w designed to address climate change adaptation issues within the neighbouring Anseba region in Hamelmalo and Habero Sub-Zobas. The Adaptation Fund project is focused on increasing community resilience and adaptive capacity to climate change through an integrated water management and agricultural development approaches. The GEF-financed project will draw upon the lessons learned regarding enhanced climate-resilient agricultural and livestock production, as well as erosion control through floodwater harvesting and irrigation technologies. One of the lessons learned from the Adaptation Fund project to date is that farmers seek local-level solutions to the environmental challenges they face and acknowledge the benefits of such interventions in terms of increased ecosystem goods and services (e.g. increased water availability, higher agricultural yields, etc.).

Similarly, the Rora Habab project will closely coordinate with the GEF-financed*Integrated Semenawi and Debubawi Bahri-Buri-Irrori-Hawakil Protected Area System for Conservation of Biodiversity and Mitigation of Land Degradation project* (UNDP PIMS 4816; GEF ID: 4559), whose objective is "To establish a national system of protected areas to conserve biodiversity and mitigate land degradation pressures on habitats in key biodiversity areas, initially centred in the Semenawi-Debubawi Bahri-Buri-Irrori-Hawakil Protected Areas Cluster". The biodiversity mapping activities planned under the new proposed project will also provide valuable information about the status of Eritrea's fauna and flora, including the African Olive, Juniper and Nubian Ibex, which form part of the Rora Habab's key biodiversity species.

An LDCF project on *'Mainstreaming climate risk considerations in food security and IWRM in Tsilima Plain'* (GEF ID: 6923, UNDP ID: 4633) focusing on improving ecosystem resilience and management for improved agricultural productivity. The project objective is to integrate adaptation measures into ecosystem restoration and agricultural production systems to address climate change in Eritrea and secure the benefits of the National Food Security Strategy and IWRM Action Plan. In doing so, the LDCF-financed project is supporting the implementation of Priorities 3,4 and 5 of Eritrea's NAPA – which focus on livestock, forestry and water resources, respectively. The LDCF project is closely aligned with the Rora Habab project in that they are both geared at supporting ongoing initiatives on landscape restoration, although the Rora Habab project has a strong focus on forest restoration owing to its location and the landscape that it will be implemented. At the central government level, both projects will be under the oversight of the Ministries of Local Governmnet (MoLG), Agriculture (MoA) and that of Land, Water and Environment (MoLWE). This central-level coordination by the three Ministries will facilitate cross-project learning and promote joint planning and monitoring by the two institutions, which has been identified as one of the missing elements in NRM planning and implementation in Eritrea, as is the case in many other countries.

The African Development Bank has recently launched (early 2016) a $1.4m project on *'Drought Resilience and Sustainable Programme in the Horn of Africa'* and aspects of this project will be implemented in the Nakfa sub-Zoba. The proposed GEF-financed project will also coordinate closely with the project to ensure reduced duplication and increased complementarity.

Gender equality and empowering women

Gender analysis was undertaken during project preparation using the *UNDP Guide to Conduct a Participatory Gender Analysis and Developing a Gender Action Plan for projects supported by UNDP with GEF financing* (see Annex G). The project falls within the Gender Targeted ranking (UNDP GEN 2 - Gender equality is not the main objective of the expected output, but the output promotes gender equality in a significant and consistent way): It will target a 50/50 ration of women, men or marginalized populations. The project will promote gender mainstreaming and capacity building within its project staff to improve socio-economic understanding of gender issues and will appoint a designated focal point for gender issues to support development, implementation, monitoring and strategy on gender mainstreaming internally and externally. This will include facilitating gender equality in capacity development and women's empowerment and participation in the project activities. The project will also work with UNDP experts in gender issues to utilize their expertise in developing and implementing GEF projects. These requirements will be monitored by the UNDP Gender Focal Point during project implementation.

Gender is a complex issue in Eritrea, as in other places. Although women have equal rights in terms of national law, they are still disadvantaged in terms of access to economic opportunities and decision-making. Gender equality is, however, enshrined in the country's legal frameworks, including the National Policy on Gender (2004) and the National Gender Action Plan (2003-2008). In addition, legislation has been passed relating to gender equality issues, including tenure of land. The Rora Habab project will therefore build on and seek to alleviate gender disparities likely to be imposed by land and ecosystem degradation and climate change on natural resource-dependent livelihoods. Consequently, there is increasing recognition of women as natural resource managers, evident in their greater leadership representation in contemporary community structures.

Women farmers are increasingly taking charge of rural households and are taking on a considerable burden. Surveys suggest that Eritrean women face the following problems: i) access

to resources such as land and water; ii) access to credit; iii) design limitations including plot size and allocation, as well as labour; and iv) training and extension is limited. Various community-based irrigation programs have been implemented in Eritrea which have proven to generate significant benefits to female headed households. For example, women farmers have increased responsibility and improved their skills in managing both irrigation projects and water management systems. As a result of such programs, women have also increased their financial capacity and the livelihoods of their families. However, there are certain factors which constrain these programs and women's participation in particular, including: i) shortage of labour adding to their already burdensome household tasks; ii) capital constraints; and iii) a lack of knowledge in water management.

In the Rora Habab Plateau analysis of gender issues revealed the following issues that the gender strategy to be developed during implementation will consider as key to shaping the project responses:

- 96% of the households consider raising children and elderly to be the burden of females.
- 77% of the respondents are of the opinion that fetching water is mainly the responsibility of female.
- Women predominantly participate in household management as compared to their male counterparts. Such a situation will evidently limit women from being involved in project activities that will empower them and improves their livelihood.
- 71% indicated that males exclusively or predominantly participate in farming.
- Rearing livestock is an activity where both male and female households show significant participation
- The limited involvement of women in Rora Habab in farming activities is also an area that deserves attention.As involvement in farming activities such as horticulture, crop production, beekeeping and so on, are potential sources of income to households, the current project needs to ensure involvement of women in farming activities to enhance their socio-economic situation.Furthermore, the current project needs to consider the involvement of women in the formal sector of the economy to ensure sustainable natural resource management that provides equal opportunities to improvement of the livelihood of the community.

Access and control over resources

- Irrespective of their gender, members of the communities in the project area perceive that they get different benefits such as food and nutrition, and income from the resources.
- This is an encouraging result as it enhances commitment of the communities to protect the natural resources.
- The study also reveals that fuel is perceived as a benefit by significant members of the community. This attitude necessitates looking for alternative sources of energy such as ADHANET MOGOGO for the community to ensure sustainable resource management.
- The study shows that female respondents perception of the benefits they acquire from the natural resources is slightly better as compared to their male counterparts. This is an encouraging result that calls for considering involvement of women in activities of the project such as tree planting, terracing, beehive, horticulture, raising animals, development of micro dams and so on.
- Perception that the community members have equal access to land (85%), forest (73%) and capital (75%) is high.
- Most (80%) of the members of the community perceive that males have better access to livestock.

- Most (82%) are of the opinion that both have equal access to farming inputs.
- Even though in theory all members of the community have equal access to natural resources, the main customers of SMCP are women. Further, the NUEW have schemes used to improve the livelihood of women at the grass root level. Thus, women at the grass root level are in a better situation in relation to the access they have to finance.
- Further, it should be noted the labor law proclamation in the Eritrea provides equal employment opportunity to all citizens. This entails project activities related to the conservation of natural resources to consider recruitment and remuneration on equal basis irrespective of their gender.

Decision making

- The control and decision-making power of husbands over land is by far more than their corresponding wives despite the fact that the land proclamation provides equal opportunity.
- Enhancing the level of awareness of the community would reduce such anomalies.
- Survey results reveal that men have more control and decide over the livestock and capital of the households as well as selling crops and livestock as compared to female. Such control provides better economic power to men as compared to female.
- Thus, economic decisions are predominantly the role of men. Project activities need to take into consideration to redress this situation in order to empower women in the area.
- Survey results show that about 3/4 of the respondents indicate that household expenditure is equally the role of male and female or it is predominantly male.

In line with the National Gender Action Plan and the National Gender Policy, and the GEF and UNDP policies on gender, gender considerations will be mainstreamed into the project's activities to ensure that women are included in the selection of activities to increase their resilience and income-generation abilities, as well as in the various training and capacity-building programs. Women user groups and female-headed households will be targeted. *Output 3.1.2: A gender strategy developed and implemented, which includes capacity building and enhancing the participation of women in the implementation of INRM approaches and practices*, will support the design of a gender strategy to specifically guide the differential needs of men and women and the equitable distribution of benefits, resources, status and rights to them. The project therefore strives to be gender responsive and support the empowerment of women and other vulnerable groups. In addition, technical support and advice will be sought from the National Union of Eritrean Women (NUEW) during the project implementation period to ensure that women's needs in the Rora Habab project area are being properly addressed.

In alignment with the rights-based approach to development put forward by Eritrea's National Gender Policy, the GEF-financed project will identify opportunities to increase youth and female participation in the project's activities and decision-making processes. These will include:

- Monitoring of youth and gender-disaggregated indicators and targets in the results framework of the project, specifically for participation at government and community training workshops, demonstration activities and management committees.
- Targeting of gender- and youth-differentiated vulnerabilities into project interventions so that the most vulnerable groups within a community receive support from the project.
- Facilitating participation of stakeholders through project planning processes to ensure that youth and gender considerations are appropriately mainstreamed into project activities during implementation.

Based on the findings of the gender analysis conducted during the PPG, the project will adopt the following Gender Action Plan to ensure that gender is comprehensively mainstreamed into the implementation of the project, through the project Component outcomes. The Gender Action Plan will be further elaborated during implementation and guide the development of the Gender Strategy.

Component/Outcome	Considerations and planned actions
Component 1: Institutional capacity and enabling framework for integrated landscape management in over 80,000 ha in the Nakfa sub-Zoba	
Outcome 1.1: Support for the review of national level policy and legislative frameworks for integrated landscape restoration	The legislative and policy frameworks will ensure that a consideration of the differentiated impacts of land degradation and climate change on women and other vulnerable groups are recognized through the development of gender-responsive and pro-poor strategies and responses. The review will also ensure that future policies and legislative framework adequately consider the issue of gender.
Outcome 1.2: Integrated decision-support tools to support multi-stakeholder participation in landscape and ecosystem restoration planning, implementation and monitoring.	Decision-support tools are currently lacking, and therefore responses and interventions are largely gender-blind. Decision-support tools to be developed through the project will be based on assessments and analyses that recognizes that men, women and other groups are affected differently by environmental degradation. These tools will be developed for decision-making at all levels, from the local where interventions are implemented to the national where decisions on responses are taken.
Outcome 1.3: Capacity of institutions and resource-user groups strengthened to integrate climate-smart approaches into landscape restoration and agricultural production practices.	Training and capacity strengthening activities will specifically target women, youth and other marginalized groups at the local level, but also among key government institutions, to ensure that the skills of women, youth and these marginalized groups inform responses.
Component 2: Implementation of on-the-ground interventions to reduce land degradation and pressure on forests and increase agricultural productivity.	
Outcome 2.1: Enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares	Landscape restoration activities will target both men and women and ensure that the approaches used do not reproduce disparities between groups, but rather specifically targets these groups as beneficiaries.
Component 3: Knowledge management and awareness raising	
Outcome 3.1 Increased knowledge sharing and awareness at Zoba, sub-Zoba, Kebabi and community levels on integrated landscape management, including SLM, SFM, biodiversity conservation and water resource management.	The gender strategy will be developed under this component and ensure that gender mainstreaming is not a standalone issue but rather weaved into all project components. Through the strategy, women, youth and other marginalized groups will be targeted for training, capacity building and activities on landscape restoration to ensure they not only inform activities but are also equal beneficiaries of project interventions.

South-South and Triangular Cooperation (SSTrC)

This project is country specific and does not include a specific focus on collaboration with other countries for the implementation of project activities. However, it draws on global principles of sustainable natural resource management and the lessons learnt from the project will be disseminated regionally. The project will also promote transboundary conservation efforts for the threatened Nubian Ibex.

Innovativeness, sustainability and potential for upscaling

Efforts to address deforestation, biodiversity loss and land degradation should be undertaken in a manner which supports the broader objective of sustainable development in Eritrea. Given that the majority of the Eritrean population are dependent upon ecosystem goods and services for their livelihoods, enhancing the resilience and productive capacity of ecosystems is essential to ensure the economic and social wellbeing of local communities – especially the rural population living in poverty. Central to ecosystem restoration in Eritrea is the rehabilitation of watersheds and agricultural landscapes. This, however, is unlikely to be effectively achieved without requisite technical and institutional capacity for mainstreaming sustainability considerations into rehabilitation and restoration programmes.

To ensure the long-term sustainability of project interventions, it is important to consider three categories of sustainability, namely: i) social; ii) financial and economic; and iii) institutional sustainability. The proposed project's approach to each of these categories is described below.

- **Social sustainability:** The sustainability of a project is largely dependent on the willingness of stakeholders to adopt and continue to implement interventions beyond the project lifespan. Social sustainability will, therefore, be achieved by building the capacity of communities to undertake their own landscape-level land use and rehabilitation plans. The current baseline on landscape restoration in Eritrea is strong, as shown in the baseline section. The government has been investing in soil and water conservation interventions for decades, albeit with shortcomings in the approaches used and the effectiveness of these to reverse land and ecosystem degradation. By providing the appropriate technical support to communities and incorporating knowledge, information and best practices on integrated natural resource management, the project will equip communities with the skills they need to incorporate sustainability into land use planning and soil and water conservation interventions at farm and landscape levels. Community-based interventions have proven to constitute an effective vehicle for building resilience, as well as addressing social drivers of vulnerability and other factors related to social exclusion. The organisational capacity of the local communities to implement sustainable land management practices will also be developed through training programmes provided to community members and government staff.

- **Financial and economic sustainability:** To support the long-term sustainability of interventions when project funds are depleted, communities and government will be required to continue to invest time and money into the maintenance and upscaling of interventions. As also indicated in the baseline discussion, significant investments are already being made by government institutions and communities in addressing land and ecosystem degradation, and these are expected to continue beyond the life of the project. The level of contributions will be contingent upon the type of activities being implemented and the financial circumstances and needs of the beneficiary communities or households. Eritreans already invest significant amounts of labour and effort into government- or donor-funded community-level projects. For long-term sustainability to be feasible outside of donor-funded projects, these interventions must yield sufficient financial benefits. These can be either direct benefits – such as increased income from jobs and livelihood activities – or indirect benefits – such as reduced damage or loss of property from natural disasters. The project will, therefore, promote sustainable income-generating activities, including *inter alia*: i) the harvesting of non-timber forest products; ii) beekeeping (honey production); iii) the establishment and/or upscaling of tree nurseries; and iv) the expansion of value chains. Further alternative income-generating activities will be identified, and technical support provided for the implementation thereof. For farmers, agricultural and livestock production will be increased through the introduction of climate-smart agriculture technologies, increasing income generation through these livelihood

activities. Finally, capacity building programmes initiated through the proposed project will build the capacity of communities and government institutions to make informed investment decisions for landscape management and land use planning. This will ensure both social and economic sustainability of interventions.

- **Institutional sustainability**: All project planning processes and activities will be aligned with existing government institutional and planning frameworks. Support for the review of existing legislative and regulatory frameworks will contribute to much-needed integration of sustainability considerations into these frameworks and guide appropriate measures for landscape and natural resources management practices in Eritrea. Training and capacity development will further enhance the capacity of institutions to plan, implement and monitor interventions and promote a better balancing of socio-economic and environmental benefits of development programmes.

A multi-faceted approach to land use planning will build stronger social capital, where initiatives empower communities to address the underlying development issues and not just the symptoms. Such an approach will support communities to adopt more resilient livelihood strategies and maximise the benefits of ecosystem goods and services. The project will be implemented through the national government, local authorities, village institutions and extension structures using a bottom-up approach to ensure that local communities are responsible for identifying the problems and implementing the identified interventions. This, along with the declaration of community-level champions for forest restoration, will ensure community ownership of the project and promote the long-term monitoring and maintenance interventions. These champions will become the custodians of knowledge, assisting and training fellow community members on the restoration and maintenance of forest resources, creating an enabling environment for knowledge sharing and awareness raising, promoting the sustainability and upscaling of sustainable land management practices.

By strengthening the capacity of government institutions – which have a national mandate – to provide knowledge-based advice to communities through regional extension services, the project will increase the likelihood and potential for replication. Similarly, an empowered extension service will ensure a nation-wide dissemination and application of knowledge-based products developed by the project. The proposed project will also directly support the scaling-up of Eritrea's ongoing investments on local-level landscape restoration which have been supported by the government through community mobilization.

The sustainable forest management (SFM) elements of the project are expected to institutionalize forest restoration into landscape management and agricultural practices and facilitate a systematic integration of SFM into the policy and regulatory frameworks of Eritrea at local (i.e. land use and restoration plans) and national (Forest Policies and Regulations) levels. Furthermore, the project is expected to integrate sustainability principles into forest restoration programmes – including decision-making on species, location of interventions and the monitoring of interventions – and their impacts of ecosystem health and economic benefits arising from them. Finally, lessons learned from the restoration of degraded ecosystems and the promotion of biodiversity in agricultural landscapes will be integrated into future land use planning and project design, allowing for informed decision making. This will facilitate the upscaling of sustainable land management practices across the country.

IV. PROJECT MANAGEMENT

Cost efficiency and effectiveness have been considered in the design of all project activities. Several cost-effective resource management practices have been identified, including: i) implementing interventions to increase water availability and soil moisture; ii) introducing climate-smart practices for agriculture and livestock management; iii) restoring degraded forest ecosystems; and iv) introducing alternative livelihoods and value-addition opportunities to reduce over-dependence on unsustainable land use practices. The effectiveness of these interventions is maximised when combined with extensive training and awareness-raising activities for relevant stakeholders. These measures are considered cost-effective as they: i) optimise the spending of project funds on meeting the needs of the local communities; and ii) ensure that the benefits of project interventions are well understood by beneficiaries to promote support for the project and the efficient use of finances.

To reduce costs and to avoid duplication, the proposed GEFTF project will pursue active partnerships with other ongoing initiatives in and around the project area, including government-funded restoration projects (see Annex L for more details on aligned projects). Through this collaboration, the project will build on the lessons learned and best practices from past and ongoing projects and ensure that cost-effectiveness is included as selection criteria in the identification of site-specific restoration and land management practices and implementation protocols.

The project will enhance and make use of existing national and sub - national structures where possible. In line with the National Implementation Modality (NIM), the project implementation will be almost exclusively undertaken by existing government and local authority structures. This approach is believed to be particularly cost-effective as it reduces costs that would need to be spent on consultant - driven implementation, with consultants functioning only to guide implementation at the outset of the project and government staff continuing with the work thereafter. Furthermore, by increasing the capacity of existing agencies to implement ILM interventions, the project will strengthen institutional support and increase the potential for project approaches to be integrated into departmental, ministerial and institutional structures beyond project termination. This will contribute to creating an enabling environment for integrating sustainable landscape management into long - term planning and supporting ongoing and widespread implementation of similar climate - sensitive development. Moreover, the size of the Project Management Unit (PMU) has been carefully considered to keep costs down while still ensuring effective management of the project.

Importantly, the GEFTF - financed project includes technical training for local community members on implementing, maintaining and monitoring project interventions. The training of community members in conjunction with the introduction of a three-tiered monitoring protocol – including national, regional and community level monitoring – will reduce the overall cost of monitoring project activities. This will promote the sustainability of the interventions beyond the lifespan of the project.

The design of the proposed project is based on best practices gathered from rigorous scientific studies and project reviews from other projects in Eritrea. These practices are known to be cost-effective and will ensure that GEFTF finances are used to deliver maximum socio-economic and ecological benefits to local project beneficiaries. For example, reforestation activities and the expansion of forest enclosures under Outputs 2.1.3 and 2.1.4 have been designed to include a combination key indigenous species (including Juniperus procera and Olea europaea subsp.

Africana) and socio-economically important exotic species, in particular, Eucalyptus cladocalyx. The inclusion of the fast-growing eucalyptus provides a source of timber and fuelwood for local communities that are reliant on natural resources, thereby reducing the pressure on indigenous forests and maximising the benefits of project interventions. Similarly, the inclusion of climate-resilient practices such as CSA and sustainable livestock management in the project design is based on the knowledge that such investments have intentional and additional long-term ecological and financial benefits to surrounding areas. Furthermore, CSA practices have proven to be low-input, high-value activities that reduce the vulnerability of local communities to the effects of climate change and land degradation. With regards to the benefits of soil and water conservation interventions, an evaluation by the World Food Programme (WFP) indicates that the financial rate of return for physical soil and water conservation structures is ~30% in drier areas. This, however, does not take into account the off - site benefits of such interventions when implemented in conjunction with forestry measures, which include inter alia: i) increased groundwater recharge; ii) reduced erosion; iii) reduced sedimentation of downstream water bodies; iv) reduced flooding; and v) increased biodiversity. The combination of grey and green infrastructure for water and soil conservation activities will also reduce the cost of project intervention as opposed to pure grey infrastructure. Furthermore, community members involved in similar project interventions have indicated that conservation and forestry measures have had a positive impact on their livelihoods. While some project benefits will be immediately noticeable, other benefits may only be realised years after implementation begins, including watershed restoration, the provision of NTFPs and carbon sequestration. Although these benefits may not be visible in the short-term, the long-term effects thereof will be realised for decades after project implementation.

In summary, the use of an integrate approach to sustainable land management that centres on ecosystem restoration and climate-smart land-use practices will ensure that project interventions are cost-effective and yield multiple environmental, social and economic benefits. This cost-effective strategy will deliver the maximum results with the available resources.

Project management: This project will be managed from the PMU offices to be located in the capital of the Northern Red Sea Zoba, in Massawa, where the office of the Governor of Nakfa is also located. The Northern Red Sea Zoba will provide physical space for the PMU and ensure that the project is fully integrated into the operations of the Zoba Administration. From this location, the PMU will be able to access all areas of the project site and at the same time remain in close proximity to where decision-making is carried out by local authority structures and where government institutions are located.

Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[56] and the GEF policy on public involvement[57].

[56] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

[57] See https://www.thegef.org/gef/policies_guidelines

V. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s):

SDG 1- End poverty in all its forms everywhere
SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all
SDG 13 - Take urgent action to combat climate change and its impacts
SDG 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

This project will contribute to the following country outcome included in the UNDAF/Country Programme Document: *By 2021, environmental and natural resources management is gender responsive, and sustainable, negating the impacts of ecosystem degradation, climate change, and strengthening community resilience to disasters.*

This project will be linked to the following output of the UNDP Strategic Plan:

Output 1.4.1 Solutions scaled up for sustainable management of natural resources, including sustainable commodities and green and inclusive value chains
2.4.1 Gender-responsive legal and regulatory frameworks, policies and institutions strengthened, and solutions adopted, to address conservation, sustainable use and equitable benefit sharing of natural resources, in line with international conventions and national legislation

	Objective and Outcome Indicators	Baseline[58]	Mid-term Target[59]	End of Project Target	Data Collection Methods and Risks/Assumptions[60]
Project Objective: To promote landscape restoration and mainstream sustainable land management, forestry and biodiversity conservation into land-use planning and agricultural production practices in the Rora Habab Plateau, Nafka Sub-Zoba of the Northern Red Sea Region of Eritrea	Indicator 1: (For UNDP SP Output 2.4.1) Gender-responsive legal and regulatory frameworks, policies and institutions strengthened, and solutions adopted, to address conservation, sustainable use and equitable benefit sharing of natural resources, in line with international conventions and national legislation	*Two major proclamations on wildlife and forestry:* • *The forestry and wildlife conservation and development proclamation (2006)* • *The Eritrean environmental protection, management and*	• *Review the forestry and wildlife conservation and development proclamation* • *Draft National Environmental Management Plan to implement Articles 17, 18, 25 and 27 of the 2017*	• Revised forestry and wildlife conservation and development proclamation submitted for approval by the legislature. • Implementation strategy for NEMP finalized and endorsed and under implementation.	*Risks*: Parliamentary processes may delay approval of the revised proclamations and shortage of government staff to inform the process may hinder completion of these tasks. *Assumptions:* The government, through MoLG and MoLWE recognises the importance of revising these proclamations and legal frameworks to facilitate integrated action on the ground and respond to the needs and challenges currently faced by the

[58] Baseline, mid-term and end of project target levels must be expressed in the same neutral unit of analysis as the corresponding indicator. Baseline is the current/original status or condition and need to be quantified. The baseline must be established before the project document is submitted to the GEF for final approval. The baseline values will be used to measure the success of the project through implementation monitoring and evaluation.
[59] Target is the change in the baseline value that will be achieved by the mid-term review and then again by the terminal evaluation.
[60] Data collection methods should outline specific tools used to collect data and additional information as necessary to support monitoring. The PIR cannot be used as a source of verification.

		rehabilitation framework (2017).	*Environmental Protection Framework*		environmental sector, as well as fulfil the government's obligations and priorities under Multilateral Environmental Agreements (UNCDB, UNCCD and UNFCCC) as outlined in the NBSAP, INDC and UNCCD Action Plans and other national strategies and policies.
	Indicator 2: (For UNDP Strategic Plan Output 1.4.1 Solutions scaled up for sustainable management of natural resources, including sustainable commodities and green and inclusive value chains): Area of Nakfa sub-Zoba under integrated landscape management.	*20,455 ha*	*40,000 ha*	80,000 ha	*Risks:* Coordination and relationships between line ministries are not sufficient to provide effective solutions to environmental problems that are complex and multi-sectoral. *Assumptions:* Government officials, technical staff and extension agents will be in regular communication to share knowledge and lessons learned on integrated landscape management. Officials at all administrative levels understand and support the need for ILM
	Indicator 3: # direct project beneficiaries. (disaggregated by gender)	*0*	*10,000 (50/50)*	22,477 *(50/50)* (11,576 males and 10,901 females)	*Risks:* The limited capacity of technical staff and the inaccessibility of some areas of the Rora Habab Plateau may result in not all communities across the project area fully benefitting from project activities. Cultural gender roles may restrict women from benefitting equally from project interventions.

					Assumptions: All households in the project area are committed to participating in project activities and adopting climate-smart practices for agriculture and livestock management. Extension agents and local communities will be willing to adopt a participatory approach and work collaboratively to develop and implement ILM approaches across the Rora Habab Plateau.
	Indicator 4: Number of technical officers, extension officers and resource users trained on ILM.	• Technical officers: 0 • Extension staff: 0 • Resource users: 0	• Technical officers: 40 • Extension staff: 15 • Resource users: 2,500	• Technical officers: 80 • Extension staff: 30 • Resource users: 5,000	*Risks:* Not enough extension staff are hired to adequately serve the entire project area. Households in remote areas do not have access to training workshops. *Assumptions:* All relevant technical staff and extension agents receive training and are willing to adopt a participatory approach to ILM. All households participate in training activities and adopt the ILM practices taught.
Component/Outcome[61] 1 Institutional capacity and enabling framework for integrated landscape management in over	*Indicator 5: Number of land use and restoration plans developed and under implementation.*	*0*	*2*	*5*	*Risks:* Baseline data not sufficient to accurately inform the development of locally appropriate land use and restoration plans.

[61]Outcomes are short to medium term results that the project makes a contribution towards, and that are designed to help achieve the longer-term objective. Achievement of outcomes will be influenced both by project outputs and additional factors that may be outside the direct control of the project.

80,000 ha in the Nakfa sub-Zoba. Outcome 1.1: Support to the review of national level policy and legislative frameworks for integrated landscape restoration. Outcome 1.2: Integrated decision-support tools to support multi-stakeholder participation in landscape and ecosystem restoration planning, implementation and monitoring. Outcome 1.3: Capacity of institutions and resource-user groups strengthened to integrate climate-smart approaches into landscape restoration and agricultural production practices					*Assumptions*: The government, through the relevant line ministries, recognises the importance of developing and implementing land use and restoration plans to facilitate integrated action on the ground and respond to the needs and challenges currently faced by the environmental sector, as well as fulfil the government's obligations and priorities under Multilateral Environmental Agreements (UNCDB, UNCCD and UNFCCC) as outlined in the NBSAP, INDC and UNCCD Action Plans and other national strategies and policies.
	Indicator 6: Increase in capacity of institutions to provide and adopt climate-smart advice on SLM approaches (measured as per UNDP capacity scorecard).	*15-20%*	*30%*	*40%*	*Risks:* Insufficient understanding of locally appropriate climate-smart SLM approaches. Lack of adaptive management to adopt lessons learned during project implementation. *Assumptions:* Trainees leave training with increased capacity. Staff will apply the knowledge learned on climate-smart land use practices in SLM approaches.
	Indicator 7: Technical guidelines for the conservation of biodiversity with	*0*	*2*	*5*	*Risks:*

	a focus on vulnerable and threatened species • *East African Juniper* • *African Wild Olive* • *Nubian Ibex* • *Tragelaphus strepsiceros (greater kudu)* *Phacochoerus africanus (warthog).*				Security risks during on the ground baseline surveys of biodiversity. These risks may restrict access for consultants of government staff to certain areas. Security concerns may also prevent aerial surveys. Consultants may not have adequate knowledge of the habitat requirements of the target species in Eritrea. Local communities may not support conservation plans that restrict access to potential agricultural land. *Assumptions:* Knowledge learned during baseline assessments of biodiversity are indicative of future needs for the conservation and protection of biodiversity.
Component/ Outcome 2 Implementation of on-the-ground interventions to reduce land degradation and pressure on forests and increase agricultural productivity Outcome 2.1.: Enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares	*Indicator 8: Number of hectares of degraded agricultural landscapes under SLM*	*2,576 ha*	*8,000*	*17,000 ha*	*Risks:* Farmers may not be willing to stop using traditional farming practices in favour of new, CSA practices. Particularly amongst communities with limited awareness of the potential threats of climate change. Farmers may not understand the long-term benefits of SLM practices such as agroforestry. *Assumptions:* Extension agents and local communities will be willing to adopt a participatory approach and work collaboratively to develop

					and implement SLM approaches in agricultural landscapes. Climate-smart approaches to agriculture and livestock management lead to improved productivity in agricultural landscapes.
	Indicator 9: Number of hectares under integrated watershed management.	*161 ha*	*30,000ha*	*60,000 ha*	*Risks:* Local communities may not understand the long-term benefits of IWM and not be willing to adopt the necessary land use practices. *Assumptions:* Extension agents and local communities will be willing to adopt a participatory approach and work collaboratively to develop and implement integrated watershed management plans.
	Indicator 10: Number of hectares under community-managed forest plantation and enclosures	*160 ha* *(confirmed at PPG phase to be less than initially thought – 8,900ha)*	*8,500 ha*	*17,500 ha* *(to be confirmed during inception phase)*	*Risks:* Community members may harvest forest resources unsustainably, preventing restoration of forest ecosystems. Livestock are not properly excluded from forest enclosures. Planted seedlings may not survive. *Assumptions:* There is willingness to increase the area under permanent enclosure, but this will require an extensive process of community consultation and negotiation,

					and so this process will occur at the inception of the project. By-laws governing the use of forest resources within enclosures are adhered to. Planting activities and assisted natural regeneration leads to the restoration of forest ecosystems
Component/ Outcome 3 Knowledge management and awareness raising. Outcome 3.1 Increased knowledge sharing and awareness at zoba, sub-zoba, Kebabi and community level on integrated landscape management, including SLM, SFM, biodiversity conservation and water resource management.	*Indicator 11: Number of people reached through public awareness campaigns (disaggregated by gender)*	*0*	*20,000 (50/50)*	~50,000 *(50/50)*	*Risks:* People in remote areas may not have access to awareness raising events. Lack of coordination between administrative institutions at various levels may impede the dissemination of knowledge on ILM. Insufficient monitoring of project activities and collation of lessons learned may restrict learning from project activities. *Assumptions:* Involvement in the design and implementation of the project interventions and ongoing communication on the expected benefits of integrated landscape management will result in long-term support for the project and its interventions from local communities.

VI. MONITORING AND EVALUATION (M&E) PLAN

The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. Supported by Component/OutcomeThree: Knowledge Management and M&E, the project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of project results.

Project-level monitoring and evaluation will be undertaken in compliance withUNDP requirements as outlined in theUNDP POPPand UNDP Evaluation Policy. The UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additionalmandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the GEF M&E policy and other relevant GEF policies[62].

In addition to thesemandatory UNDP and GEF M&E requirements, otherM&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring.The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country. This could be achieved for example by using one national institute to complete the GEF Tracking Tools for all GEF-financed projects in the country, including projects supported by other GEF Agencies.[63]

M&E Oversight and monitoring responsibilities:
Project Manager: The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

The Project Manager will develop annual work plans based on the multi-year workplan included in Annex, including annual output targets to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. ESMP, gender action plan, stakeholder engagement plan etc..) occur on a regular basis.

Project Board: The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the

[62] See https://www.thegef.org/gef/policies_guidelines
[63] See https://www.thegef.org/gef/gef_agencies

project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

Project Implementing Partner: The Implementing Partner is responsible for providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, andis aligned with national systems so that the data used and generated by the project supports national systems.

UNDP Country Office: The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the *independent mid-term review* and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP.This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

UNDP-GEF Unit: Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.[64]

Additional GEF monitoring and reporting requirements:

Inception Workshop and Report: A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:
a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;

[64] See guidance here: https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx

b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;
e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; SESP, Environmental and Social Management Plan and other safeguard requirements; project grievance mechanisms; the gender strategy; the knowledge management strategy, and other relevant strategies;
f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
g) Plan and schedule Project Board meetings and finalize the first-year annual work plan.

The Project Manager will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser and will be approved by the Project Board.

GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projectsof similar focus in the same country, region and globally.

GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefits: *BD Program 9 Tracking Tool, Sustainable Forest Management (SFM) Tracking Tool, Land Degradation Tracking Tool and Climate Change Mitigation Tracking Tool as agreed with the UNDP-GEF Regional Technical Advisor.* The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted as Annex to this project document – will be updated by the Project Manager/Team (not the evaluation consultants hired to undertake the *MTR* or the TE)) and shared with *the mid-term review consultants* and terminal evaluation consultants before the required *review/*evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed *Mid-term Review report* and Terminal Evaluation reports.

Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC).As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser and approved by the Project Board.

Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities.The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center.As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser and will be approved by the Project Board. The TE report will be publicly available in English on the UNDP ERC.

The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

Final Report: The project's terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Mandatory GEF M&E Requirements and M&E Budget:

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget[1] (US$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office MLWE	$11,000	$5,000	Within two months of project document signature
Inception Report	Project Manager / PMU	None	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office MLWE	None	None	Quarterly, annually
Risk management	Project Manager/ PMU UNDP Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework (MoLG, MoLWE)	Project Manager /PMU MLWE	Per year: $2,857 ($2,857x 7yrs= $20,000	None	Annually before PIR
GEF Project Implementation Report (PIR)	Project Manager/ PMU and UNDP Country Office and UNDP-GEF team MLWE	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	Per year: $3,333.3 ($3,333.3 x 6 yrs = 20,000)	None	Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	Project Manager/ PMU MLWE	None	Per Year: $2,143 ($2,143 x7 yrs = $15,000)	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager / PMU UNDP Country Office	None	Per Year: $3,571 ($3,571 x 7yrs = $25,000)	On-going
Stakeholder Engagement Plan	Project Manager/ PMU	None	Per Year: $10,714	On-going

[1] Excluding project team staff time and UNDP staff time and travel expenses.

- Promote and maintain focus on the expected project output(s) from the point of view of supplier management;
- Ensure that the supplier resources required for the project are made available;
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts.

Senior Beneficiary: The Senior Beneficiary is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary role is held by a representative of the government or civil society. The Senior Beneficiary is: Northern Red Sea Zoba and communities in the Rora Habab Plateau.

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness, the role should not be split between too many people.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Project Board.

Specific responsibilities include:

- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Plan the activities of the project and monitor progress against the project results framework and the approved annual workplan;
- Mobilize personnel, goods and services, training and micro-capital grants to initiative activities, including drafting terms of reference and work specifications, and overseeing all contractors' work;

- Monitor events as determined in the project monitoring schedule plan/timetable, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments or reimbursement using the fund authorization and certificate of expenditures;
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports;
- Be responsible for preparing and submitting financial reports to UNDP on a quarterly basis;
- Manage and monitor the project risks initially identified and submit new risks to the project board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log;
- Capture lessons learned during project implementation;
- Prepare the annual workplan for the following year; and update the Atlas Project Management module if external access is made available.
- Prepare the GEF PIR and submit the final report to the Project Board;
- Based on the GEF PIR and the Project Board review, prepare the AWP for the following year.
- Ensure the mid-term review process is undertaken as per the UNDP guidance, and submit the final MTR report to the Project Board.
- Identify follow-on actions and submit them for consideration to the Project Board;
- Ensure the terminal evaluation process is undertaken as per the UNDP guidance, and submit the final TE report to the Project Board;

Project Assurance: UNDP provides a three – tier supervision, oversight and quality assurance role – funded by the GEF agency fee – involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance must be totally independent of the Project Management function. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role is covered by the GEF Agency.

Governance role for project target groups: Communities, farmers and land user groups will be engaged in decision-making through consultative local-level processes that directly involve these stakeholders through forums and multi-stakeholder platforms organised around specific project interventions, e.g. watershed management. Where representation is already organised, e.g. through the National Union of Eritrean Women (NUEW) or farmers' associations these will form the default entry point for consulting community members and disseminating information back to them. The project plans to further strengthen community-based institutions/groups to facilitate meaningful participation and beneficiation from project interventions/activities.

VIII. FINANCIAL PLANNING AND MANAGEMENT

The total cost of the project is USD31,760,607. This is financed through a GEF grant of USD8,260,607, USD2,500,000 in cash co-financing to be administered by UNDP and USD 21,000,*000* in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

Parallel co-financing: The actual realization of project co-financing will be monitored during the *mid-term review* and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs	Risks	Risk Mitigation Measures
(e.g. government)	*In kind*		*(e.g. office space, infrastructure development etc...)*	*To co-financing being realized*	
UNDP	Cash	2,500,000	The bulk of the UNDP resources ($1,000,000) will be allocated to Component 2 - *Implementation of on-the-ground interventions to reduce land degradation and pressure on forests and increase agricultural productivity*, specifically to procure energy efficient cook-stoves in order to reduce the pressure on forest resources. $400,000 will be allocated to Component 1 to support government with the review of policy and legal frameworks for NRM. Some of the resources ($460,000) will be allocated to Component 3 - *Knowledge management and awareness raising* to complement the GEF resources towards the generation, management and sharing of INRM best practices and approaches. The remaining resources	Delays in implementation of project activities and low absorptive capacity of the IP, resulting in low use of the resources.	UNDP will ensure that project workplanning processes are closely supported to ensure optimal use of project resources.

			($640,000) will be allocated to PMU.		
Government	Grants Cash	16,000,000 5,000,000	The government's co-finance will support the hosting of PMU in the project site. The government, through the various central and local level institutional structures, will also avail staff to provide technical expertise and logistical support to the implementation of the project interventions across all the components.	Continued lack of human resources to support project implementation. Possible limitations in fullfiling the financing plans due to financial constraits in government during project implementation.	The cash support provided by UNDP under PMU will be availed to government to recruit new project staff that can be directly attached to the project, including at the project site levels.

UNDP Direct Project Services as requested by Government (if any): No request has been received from government for support with any services, therefore no DPC will be charged to the GEF project grant.

Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team to ensure accurate reporting to the GEF: a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.
Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.[65] On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

[65] see https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx

Transfer or disposal of assets: In consultation with the NIM Implementing Partner and other parties of the project, UNDP programme manager (UNDP Resident Representative) is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file[66].

Financial completion: The project will be financially closed when the following conditions have been met:a) The project is operationally completed or has been cancelled; b) The Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project;d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

[66] See https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default.

IX. TOTAL BUDGET AND WORK PLAN

Atlas Proposal of Award ID:	00111039	**Atlas Primary Output Project ID:**	00110190
Atlas Proposal or Award Title:	Restoring Degraded Forest Landscapes and Promoting Community based, Sustainable and Integrated Natural Resource Management in the Rora Habab Plateau, Nakfa Sub-Zoba, Northern Red Sea Region of Eritrea		
Atlas Business Unit:	ERI10		
Atlas Primary Output Project Title:	Restoring Degraded Forest Landscapes and Promoting Community base, Sustainable and Integrated Natural Resource Management in the Rora Habab Plateau, Nakfa Sub-Zoba, Northern Red Sea Region of Eritrea		
UNDP-GEF PIMS no.:	5519		
Implementing Partner:	MoLG		

Component	Responsible Party	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Amount Year 7 (USD)	Total (USD)	See Budget Note:
Component 1. Institutional capasity and enabling framework for integrated landscape management in over 80, 000 ha in the Nakfa sub-Zoba.	MoLG	62000	GEF TF	71300	Local Consultants	6,000	41,000	23,200	10,600	5,600	5,600	2,000	**94,000**	1
				71600	Travel	3,000	13,000	65,000	56,500	53,500	46,000	19,000	**256,000**	2
				72100	Contractual Services - Company	0	164,000	200,000	90,000	12,000	10,000	10,000	**486,000**	3
				72300	Materials and Goods	0	0	65,000	41,000	36,000	31,000	20,000	**193,000**	4
				75700	Training and Workshops	3,000	172,000	308,000	187,500	86,500	82,000	44,000	**883,000**	5
				74200	Audio Visual&Print Prod Costs	2,000	27,000	8,500	15,500	8,000	7,000	0	**68,000**	6
				Sub-total Outcome 1 (GEF)		**14,000**	**417,000**	**669,700**	**401,100**	**201,600**	**181,600**	**95,000**	**1,980,000**	
		04000	UNDP	71600	Travel	2,000	2,000	15,000	4,000	4,000	3,000	10,000	**40,000**	7
				72300	Materials and Goods		20,000	30,000	40,000	40,000	35,000	35,000	**200,000**	8
				Sub-total Outcome 1 (UNDP)		**2,000**	**22,000**	**45,000**	**44,000**	**44,000**	**38,000**	**45,000**	**240,000**	
				Sub-total Outcome 1		**16,000**	**439,000**	**714,700**	**445,100**	**245,600**	**219,600**	**140,000**	**2,220,000**	
Component 2: Implementation of on-the-ground interventions to reduce land degradation and pressure on forests	MoLG	62000	GEF TF	71300	Local Consultants	0	4,500	19,000	9,000	6,500	1,000	1,000	**41,000**	9
				72100	Contractual Services - Company	0	150,000	200,000	70,000	35,000	25,000	0	**480,000**	10
				74200	Audio Visual&Print Prod Costs	0	0	4,100	1,100	1,100	0	0	**6,300**	11
				75700	Training and Workshops	0	30,000	239,000	180,000	183,000	20,000	10,000	**662,000**	12
				71600	Travel	0	10,000	93,000	85,000	68,000	62,000	30,000	**348,000**	13
				72305	Materials and Goods	0	300,000	830,000	620,000	515,000	455,000	152,000	**2,872,000**	14
				71800	Contractual Services - Individual	0	29,700	279,700	279,700	229,700	229,700	129,700	**1,178,200**	15

Component	Responsible Party	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Amount Year 7 (USD)	Total (USD)	See Budget Note:
and increase agricultural productivity.				**Sub-total Outcome 2 (GEF)**		**0**	**524,200**	**1,664,800**	**1,244,800**	**1,038,300**	**792,700**	**322,700**	**5,587,500**	
		04000	UNDP	71800	Contractual Services - Individual	29,900	39,900	39,900	39,900	39,900	39,900	39,900	269,300	16
				72100	Contractual Services - Company	0	0	45,000	45,000	35,000	35,000	30,000	190,000	17
				72300	Materials and Goods	0	0	200,000	200,000	150,000	150,000	110,000	810,000	18
				Sub-total Outcome 2 (UNDP)		**29,900**	**39,900**	**284,900**	**284,900**	**224,900**	**224,900**	**179,900**	**1,269,300**	
				Sub-total Outcome 2		**29,900**	**564,100**	**1,949,700**	**1,529,700**	**1,263,200**	**1,017,600**	**502,600**	**6,856,800**	
Component 3: Knowledge management and awareness raising	MoLG	62000	GEF TF	71200	International Consultants	0	0	0	35,000	0	0	40,000	75,000	19
				71300	Local Consultants	1,000	3,500	3,500	13,500	3,500	7,500	10,500	43,000	20
				71600	Travel	1,000	2,500	2,500	2,500	2,500	4,500	1,500	17,000	21
				72100	Contractual Services - Company	0	0	10,000	25,000	15,000	5,000	3,000	58,000	22
				72800	Information Technology Equipment	0	0	0	10,000	0	0	0	10,000	23
				75700	Training and Workshops	11,000	0	0	0	0	20,000	12,000	43,000	24
				74200	Audio Visual&Print Prod Costs	0	0	20,000	20,000	15,000	3,000	2,000	60,000	25
				Sub-total Outcome 3 (GEF)		**13,000**	**6,000**	**36,000**	**106,000**	**36,000**	**40,000**	**69,000**	**306,000**	
		04000	UNDP	71300	Local Consultants	7,800	7,800	17,300	12,300	12,300	12,300	11,300	81,100	26
				72100	Contractual Services - Company	0	0	25,000	2,000	2,000	12,000	35,000	76,000	27
				74200	Audio Visual&Print Prod Costs	0	2,000	16,900	14,000	12,000	14,000	22,000	80,900	28
				75700	Training and Workshops	5,000	10,000	60,000	25,000	31,450	22,000	20,000	173,450	29
				Sub-total Outcome 3 (UNDP)		**12,800**	**19,800**	**119,200**	**53,300**	**57,750**	**60,300**	**88,300**	**411,450**	
				Sub-total Outcome 3		**25,800**	**25,800**	**155,200**	**159,300**	**93,750**	**100,300**	**157,300**	**717,450**	
Project Management	MoLG	62000	GEF TF	71400	Contractual Services - Individual	25,800	25,800	25,800	25,800	25,800	25,800	25,800	180,600	30
				72200	Equipment and Furniture	0	60,000	20,000	2,000	1,000	1,000	1,000	85,000	31

Component	Responsible Party	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Year 6 (USD)	Amount Year 7 (USD)	Total (USD)	See Budget Note:
				74200	Audio Visual&Print Prod Costs	0	7,000	6,000	2,000	1,700	1,000	0	17,700	32
				72500	Office Supplies	3,000	4,000	5,000	5,000	4,000	2,000	2,000	25,000	33
				74100	Professional Services	0	3,334	3,334	3,333	3,333	3,333	3,333	20,000	34
				75700	Training and Workshops	4,807	8,500	12,500	13,500	8,500	6,500	4,500	58,807	35
				Sub-total PMU (GEF)		**33,607**	**108,634**	**72,634**	**51,633**	**44,333**	**39,633**	**36,633**	**387,107**	
		04000	UNDP	71400	Contractual Services - Individual	6,000	6,000	6,000	6,000	6,000	6,000	6,000	42,000	36
				75700	Training and Workshops	16,750	15,000	20,000	20,000	20,000	20,000	15,000	126,750	37
				72800	Information Technology Equipment	10,000		250		250		250	10,750	38
				72200	Equipment and Furniture	55,000							55,000	39
				72400	Communic & Audio Visual Equip	18,000	18,000	18,000	18,000	18,000	18,000	18,000	126,000	40
				73100	Rental & Maintenance-Premises	12,500	12,500	12,500	12,500	12,500	12,500	12,500	87,500	41
				72300	Materials & Goods	18,000	18,000	18,000	18,000	18,000	18,000	18,000	126,000	42
				74500	Miscellaneous Expenses	500	750	750	1,000	750	500	1,000	5,250	43
				Sub-total PMU (UNDP)		**136,750**	**70,250**	**75,500**	**75,500**	**75,500**	**75,000**	**70,750**	**579,250**	
				Sub-total PMU		**170,357**	**179,550**	**148,800**	**127,800**	**120,500**	**115,300**	**104,050**	**966,357**	
TOTAL - GEF TF						**60,607**	**1,055,834**	**2,443,134**	**1,803,533**	**1,320,233**	**1,053,933**	**523,333**	**8,260,607**	
TOTAL - UNDP						**181,450**	**151,950**	**524,600**	**457,700**	**402,150**	**398,200**	**383,950**	**2,500,000**	
GRAND TOTAL						**242,057**	**1,207,784**	**2,967,734**	**2,261,233**	**1,722,383**	**1,452,133**	**907,283**	**10,760,607**	

Summary of funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Amount Year 6	Amount Year 7	Total
GEF	60,607	1,055,834	2,443,134	1,803,533	1,320,233	1,053,933	523,333	8,260,607
Donor 2 (UNDP	181,450	151,950	524,600	457,700	402,150	398,200	383,950	2,500,000
Donor 3 (in-kind) Government	500,000	1,000,000	4,500,000	4,500,000	4,500,000	4,500,000	1,500,000	21,000,000
TOTAL	742,057	2,207,784	7,467,734	6,761,233	6,222,383	5,952,133	2,407,283	31,760,607

Budgets Notes:

Budget Notes No.	Explanation
1	*Local Consultants:* This budget will be used to hire the services of national consultants in line with Outputs 1.1.1, 1.1.2 and 1.1.3. In particular, a Policy and Legal Framework Specialist will be hired to review existing legislative frameworks and other activities needed to develop two strategies for the: i) protection and conservation of flora and fauna species; and ii) protection and restoration of forest ecosystems, as per Output 1.1.1. Under Output 1.1.2, a Landscape Management Specialist will be hired to develop an integrated landscape management plan for the Rora Habab Plateau, including detailed subplans focusing on watersheds, forestry, wildlife, rangelands and agricultural systems. To support Output 1.1.3, a Capacity Development Specialist will be hired to undertake a general capacity and resource needs assessment of MoLG, MoLWE, MoA, and the relevant administrations at the national and Zoba level to identify training and technical support needs for ILM. Based on this assessment, the specialist will develop short- medium- and long-term training and capacity development programmes for government staff at the national, Zoba and sub-Zoba levels. **The total budget for this item is US$35,000.**
	Local Consultants: This budget will be used to hire the services of national consultants in line with Outputs 1.2.1, 12.2 1.2.3 and 1.2.4. In particular, a Biodiversity Specialist we bee hired to oversee the baseline assessments of fauna and flora across the Nakfa sub-Zoba. A Policy and Legal Framework Specialist will be hired to review existing by-laws and other local customs on the use, protection and conservation of key species, as per Output 1.2.2. He/she will also be responsible for developing a strategy to include biodiversity conservation into local by-laws. To support Output 1.2.3, a Capacity Development Specialist will be hired to undertake a general capacity and resource needs assessment of national government, technical staff and local communities to identify training and technical support needs for the implementation of the three-tiered monitoring plan. Under Output 1.2.4, an MRV Specialist will be hired to oversee a baseline assessment of the Rora Habab landscape and the design of an MRV protocol for the area. They will then provide technical support for the design and implementation of training programmes for MRV at the national, local and community levels. **The total budget for this item is US$34,000.**

Budget Notes No.	Explanation
	Local Consultants: This budget will be used to hire the services of a national consultant in line with Outputs 1.3.1, and 1.3.3. This will include a Capacity Development Specialist to oversea the needs assessment for CSA training and to head the development of the resulting report. This consultant will coordinate with the company or organisation hired under Budget Note 13 to conduct a stocktaking exercise to identify existing training materials on CSA in the Northern Red Sea Region of Eritrea and assess the types of training required to integrate CSA into agricultural practices in the project area. An Extension Services Specialist will be hired to review and update the extension services package to include aspects that are not covered within the current portfolio and pilot the revised extension services package in Nakfa sub-Zoba (Output 1.3.1). The consultant will then oversea the training of extension agents based on the revised extension services package. **Under Output 1.3.3, a Land Management Specialist will be hired to develop a strategy to reduce degradation and improve productivity in agricultural landscapes. The total budget for this item is US$25,000.**
	The total sum of this item in this component is $94,000
2	*Travel*: This budget will be used to support all travel related to the implementation of activities under Outcome 1.1. **The total budget for this item is US$84,000 over the 7 years of project implementation.**
	Travel: This budget will be used to support all travel related to the implementation of activities under Outcome 1.2. **The total budget for this item is US$116,000 over the 7 years of project implementation.**
	Travel: This budget will be used to support all travel related to the implementation of activities under Outcome 1.3. **The total budget for this item is US$56,000 over the 7 years of project implementation.**
	The total sum of this item in this componnet is $256,000
3	*Contractual Services - Company*: To support work under Output 1.1.1, this budget will be used to secure the services of a local company or capable community organisation to provide training and capacity building to technical staff. This company will work with MoLG and MoLWE to develop and implement training programmes on INRM. The Budget for this item is US$154,000. In support of Output 1.1.3, a further US$20,000 will be used to hire the services of a company or institution to identify resource user groups and conduct a stakeholder analysis for target communities. This will include mapping of communities to identify appropriate locations for on-the-ground restoration and climate0smart agriculture (CSA) activities. **The total budget for this item is US$174,000.**
	Contractual Services - Company: To support work under Output 1.2.1, US$40,000 of this budget will be used to secure the services of a local company or capable community organisation to undertake baseline assessments of fauna and flora in the Rora Habab Plateau. A further US$25,000 will be used to hire an aerial survey team to support ground-level assessments of fauna across the plateau. Under Output 1.2.2, a company will be hired to develop enforecement protocols for local by-laws dealing with land use-planning and species conservation. This company will engage with local authorities, community organisations and national government through a series of workshops to develop an enforcement protocol that is suited to the cultural and legal frameworks of the country. In support of Output 1.2.3, a company or capable community organisation will be hired to develop the three-tired monitoring system for landscape restoration and ecosystem integrity. This company will then design and implement a training programme to build the

Budget Notes No.	Explanation
	capacity of national government, local technical staff and community resource users to implement the monitoring system in Eritrea. **The total budget for this item is US$175,000.**
	Contractual Services - Company: US$20,000 of this budget will be used to secure the services of a local company or capable community organisation to work with the Capacity Development Specialist (Budget Note 12) to conduct the needs assessment for CSA training. A further US$10,000 will used to hire a company of community organisation to assist the Extension Services Specialist to develop a training programme for extension agents under Output 1.3.1. In support of Output 1.3.2, a company or capable community organisation will be hired to Identify locally appropriate climate-smart practices for agriculture and livestock management. This contract will extend over three years to allow an adaptive approach that will incorporate stakeholder feedback into the recommendations. The final US$62,000 will be used to hire a company to work with communities to establish demonstration plots for CSA practices identified under Output 1.3.2. The plots will form part of the training programme to build the capacity of farmers to integrate climate-smart practices into agriculture and livestock management. **The total budget for this item is US$137,000.**
	The total sum of this item in this componnet is $486,000
4	*Materials and Goods:* This budget will be used to provide monitoring equipment to national and region staff, as well as local community monitors to support the effective implementation of monitoring and MRV protocols developed under Outputs 1.2.2, 1.2.3 and 1.2.4. **The total budget for this item is US$98,000.**
	Materials and Goods: This budget will be used to purchase materials needed to establish demonstration plots in agricultural landscapes across the project area under Outputs 1.3.2. These plots will showcase locally appropriate CSA technologies/practices and will be used during training programmes for the implementation of CSA. **The total budget for this item is US$95,000.**
	The total sum of this item in this componnet is $193,000
5	*Training and Workshops:* This allocation will support training workshops based on the programmes developed under Budget Note 2. Technical staff and extension agents will be trained throughout the project implementation period on INRM, including the application of best practices and lessons learned during project implementation. This will form part of an adaptive management approach to integrated landscape management in the project area. **The total budget for this item is US$180,000 over 7 years of project implementation.**
	Training and Workshops: To support the review of local by-laws under Output 1.2.2, a series of community workshops will be held to enage with relevent stakeholders and ensure community support for project interventions. Similar workshops will be help as part of the baseline assessment of the landscape and the design of an MRV protocol for the Rora Habab Plateau under Output 1.2.4. Extensive training workshops will then be organised at the national, regional and community levels to build the capacity of national government, local technical staff, forestry officers and community resource users to implement ecosystem monitoring and MRV protocols across the project area. **The total budget for this item is US$433,000 over 7 years of project implementation.**

Budget Notes No.	Explanation
	Training and Workshops: To support the capacity needs assessment under Output 1.3.1, a series of community workshops will be held to enage with relevent stakeholders. During the workshops, existing training materials will be reviewed and communities members will be given the opportunity to comment on the effectiveness of current practices. Similar workshops will be help as part of the baseline assessment of degradation of agricultural landscapes in the Rora Habab Plateau under Output 1.3.3. The budget for these community engagement workshops is US$50,000. Extensive training workshops will be run throughout the project implementation period to build the capacity of extension agents to engage with farmers and transfer knowledge on CSA practices. These training workshops will integrate the revised extension packages, supporting the transition to CSA. A budget of US$110,000 is budgeted for these activities. A further US$110,000 is budgeted to support community training workshops to build the capacity of local farmers to integrate CSA into their land-use practices. Under the guidance of the company or organisation hired to design the training programmes, these workshops will combine pratical demonstartions with theoretical learning on climate-smart practices for agriculture and livestock management. **The total budget for this item is US$270,000 over 7 years of project implementation.**
	The total sum of this item in this componnet is $883,000
6	*Publications:* This budget will support the production and dissemination of technical publications on topics related to the: i) policy review strategies; ii) training workshops; iii) integrated management plan; iv) stakeholder mapping; and v) capacity assessments and development programmes. **The total budget for this item is US$27,000.**
	Publications: This budget will support the production and dissemination of technical publications on topics related to the: i) baseline assessment of fauna and flora; ii) review of local by-laws; iii) monitoring system; and iv) community training workshops. **The total budget for this item is US$24,000.**
	Publications: This budget will support the production and dissemination of technical publications on topics related to the: i) review and update of extension services; ii) identification of locally appropriate CSA interventions; and iii) development of a strategy to reduce degradation of agricultural landscapes. **The total budget for this item is US$17,000.**
	The total sum of this item in this componnet is $68,000
7	Travel: This is UNDPs contrution to this activity. The budget will be used to support all travel related to the implementation of activities under Outcome 1.2. **The total budget for this item is US$40,000 over the 7 years of project implementation.**
8	*Materials and Goods*: This is UNDP's contribution to support this activitity. The budget will be used to purchase materials needed to establish demonstration plots in agricultural landscapes across the project area under Outputs 1.3.2. These plots will showcase locally appropriate CSA technologies/practices and will be used during training programmes for the implementation of CSA. **The total budget for this item is US$200,000.**
9	*Local Consultants:* This budget will be used to hire the services of national consultants in line with Outputs 2.1.1, 2.1.2, 2.1.3 and 2.1.4. This includes a Hydrology Specialist who will oversee the hydrological analysis of potential locations for the implementation of integrated water management, soil and water conservation measures, including watershed restoration to capture water and increase the functioning of existing ponds and wadis. This consultant will work with the contracted company and will be responsible for ensuring the quality of all reports under this Output. A Landscape Management Specialist will be hired to develop community-level livestock and rangeland management systems to reduce

Budget Notes No.	Explanation
	overgrazing and improve productivity of rangelands. They will also oversee activities for the promotion of sustainable water and tree management. A Livelihoods Specialist will be hired to provide technical support and training for the expansion of value chains for existing livelihood strategies and on the processing and packaging of produce to improve market value. **The total budget for this item is US$41,000.**
10	*Contractual Services - Company:* This budget will be used to secure the services of local companies to support activities under Outputs 2.1.1, 2.1.3 and 2.1.5. A company specialising in hydrological analysis will be hired to work with the Hydrology Specialist to analyse potential location for the implmentation of IWM and to establish water conservation infrastructure for the control and harvesting of rain and flood water. A construction company will be hired to assist in the establishment of tree nurseries in the project area, including the setup of nursery beds and irrigation systems. Finally, a marketing company will be hired to conduct a market survey to guide the devlopment of local and regional markets. **The total budget for this item is US$480,000.**
11	*Publications:* This budget will support the production and dissemination of technical publications on topics related to the: i) community training on processing and packaging; and ii) market survey. **The total budget for this item is US$6,300.**
12	*Training and Workshops*: Budget has been allocated for a series of workshops and training events in line with Outputs 2.1.2 ,2.1.3, 2.1.4 and 2.1.5. A stakeholder participation workshop will be held to assist in the development of community-level livestock and rangeland management systems. This will help ensure community support for the project intervention. Further training and awareness workshops will then be held to within communities to promote sustainable livestock water management practices and to train community member on the sustainable use and management of woodlots and trees. Finally, Workshops will be held within each community to train community members on processing and packaging of products from existing livelihood activities to increase market value. **The total budget for this item is US$662,000.**
13	*Travel:* This budget will be used to support all travel related to the implementation of activities under Outcome 3.1. This includes US$300,000 for the transport of seedlings from nurseries to plantation sites. **The total budget for this item is US$348,000 over the 7 years of project implementation.**
14	*Materials and Goods:* US$800,000 of this budget will be used to purchase materials to establish both grey and green water conservation infrastructure for the control and harvesting of rain and flood water. These materials will be used by the company/organisation hired under Budget Note 19. A further US$800,000 will be used to purchase materials to aide in the management of livestock to reduce overgrazing and promote sustainable livestock water management. This includes the purchase of fencing materials to control livestock movements and materials to build water infrastructure for livestock. In line with Output 2.1.3, materials will be procured for the establishment and maintanence of three tree nurseries in the project area, with a budget of US$1,050,000. This includes building and irrigation materials for the initial establishment of the nurseries and ongoing supply of inputs to maintain the production of tree seedlings. Additional budget of US$42,000 will also be made available for the purchase of equipment for plantation activities. A final US$180,000 is budgeted to provide processing equipement to support the expanding of value chains for existing livelihood strategies. **The total budget for this item is US$2,872,000.**

Budget Notes No.	Explanation
15	*Contractual Services - Individuals:* This budget will be used to hire project staff under Outputs 2.1.3 and 2.1.4. To assist in the establishment and operation of three tree nurseries, US$178,200 is budgeted for hiring nursery managers @ US$250 per month and nursery staff at US$115 per month. A single nursery manager and five nursery staff will be hired for each nursery. A further US$1,000,000 is budgeted for the recruitment of individuals to undertake planting activities. These will be seasonal contracts and will include general labour and management staff. **The total budget for this item is US$1,178,200**
16	*Contractual Services - Individuals:* This is UNDP's contribution for this activity. The budget will be used to hire project staff under Outputs 2.1.3 and 2.1.4. To assist in the establishment and operation of the 4th tree nursery, US$69,300 is budgeted for hiring nursery manager @ US$250 per month and 5 nursery staff at US$115 per month. A further US$200,000 is budgeted for the recruitment of individuals to undertake planting activities. These will be seasonal contracts and will include general labour and management staff. **The total budget for this item is US$269,300**
17	*Contractual Services - Company:* This is UNDP's contribution for this activity. The budget will be used to secure the services of a local company to distribute and install energy-efficient cookstoves. **The total budget for this item is US$190,000.**
18	*Materials and Goods:* This is UNDP's contribution for this activity. This budget will be used to purchase energy-efficient cookstoves for rural communities in the project area. **The total budget for this item is US$810,000.**
19	*International Consultant*: This budget will be used to hire an independent international consultant to perform the Mid-term Review (MTR) and Terminal Evaluation (TE). **The total budget for this item is US$75,000.**
20	*Local Consultants:* This budget will be used to hire a Communications Specialist to work with a data management company to establish a best practices database. The consultant will also be responsible for developing and implementing a strategy for scaling up and replicating project activities. **The total budget for this item is US$13,000**
	Local Consultants: This budget will be used to hire local consultants to monitor indicators in the project results framework and update the mid-term and terminal GEF Tracking Tools. **The total budget for this item is US$30,000.**
	The total sum of this item in this componnet is $43,000.
21	*Travel*: This budget will be used to support all travel related to the implementation of activities under Outcome 3.1. **The total budget for this item is US$17,000.**
22	*Contractual Services - Company:* As part of Output 3.1.1, US$30,000 of this budget will be used to hire a company to design audio and visual awareness campaigns to inform communities on the effects of climate change and the benefits of appropriate integrated landscape management interventions. The remaining US$28,000 will be used to secure the services of a data management company to establish a good practice database that includes information on traditional and project activities. **The total budget for this item is US$58,000.**
23	*Information Technology Equipment:* This budget will be used to purchase database equipment to host an online platform for knowledge management, in particular for sharing good practices and lessons learnt from project activities. **The total budget for this item is US$10,000.**
24	*Training and Workshops*: In support of Output 3.1.3, this budget will be used to organise stakeholder engagement workshops to assess ways to upscale project interventions and to create networks between stakeholders to faciliate future knowledge sharing. **The total budget for this item is US$32,000.**

Budget Notes No.	Explanation
	Training and Workshops: This allocation is for hosting an inception workshop. **The total budget for this item is US$11,000.**
	The total sum of this item in this componnet is $43,000.
25	*Publications:* US$17,000 is budgeted to support the production and dissemination of technical publications on topics related to the: i) public awareness campaign and ii) scaling up and replicating of project activities. Audio visual and print production: In support of the public awareness campaign through local media, this budget USD$43,000 will be used to produce audio segments to be aired on local radio stations. These segments will be designed by a design company (Budget Note 28) and will focus on informing the public of the effects of climate change and the benfits of appropriate landscape management interventions. **Total budget for this item is US$60,000.**
26	*Local Consultants:* This is UNDP's contribution to this activity. The budget will be used to hire local consultants in line with Outputs 3.1.1, 3.1.2 and 3.1.3. Firstly, a Communications Specialist will be hired to assist in: i) organising local-level awareness raising events for farmers; and ii) developing farmer radio shows under Output 3.1.1. Secondly, a Gender Specialist will be hired to oversee the implementation of the Gender Action Plan. He/she will also be responsible for collaborating with the NUEW to ensure that women's needs and interests are represented in the: i) preparation of land use and restoration plans; ii) strengthening and/or establishment of CBOs; and iii) development of community bylaws. Finally, a Policy and Legal Framework Specialist will be hired to guide the establishment of a system to periodically inform decision makers on best practices and locally appropriate approaches to ILM. **The total budget for this item is US$81,100.**
27	*Contractual Services - Company:* This is UNDP's contribution to this activity. The primary focus of this budget (US$46,000) is to secure the services of a company or capable community organisation to develop an education programme for local schools on the benefits of integrated landscape management interventions, including climate-smart practices for agriculture and livestock production. The remaining budget will be used to hire a data company to collate and synthesis lessons learned and best practices from project results. **The total budget for this item is US$76,000.**
28	*Publications:* This is UNDP's contribution to this activity. This budget, ($30,900) will support the production and dissemination of technical publications on topics related to the: i) establishment of an educational programme; ii) collation of lessons learned; and iii) gender action plan. Audio visual and print production: This budget ($50,000) will serve to provide audio production services for the broadcast of a fortnightly farmer radio show. **The total budget for this item is US$80,900.**
29	*Training and Workshops:* This is UNDP's contribution to this activity.US$5,000 will be contribution to Inception workshop costs. *US$73,450,* budget will be used to organise a series of local-level awareness raising events and training programmes for farmers on lessons learned and best practices for CSA and ILM. A further US$95,000 is allocated to a series of workshops focusing on gender. These workshops will be overseen by the Gender Specialist and will facilitate a dialogue on gender issues between CBOs, women's groups and different levels of administration. Budget is also allocated to a workshop to engage stakeholders in the development of a system to periodically inform decision makers on best practices for ILM. **The total budget for this item is US$173,450.**

Budget Notes No.	Explanation
30	*Contractual Services - Individuals:* This budget will cover the cost of a Project Coordinator @ US$850 per month, a Monitoring and Evaluation officer @ US$650 per month and a Project Finance and Administrative Assistant @ US$650 per month. **The total cost for this item is US$180,600.**
31	*Equipment and furniture*: This budget will cover the costs of a project vehicle and office furniture for the PMU. The PMU will be accommodated by the district offices of MoLG in a location to be determined during the inception phase. **The total cost of this item is $85,000 for use over the lifetime of the project.**
32	*Audio visual and print production:* This budget will cover the costs of producing and printing any additional material related to project communication and M&E, including knowledge management materials, documents, plans, strategy papers, awareness material and other related materials. **The total budget for this item is US$17,700.**
33	*Office supplies:* This budget will cover the costs of office supplies, including cartridges, paper, fuel and repairs for use by PMU. **This budget for this item is $25,000 for use over project lifetime.**
34	*Professional services:* This will cover to costs of an annual audit of the project finances. **The budget is US$20,000.**
35	*Training, workshops and conferences:* This budget will cover the costs of project board meetings and any training to be delivered by the PMU to project partners/IP over the life of the project (e.g. on financial reporting). **The budget for this item is $53,307.**
36	*Contractual Services - Individuals:* This budget will cover the cost of salaries of 2 Drivers @ US200 per month for 7 years. **The total cost for this item is US$42,000.**
37	Training, workshops and conferences: This budget will contribute for the costs of project board meetings, supervsion/ oversight missions, stakeholder's meetings and any training to be delivered by the PMU to project partners/IP over the life of the project (e.g. on financial reporting). **The budget for this item is $126,750.**
38	Information Technology Equip: Procure equipment including 5 laptop computers (at $2000 each) and maintaince. **The total budget for this item is $10,750**
39	*Equipment and furniture*: This budget will cover the costs of the 2nd project vehicle @$40,000 and Office Machineries such as Printer @$6,000, photocopy machine @$6,000, camera.@ $1000, LCD @1000 etc**The total cost of this item is $55,000 for use over the lifetime of the project.**
40	Communication: Costs of fast internet connection at an estimated cost of $1,500 per month for the project office and purchase of mobile phones for project staff. **Total estimated cost is $126,000.**
41	Rental & Maintenance-Premises - The budget will cover the rent of Project office in the field with payment of utilities @ $12,500 per year. **The total budget for this item is $87,5000**
42	Material and Goods - The budget will cover the cost of fuel, maintainance fee, tyre etc. estimated @1500 per month. **The total budget for this item is $126,000**
43	Miscellaneous exp - the budget will cover insurances and some miscellaneous expenses. **The total budget for this item is $ 5,250.00**

X. LEGAL CONTEXT

Where the country has signed the Standard Basic Assistance Agreement (SBAA)
This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Eritrea and UNDP, signed on 11th June 1994. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by the Ministry of Local Government (MoLG) in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XI. RISK MANAGEMENT

Option a. Government Entity (NIM)
Consistent with the Article XVIII of the SBAA the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a)UNDP Policy on Fraud and other Corrupt Practices and (b)UNDP Office of Audit and Investigations Investigation Guidelines. The

Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement.

Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

XII. MANDATORY ANNEXES

P. Multi year Workplan

Q. GEF Tracking Tool (s) at baseline

R. Overview of technical consultancies/subcontracts (see example template below)

S. Terms of Reference for Project Board, Project Manager, Chief Technical Advisor and other positions as appropriate (see example template below)

T. UNDP Social and Environmental and Social Screening Template (SESP) and Environmental and Social Management Plan (ESMP) for moderate and high-risk projects

U. Stakeholder Engagement Plan

V. Gender Analysis and Action Plan

W. UNDP Risk Log (to be completed by UNDP Country Office, see template below)

X. Results of the capacity assessment of the project implementing partner and HACT micro assessment (to be completed by UNDP Country Office)

Y. Additional agreements: N/A

Z. UNDP Project Quality Assurance Report (to be completed in UNDP online corporate planning system by UNDP Country Office, does not need to be attached as separate document)

AA. Prelimary Report on Nubian Ibex

BB. Report on PPG baseline assessment

CC. List of past and ongoing projects

DD. Maps

Annex A: Multi Year Work Plan

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Output 1.1.1: Technical review and updates of existing legal instruments conducted to promote/incorporate sustainable use and conservation of forest and wildlife species into landscape restoration planning and implementation.	*Results indicator 1:* Number of strategies for the sustainable use and conservation of forest and wildlife species developed. *Baseline :0 Target: 2* *Results Indicator 2:* Increase in the capacity of technical officers and institutions to apply best practices when designin																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
	g INRM approaches. *Baseline*: 15-20% *Target*: 50% by midterm, 75 % by project end.																													
Output 1.1.2. Integrated landscape restoration plans developed (including for watershed rehabilitation, reforestation and rangeland management) for each of the 5 administrative kebabis in the Nakfa sub-Zoba.	*Results indicator 4:* Number of land use and restoration plans developed and under implementation. *Baseline*: 0 *Target:* Mid-term – 1 End - 3																													
Output 1.1.3: Technical support provided for the establishment and strengthening of community-	*Results indicator 5:* Number of training and capacity development																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
level institutions for natural resource management (e.g. Water User Associations, Farmers' Association and Village Committees) to champion improved land and water management	programmes developed. *Baseline*: 0 *Target*: 2																													
Output 1.2.1: Biodiversity mapping (flora and fauna surveys) conducted to determine status of key species (in particular African Olive, Juniper and Nubian Ibex) in the Nakfa sub-Zoba.	*Results indicator 6:* Number of biodiversity baseline assessments conducted. *Baseline*: 0 *Target*: 2 by midterm, 5 by project end.																													
Output 1.2.2: Revision of existing	*Results indicator 7:*																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
community by-laws to integrate biodiversity species protection/conservation into the use and management of landscapes (e.g. through land-use planning).	Number of biodiversity conservation strategies developed. *Baseline*: 0 *Target*: 2 by midterm, 5 by project end.																													
Output 1.2.3. An integrated system developed to monitor the impacts and benefits of restoration on landscapes, ecosystems and biodiversity.	*Results indicator 8:* Number of monitoring systems developed. *Baseline: 0 Target: 1 Results indicator 6:* Increase in capacity of national government staff,																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
	local technical officers and local community members to implement monitoring system. *Baseline*: 10-15% *Target:* 50% by Midterm, 75% by project end.																													
Output 1.2.4: Technical support and training provided for the development and implementation of measurement, reporting and verification (MRV) of carbon sequestration arising from forest	*Results indicator 9:* Increase in capacity of national government staff, local technical officers and local community members to impleme																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
restoration activities.	nt MRV system. *Baseline*: 10-15% *Target:* 50% by midterm and 75% by project *end.*																													
Output 1.3.1: Agricultural extension support agencies trained on integration of climate advice into agricultural extension support service	*Results indicator 10:* Increase in capacity of extension support agents to integrate climate advice into agricultural extension support services. *Baseline*: 15-20% *Target:* 50% by midterm, 75% by																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	project end.																													
Output 1.3.2: On-farm demonstration and training on water and climate-smart agricultural methods and technologies conducted (e.g. rainwater harvesting, agro-forestry and integrated soil fertility management).	*Results indicator 11:* Number of people trained in the implementation of CSA technologies. *Baseline:* 0 *Target:* 2,000 by midterm, 5000 by project end.																													
Output 1.3.3: Strategy developed to facilitate landscape-level adoption of climate-smart restoration of agricultural landscapes and SLM approaches.	*Results indicator 12:* Number of strategies developed to reduce degradation and improve productivity in agricultural																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
	landscapes *Baseline*: 0 *Target*: 1																													
Output 2.1.1: Interventions to increase water availability and improve soil moisture implemented in the 5 kebabis	*Results indicator 13:* Number of hectares under integrated watershed management. *Baseline*: 161 ha *Target:* 30,000 ha by midterm, 60,000 ha by project end.																													
Output 2.1.2: Improved livestock grazing and livestock water management practices promoted to reduce rangeland degradation and promote	*Results indicator 14:* Number of hectares under sustainable livestock management.																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
livestock productivity.	*Baseline: Target: tbc*																													
Output 2.1.3: Agroforestry and forest restoration promoted through the establishment of community tree nurseries in Endlal, Laba, Bakla and Nakfa.	*Results indicator 15:* Number of tree nurseries established. *Baseline*: 0 *Target:* 4																													
Output 2.1.4: Community-managed forest enclosures expanded through planting and assisted natural regeneration of indigenous and drought-resistant tree species, including the African Wild Olive (Olea europaea sub-species Africana), East African	*Results indicator 16:* Number of hectares under community-managed forest enclosures. *Baseline*: 160 ha *Target:* 14,500 ha by midterm, 17,500 ha by project end.																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
juniper (Juniperus procera) and Carissa edulis.																														
Output 2.1.5: Alternative livelihoods and value-addition opportunities identified and supported to reduce over-dependence on unsustainable land use practices, in particular, bee-keeping (honey production) and horticulture (vegetable and fruit crops).	*Results indicator 17:* Number of households supported for alternative livelihoods and value-addition opportunities. *Baseline*: 0 *Target:* 2,000 by midterm, 5000 by project end.																													
Output 3.1.1: Communication, public awareness-raising and education campaigns conducted locally, with knowledge and best	*Results Indicator 18:* Number of people reached through public awareness																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
practices shared regionally and globally.	campaigns. *Baseline*: 0 *Target:* 20,000 by midterm and 50,00 by project end.																													
Output 3.1.2: A gender strategy developed and implemented, which includes capacity building and enhancing the participation of women in the implementation of INRM approaches and practices.	*Results Indicator 19:* Number of gender strategies developed and implemented for enhancing the participation of women in the project implementation. *Baseline*: 0 *Target:* 1 gender strategy developed by midterm.																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
	1 gender strategy implemented by project end.																													
Output 3.1.3: Strategy developed for the upscaling of lessons learned to: i) other Zobas, sub-Zobas and kibabis; and ii) high-level decision-making institutions.	*Results indicator 20:* Number oflong-term strategies developed and implemented for scaling up of lessons learned from project activities. *Baseline*: 0 *Target:* 1 strategy for scaling-up lessons learned developed by midterm and 1 strategy for																													

Output	Indicator	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
	scaling-up lessons learned implemented by project end.																													

Annex B: GEF Tracking Tool at baseline

Attached separately

Annex C: Overview of Technical Consultancies

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management / Monitoring & Evaluation		
Local / National contracting		
Project Coordinator Rate: US$850/month	84 Months	The Project Coordinator will coordinate the implementation of GEFTF resources. He/she will be accountable for *inter alia*: i) the mobilisation of all project inputs; ii) supervision over project staff, consultants and sub-contractors; iii) the quality, timeliness and effectiveness of the interventions carried out; and ii) the use of project funds. The PC will also perform a liaison role with the government, UNDP and other UN agencies, and project partners.
Monitoring and Evaluation Officer Rate: US$650/month	84 Months	The M&E Officer will have the responsibility for project monitoring and evaluation, including: i) monitoring project progress and participating in the production of progress reports ensuring that they meet the necessary reporting requirements; and standards; and ii) overseeing the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results. Output 1.2.3: The M&E Officer will be coordinate the development of a three-tiered system for monitoring landscape and ecosystem integrity. He/she will also be responsible for coordinating training and capacity building activities for the implementation of the monitoring system. Output 1.2.4: The M&E Officer will provide technical support to forestry officers to measure and report on carbon sequestration, as well as to land users on basic monitoring of carbon sequestration variables.
Gender Officer US$650/month	84 Months	The Gender Officer will be responsible for the implementation of the Gender Action Plan. The Gender Officer will work closely with the M&E Officer on related aspects of project implementation, reporting, monitoring, evaluation and communication. • For Output 3.1.2: Collaborate with the NUEW to ensure that women's needs and interests are represented in the: i) preparation of land use and restoration plans; ii) strengthening and/or establishment of CBOs; and iii) development of community bylaws, under Outcome 1.2. • For Output 3.1.2: Create a discussion forum to facilitate dialogue on gender issues between the CBOs, Kebabi and sub-Zoba administration. • For Output 3.1.2: Document lessons learned from the experiences and coping strategies of women and men and the implications for a future project and program design.
Project Finance and Administrative Assistant US$650/month	84 Months	The PFAA will produce the necessary financial reports for UNDP and directly support the PC with administrative tasks.

Consultant	Time Input	Tasks, Inputs and Outputs
International / Regional and global contracting		
Independent mid-term reviewer Rate: US$40,000	4 weeks	Conduct a mid-term review of project interventions
Independent terminal evaluation consultant Rate: US$40,000	4 weeks	Conduct a terminal evaluation of the project
For Technical Assistance		
Local / National contracting		
Policy and Legal FrameworkSpecialist Rate: $100/day	90 days	In close coordination with the PC, the Policy and Legal Framework Specialist will review existing legislative frameworks in Eritrea. • For Output 1.1.1: Develop two strategies for the: i) protection and conservation of flora and fauna species; and ii) protection and restoration of forest ecosystems. • For Output 1.2.2: Review existing by-laws and local customs on the use, protection and conservation of key species (African Olive, Juniper and Nubian Ibex). • For Output 1.2.2: Develop a strategy for the inclusion of conservation recommendations into local by-laws. • For Output 1.2.2: Develop an enforcement protocol for local by-laws focused on land-use planning and species conservation.
Capacity Development Specialist Rate: $100/day	90 days	In close coordination with the PC, the Capacity Development Specialist will conduct capacity needs assessments and design a capacity development strategy for national and sub-national government staff. Specific outputs are described below. • For Output 1.1.1: Provide training and capacity building of technical officers and institutions on how to properly apply best practices when designing Integrated Natural Resource Management (INRM) approaches. • For Output 1.1.3: Undertake a general capacity and resource needs assessment of MoLG, MoLWE, MoA, and the relevant administrations at the national and Zoba level to identify training and technical support needs for ILM.

Consultant	Time Input	Tasks, Inputs and Outputs
		• For Output 1.1.3: Develop short- medium- and long-term training and capacity development programmes for government staff at the national, Zoba and sub-Zoba levels to meet the needs identified in activity 1.1.3.3. • For Output 1.3.1: Conduct a needs assessment for CSA training, including: i) a stock-taking exercise to identify existing training materials on CSA in the Northern Red Sea Region of Eritrea; and ii) an assessment of the types of training required to build Zoba and sub-Zoba capacities.
Landscape Management Specialist Rate: US$120/day	70 days	In close coordination with the PC and sector specialists, the Landscape Management Specialist will develop an integrated landscape management plan for the Rora Habab Plateau, including detailed subplans focusing on watersheds, forestry, wildlife, rangelands and agricultural systems. • For Output 1.1.2: Develop an integrated landscape management plan for the Rora Habab Plateau. • For Output 1.3.3: Conduct a baseline assessment of degradation to agricultural landscapes, identifying threats to the integrity and resilience of those landscapes • For Output 1.3.3: Develop a strategy to reduce degradation and improve productivity in agricultural landscapes by investing in SLM and promoting livestock management. • For Output 2.1.2: Develop community-level livestock and rangeland management systems to reduce overgrazing and improve productivity of rangelands.
Biodiversity Specialist Rate: US$100/day	50 days	In coordination with the PC and Landscape Management Specialist, the Biodiversity Specialist will conduct baseline assessments of flora and fauna in the project area and provide guidance for the development of integrated land management plans. • For Output 1.2.1: Conducta baseline assessment of flora in the Nakfa sub-Zoba, with a focus on *Juniperus procera* and *Olea europaea subsp. africana*. • For Output 1.2.1: Conduct a baseline assessment of fauna in the Nakfa sub-Zoba, with a focus on *Capra nubiana*.
Carbon MRV Specialist Rate: US$120/day	90 days	In coordination with the PC and the M&E Officer, the Carbon MRV Specialist will provide technical support for the monitoring of carbon sequestration in the project area. • For Output 1.2.4: Conduct a baseline assessment of the landscape and design a protocol for MRV in the Rora Habab Plateau of Eritrea. • For Output 1.2.4: Provide technical support and training to forestry officers to measure and report on carbon sequestration. • For Output 1.2.4: Provide technical support and training to land-users on basic monitoring of carbon sequestration variables.

Consultant	Time Input	Tasks, Inputs and Outputs
Extension Services Specialist Rate: US$100/day	90 days	In coordination with the PC, the Extension Services Specialist will review existing extension services in the project area and develop a revised extension package that will support the transition to climate-smart agriculture and establish an effective working link with farmers. • For Output 1.2.4: Review and update the extension services package to include aspects that are not covered within the current portfolio and pilot the revised extension services package in sub-Zoba. The extension services packages will be tailored to the local context concerning: i) climate conditions; ii) prevailing socio-economic conditions; iii) environmental considerations; and iv) the needs of local communities. • For Output 1.2.4: Train extension agents on the revised extension packages.
Hydrologist Rate: US$120/day	50 days	In coordination with the PC, the hydrologist will assess and advise on appropriate site-specific water conservation interventions. • For Output 2.1.1: Undertake site investigations and hydrological analyses of potential locations for the implementation of integrated water management, soil and water conservation measures, including watershed restoration to capture water and increase the functioning of existing ponds and wadis.
Livelihood Specialist Rate: US$100/day	60 days	In coordination with the PC, the Livelihood Specialist will assess the value chains of rural livelihoods and provide guidance to communities on how to diversify their income. • For Output 2.1.5: Provide technical support for expanding the value chain of existing livelihood strategies. • For Output 2.1.5: Train community members on packaging of products from existing livelihood activities to increase market value. • For Output 2.1.5: Conduct a market survey to guide the development of local and regional markets.
Communications Specialist Rate: US$100/day	90 days	In coordination with the PC, the Communications Specialist will develop andcoordinateawareness raising campaigns for the project. • For Output 3.1.1: Conduct a public awareness campaign using local media to inform communities on the effects of climate change and benefits of appropriate integrated landscape management interventions. • For Output 3.1.1: Organise local-level awareness-raising campaigns and training programs for farmers on lessons learned and best practices. • For Output 3.1.1: Establish an education programme in local schools on the benefits of integrated landscape management interventions, including climate-smart agricultural technologies, livestock production practices and alternative income-generating activities. • For Output 3.1.1: Provide support to the development and broadcast of farmer radio shows.

Annex D: Terms of Reference

Terms of Reference for the National Steering Committee (NSC)

The National Steering Committee will serve as the project's decision-making body. It will meet according to necessity, at least twice each year, to review project progress, approve project work plans and approve major project deliverables. The NSC is responsible for providing the strategic guidance and oversight to project implementation to ensure that it meets the requirements of the approved Project Document and achieves the stated outcomes.

The NSC will comprise the following members:

- Secretary from Ministry of Land, Water and Environment (Co-Chair);
- Representatives of:
  - Forestry and Wildlife Authority;
  - Ministry of Local Government;
  - Ministry of National Development;
  - Ministry of Agriculture;
  - Ministry of Energy and Mines;
- One government representative from each project region; and
- Representative of UNDP (Co-Chair).

Scope of work:

- Provide strategic guidance to project implementation.
- Ensure coordination between various donor funded and government funded projects and programmes.
- Ensure coordination with various government agencies and their participation in project activities.
- Approve annual project work plans and budgets, at the proposal of the Project Manager.
- Approve any major changes in project plans or programmes.
- Oversee monitoring, evaluation and reporting in line with GEF requirements.
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project.
- Ensure a continued cohesion between the project and the mandate of the MoLG.
- provide additional linkages and interactions with high-level policy components within the government.
- Negotiate solutions between the project and any parties beyond the scope of the project.
- Ensure that UNDP Social and Environmental Safeguards Policy is applied throughout project implementation and address related grievances as necessary.

These terms of reference will be finalized during the Project Inception Workshop.

Terms of Reference for Project Coordinator (PC)

Scope of work

The Project Coordinator will be locally recruited by MoLG following UNDP procedure, with input to the selection process from the Project partners. The PC will coordinatethe implementation of GEFTF resources. He/she will be accountable for inter alia: i) the mobilisation of all project inputs; ii) supervision over project staff, consultants and sub-contractors; iii) the quality, timeliness and effectiveness of the interventions carried out; and ii) the use of project funds.The PC will report to the NSC, in close consultation with the assigned UNDP Programme Manager for all of the

Project's substantive and administrative issues. The PC will also perform a liaison role with the government, UNDP and other UN agencies, and project partners.

Duties and responsibilities

- Head the Project Management Unit (PMU).
- Plan the activities of the project and monitor progress against the approved work-plan.
- Supervise and coordinate the production of project outputs, as per the project document in a timely and high-qualitymanner.
- Coordinate all project inputs and ensure that they are adhere to UNDP procedures for nationally executed projects.
- Supervise and coordinate the work of all project staff, consultants and sub-contractors ensuring timing and quality of outputs.
- Coordinate the recruitment and selection of project personnel, consultants and sub-contracts, including drafting terms of reference and work specifications and overseeing all contractors' work.
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments, or reimbursement using the UNDP provided format.
- Prepare, revise and submit project work and financial plans, as required by NSC and UNDP.
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports, submitted on a quarterly basis.
- Manage and monitor the project risks initially identified and submit new risks to the project board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log.
- Liaise with UNDP, NSC, relevant government agencies, and all project partners for effective coordination of all project activities.
- Facilitate administrative support to subcontractors and training activities supported by the Project.
- Oversee and ensure timely submission of the Inception Report, Project Implementation Report, Technical reports, quarterly financial reports, and other reports as may be required by UNDP, GEF and other oversight agencies.
- Disseminate project reports and respond to queries from concerned stakeholders.
- Report progress of project to the steering committees and ensure the fulfilment of PSC directives.
- Oversee the exchange and sharing of experiences and lessons learned with relevant community based integrated conservation and development projects nationally and internationally.
- Assist community groups, municipalities, staff, students and others with development of essential skills through training workshops and on the job training thereby increasing their institutional capabilities.
- Encourage staff, partners and consultants such that strategic, intentional and demonstrable efforts are made to actively include women in the project, including activity design and planning, budgeting, staff and consultant hiring, subcontracting, purchasing, formal community governance and advocacy, outreach to social organizations, training, participation in meetings; and access to program benefits.
- Carry regular, announced and unannounced inspections of all sites and the activities of the Project Implementation Units.
- Supervise, coordinate and facilitate the work of the Project Finance and Administrative Associate (PFAA) and the Project Technical Assistant to the Coordinator (PTA), field officers and the technical committee (including national and international experts).

Required skills and expertise

- A university degree (MSc or PhD) in natural resource management, environmental sciences, ecological restoration or closely related field.
- At least 10 years of experience in natural resource management, including at least 6 years of demonstrable project/programme management experience in relevant sectors.
- Demonstrated solid knowledge of adaptation to climate change, ecological restoration and sustainable exploitation of natural resources.
- Experience in the public participation development process associated with environment and sustainable development is an asset.
- Experience in working and collaborating within governments is an asset as well as experience in GEF projects.

Competencies

- Strong leadership, managerial and coordination skills, with a demonstrated ability to effectively coordinate the implementation of large multi-stakeholder projects, including financial and technical aspects.
- Ability to effectively manage technical and administrative teams, work with a wide range of stakeholders across various sectors and at all levels, to develop durable partnerships with collaborating agencies.
- Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project.
- Ability to coordinate and supervise multiple Project Implementation Units in their implementation of technical activities in partnership with a variety of subnational stakeholder groups, including community and government.
- Strong drafting, presentation and reporting skills.
- Strong communication skills, especially in timely and accurate responses to emails.
- Strong computer skills, in particular mastery of all applications of the MS Office package and internet search.
- Strong knowledge about the political and socio-economic context related to the Eritreanland management, biodiversity conservation and law enforcement at national and subnational levels.
- Excellent command of English and local languages.

Terms of Reference for Project Monitoring and Evaluation Officer

Scope of work

Under the overall supervision and guidance of the Project Coordinator, the M&E Officer will have the responsibility for project monitoring and evaluation.

Duties and responsibilities

- Monitor project progress and participate in the production of progress reports ensuring that they meet the necessary reporting requirements and standards;
- Ensure project's M&E meets the requirements of the Government, the UNDP Country Office, and UNDP-GEF; develop project-specific M&E tools as necessary;
- Oversee and ensure the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results;
- Oversee/develop/coordinate the implementation of the stakeholder engagement plan;

- Oversee and guide the design of surveys/ assessments commissioned for monitoring and evaluating project results;
- Facilitate mid-term and terminal evaluations of the project; including management responses;
- Facilitate annual reviews of the project and produce analytical reports from these annual reviews, including learning and other knowledge management products;
- Support project site M&E and learning missions; and
- Visit project sites as and when required to appraise project progress on the ground and validate written progress reports.

Required skills and expertise
- A university degree (MSc or PhD) in natural resource management, environmental sciences, ecological restoration or closely related field.
- At least five years of relevant work experience, preferably in a project management setting involving multi-lateral/ international funding agency. Previous experience with UN project will be a definite asset.
- Significant experience in collating, analysing and writing up results for reporting purposes.
- Very good knowledge of results-based management and project cycle management, particularly with regards to M&E approach and methods. Formal training in RBM/ PCM will be a definite asset.
- Knowledge and working experience of the application of gender mainstreaming in international projects.
- Understanding of biodiversity conservation, law enforcement, sustainable livelihoods and associated issues.
- Very good inter-personal skills.
- Proficiency in computer application and information technology.
- Excellent language skills in English (writing, speaking and reading) and in local languages.

Terms of Reference of the Project Gender Officer (GO)

Scope of work
Under the overall supervision and guidance of the Project Coordinator, the Gender Officer will be responsible for the implementation of the Gender Action Plan. The Gender Officer will work closely with the M&E Officer on related aspects of project implementation, reporting, monitoring, evaluation and communication.

Duties and Responsibilities
- Monitor progress in implementation of the project Gender Action Plan ensuring that targets are fully met, and the reporting requirements are fulfilled;
- Oversee/develop/coordinate implementation of all gender-related work;
- Review the Gender Action Plan annually, and update and revise corresponding management plans as necessary;
- Work with the M&E officer and Safeguards Officer to ensure reporting, monitoring and evaluation fully address the gender issues of the project;

Required skills and expertise

- Master's degree in gender studies, gender and development, environment, sustainable development or closely related area.
- Demonstrated understanding of issues related to gender and sustainable development.
- At least 5 years of practical working experience in gender mainstreaming, women's empowerment and sustainable development in relevant Country/Region/Area of Work;
- Previous experience with UN projects will be a definite asset;
- Demonstrated understanding of the links between sustainable development, social and gender issues;
- Experience in gender responsive capacity building;
- Experience with project development and results-based management methodologies is highly desired/required;
- Excellent analytical, writing, advocacy, presentation, and communications skills;
- Excellent language skills in English (writing, speaking and reading) and in local languages.

Terms of Reference of the Project Finance and Administration Assistant (PFAA)

Scope of work

Under the guidance and supervision of the Project Coordinator, the PFAAwill produce the necessary financial reports for UNDP and directly support the PC with administrative tasks. The PFAA will be familiar with UNDP financial administration procedures and financial reporting requirements.

Duties and Responsibilities

- Standardise the finance and accounting systems of the project while maintaining compatibility with the government and UNDPs financial accounting procedures.
- Prepare revisions of the budget and assist in the preparation of annual work plans.
- Comply and verify budget and accounting data by researching files, calculating costs and estimating anticipated expenditures from readily available information sources.
- Prepare status reports, progress reports and other financial reports.
- Process all types of payment requests for settlement purposes including quarterly advances to the partners upon joint review.
- Prepare periodic accounting records by recording receipts, disbursements (ledgers, cashbooks, vouchers, etc.) and reconciling data for recurring or financial reports and assist in preparation of annual procurement plans.
- Undertake project financial closure formalities including submission of terminal reports, transfer and disposal of equipment, processing of semi-final revisions, and support professional staff in preparing the terminal assessment reports.
- Assist in the timely issuance of contracts and assurance of other eligible entitlements of the project personnel, experts, and experts by preparing annual recruitment plans.

Required skills and expertise

- At least a post-graduate degree in accounting, financial management or a related discipline such as.
- A minimum of 5 years' experience in a senior finance position.
- Previous similar experiences working for International Organisations. Working for an UN agency would be an advantage.
- Experience with procurement processes an advantage.

- Good communication and computer skills.
- Excellent language skills in English (writing, speaking and reading) and in local languages.

Terms of Reference for the Project Technical Assistant (PTA)

Scope of work
Under the supervision of the PC, a PTA will be hired to directly support the PC with administrative tasks.

Duties and responsibilities
- Report to the PC.
- Assist the PC with PIRs, Project reports and the Project closure workshop.
- Assist the PC with the preparation of visits to the project demonstration sites.
- Assist the PC with daily administrative and logistical tasks.

Required skills and expertise
- Bachelor's degree natural resource management, environmental sciences, ecological restoration or closely related field.
- Experience working in the field of environment and sustainable development an asset.
- Experience in working and collaborating with local authorities an asset.
- Excellent language skills in English (writing, speaking and reading) and in local languages.

General Terms of Reference for National Experts of the Support Team

To strengthen in-country capacity, where possible, local rather than international expertise will be hired. National experts will be hired by the project to:
- Collect data.
- Provide advice relevant to their field.
- Monitor interventions.

The national experts should have good knowledge and understanding of Eritrea'sbiodiversity, land degradation threats and climate change vulnerability. They must have appropriate MSc degree with a minimum of 5 years' experience or a bachelor's degree with an additional 10 years' experience in their field of expertise. National experts need to be fluent in both written and spoken English and local languages.

The hiring procedure for both national and international experts must be a transparent and competitive process based on normal procedures.

Project Information

Project Information	
1. Project Title	Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Nakfa sub-Zoba, Northern Red Sea Region of Eritrea
2. Project Number	PIMS 5519
3. Location (Global/Region/Country)	Eritrea

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights based approach
This project mainstreams the human rights-based approach through interventions that address poverty, social equity and equality and promotes approaches to natural resources governance that empower local people to have more control over the natural resources that their livelihoods depend on. It works to uphold human rights and improve the living conditions and general well-being of some 22,477 people (11,576 males and 10,901 females) people currently living within the project footprint, as well as contributing regionally and nationally to improved food and water security as well as protection of ecosystems, forests and biodiversity. It includes interventions designed to improve access to natural resources (e.g. water, arable land/soils and forests) and to empower communities to use and manage these in ways that improve their livelihoods without compromising the ecological integrity of the catchments and ecosystems. By strengthening the capacity for developing and implementing land-use plans that explicitly take into account consideration of water usage, and building the capacity of community, local authorities and state institutions to monitor and promote restoration and rehabilitation interventions, mainstream resource protection (e.g. through mainstreaming of biodiversity and SLM into agricultural production) and adopt a landscape approach to land use and management, the project aims to reduce the impacts of agricultural activities on the integrity of ecosystems and biodiversity and also build the resilience of these ecosystems and reduce the vulnerability of communities against the impacts of land degradation and climate change. The project also includes elements that are designed to ensure that duty bearers within the project are adequately capacitated to perform their roles. The project seeks to enhance the livelihoods and well-being of communities living in the Nakfa sub-Zoba (sub-region) by promoting uptake of sustainable income-generating activities (IGAs) and the adoption of SLM and SFM technologies and biodiversity-friendly approaches that improve economic, food and water security. Through promotion of reforestation activities, the project will also support initiatives that increase community participation in forestry management and promote increased benefits to communities from reforestation and conservation activities. It will put in place deliberate pro-poor measures to ensure the participation of the poorest households and will strive to ensure that the benefits of the project are equitably distributed within participating communities.
Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

The project design includes specific measures to address gender empowerment and equality, whilst respecting the norms, values and customs of the receiving communities. Specific targets have been set to ensure the inclusion and participation of women and girls both in site-based project activities (such as the development of alternative income-generating activities, capacity building programmes, developing farmer-led extension services and mainstreaming the SLM, SFM and biodiversity conservation messages within local communities), as well as ensuring that opportunities are created for women to take up positions of leadership in relevant institutions within the water and natural resources governance hierarchy (e.g. Water User Associations) and project management structures (e.g. Project Steering Committee). Based on lessons learned from other projects that have been implemented in Eritrea, the project will adopt an approach in which gender is viewed as part of a wider discussion of vulnerability and in which attention will also be given to the rights and special needs of other vulnerable groups (such as the elderly, youth and other marginalised groups).

Briefly describe in the space below how the Project mainstreams environmental sustainability

This project mainstreams environmental sustainability in two principal ways: (i) through making investments that will collectively contribute to the medium and long term restoration of forest and agricultural landscapes, watershed services and land and soil quality through reforestation, improving land cover and soil fertility, reducing human-induced pressures on forests, reducing vulnerability to climate change, and introducing SLM in agriculture and livestock management systems; and (ii) the project will develop the capacity of farmers, agricultural extension agents, water basin managers and water users to effectively plan, monitor and adapt land management and leverage investments for integrating SLM, biodiversity and forest protection into agricultural production practices within the Nakfa sub-Zoba and wider Rora Habab plateau.

Under Component 1, the project will ensure that local-scale environmental gains can be sustained into the future by putting in place integrated land-use and restoration plans that give simultaneous consideration to environmental and social gains, the location of land-uses at the landscape scale, and the long-term impacts of land-use and watershed management on land quality, forestry and water resources. Implementing SLM, forest restoration and priority watershed rehabilitation in the context of carefully-crafted Integrated Landscape Restoration Plans will mean that the environmental gains at particular sites contribute to maintaining ecological functionality at a landscape-scale and over time. It will also help ensure that environmental gains achieved at one site are not compromised later by inappropriate location of other land uses or developments. Environmental sustainability will be further enhanced by the development of spatial decision-support systems and tools that make it possible to track the impacts of SLM, forest restoration and washed rehabilitation on land degradation, soil health and water quality and quantity and agricultural productivity, as this will enable the adaptive land and water resource management approach that will be required to sustain environmental gains over the longer term. Attention will also be given to strengthening capacity for integrated planning and management as well as promoting knowledge-exchange.

Under Component 2, the Project investments will collectively contribute to the medium- and long-term restoration of degraded forests and upper watersheds and land quality through interventions that: (a) alleviate the prevailing negative impacts of unsustainable land-use practices on habitats and ecosystem services; (b) limit the loss of remaining natural habitats; (c) restore degraded forests and re-connect currently fragmented forest patches; (d) improve land cover and soil fertility in agricultural lands and rangelands; and (d) restore and protect hydrological functioning within the landscape. Environmental sustainability will be further enhanced by implementing SLM and reforestation activities at sites that will not only make the greatest contribution to securing hydrological processes, but that also deliver the most direct socio-economic gains, because poverty is a key driver of land degradation and biodiversity loss.

Component 3 will ensure that learning and knowledge exchange, awareness-raising, communication and monitoring remain integral parts of everyday natural resources management and agricultural production practices at all levels (households, farm-level, community, kebabi (regional) administration and national levels). Knowledge produced at the project site level will be packaged such that it is shared with other parts of Eritrea and with decision-making structures at

the national level and used to improve the expertise of state institutions, local authorities and community organizations within the country. Diverse and innovative communication strategies will be adopted by the project to ensure that all stakeholders are reached, as literacy levels among the rural farming communities is relatively low, therefore limiting the up-take of knowledge-based practices at farm and local community levels.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Attachment 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
Risk 1: The capacity of state institutions, notably in Government agricultural extension services and for natural resource management, is inadequate and under-resourced. Principle 1, item 5 (checklist): Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	I = 3 P = 3	**Moderate**		The project will have a strong focus on building the staff, resource and technical capacity of farmers, agricultural extension agents, local authorities, across the natural resource management and agricultural production spectrum, to ensure that they are adequately capacitated to design and manage SLM and landscapes/watershed/forest restoration interventions. Training and capacity building activities will focus on ensuring that decision-making on resource use and management (e.g. agricultural extension services and watershed rehabilitation) integrates knowledge, science and best-practice to promote environmental sustainability of management interventions.

Risk 2: Stakeholder capacity for participation in decision-making is inadequate. All land in Eritrea belongs to the state, and citizens only have user rights to resources on it. Principle 1, item 6 (checklist): Is there a risk that rights-holders do not have the capacity to claim their rights?	I = 2 P = 2	Low		The project will support communities and land users to gain skills and capacity to participate in local level decision-making process about the use of land and other natural resources within community control. Community institutions and resource-user groups such as farmers' associations and water user associations will also be trained/capacitated with skills to adopt and take up improved agroecological and land use practices that position them to better benefit from the use of natural resources and ecosystem goods and services.
Risk 3: Project-supported reforestation activities are intended to promote ecological and watershed benefits, but unintended consequences (e.g. excessive abstraction of groundwater by trees) is possible if fast-growing tree species are planted in areas with low precipitation. Standard 1, 1.5 - Would the Project pose a risk of introducing invasive alien species? 1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?	I = 3 P = 3	Moderate		The project is designed by biodiversity, SLM, SFM and climate change experts to promote reforestation and regeneration of degraded forests and watersheds. Only indigenous plant species will be promoted by the project for enrichment planting and nurseries. It should be noted, however, that in Eritrea the practice of using exotic tree species for reforestation is common and widespread and the project will respect the local communities' control of the production in their nurseries and plantations. The project will actively engage the relevant state agencies on the pros and cons of this approach and ensure that project funds are only used to promote interventions that enhance rather than jeopardise ecosystem integrity. Where exotic species are used, UNDP will ensure that these are procured using government co-financing, and not UNDP or GEF funds.
Risk 4: Increased frequency and intensity of droughts under climate change conditions negatively impact the habitability of the Rora Habab Plateau for water-dependant wildlife species (such as Nubian ibex) and may affect the restoration interventions that are dependent on rainfall such as reforestation. Standard 2 - Climate Change Mitigation and Adaptation, 2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	I = 2 P = 2	Low		Training on DRM and early warning; (ii) Improved water harvesting practices combined with SLM/SFM. Under Output 2.1.1 of the project, interventions will be implemented to improve water availability in the Rora Habab Plateau through inter alia: i) increased infiltration to strengthen groundwater reserves; ii) improved river flows through the restoration of upper catchment areas; and iii) enhanced filling of storage ponds, micro-dams and wadis through the introduction of innovative landscape-level water harvesting technologies. Consequently, water availability within the project area will be strengthened, reducing the impacts of droughts on wildlife. This risk will also be mitigated through the identification of natural wildlife corridors connecting the project area to neighbouring areas. For example, the project area is connected to the Semienawi and Debubawi Bahri – which has

				been targeted for the establishment of a protected area – through the central highland zone. Restoration activities implemented under Output 2.1.3 will improve the ecological functioning of this natural corridor allowing local wildlife to access water (and other resources) during drought periods.
Risk 5: Landscape restoration (soil and conservation) activities in Eritrea are usually implemented using the community mobilization approach, where community members carry out supervised physical work (e.g. building stonewalls, bunds, terraces, planting trees etc.) on communal land. An average government fee for each category of work, referred to as 'Work Norm' *(e.g. Hill side terrace construction /width=1m/height > 75cm)* is compensated at about US$4 per day. Principle 3, Standard 3 3.8 - Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	I = 3 P =3	Moderate		In light of the recent findings of the UN Commission of Inquiry on Human Rights in Eritrea, which raised allegations of forced labour (disputed by the government), the project will ensure that the social and environmental safeguards policy of the UNDP (SES) are fully adhered to implementation stages of the project. The project will put in place a mechanism to ensure that all labour utilized by the project is fully compensated through a cash-for-work mechanism following the guidance put in place by government.
[add additional rows as needed]				

	QUESTION 4: What is the overall Project risk categorization?	
	Select one (see SESP for guidance)	**Comments**
	Low Risk ☐	
	Moderate Risk X	
	High Risk ☐	

	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?	
	Check all that apply	**Comments**
	Principle 1: Human Rights ☐	

	Principle 2: Gender Equality and Women's Empowerment	☐	
	1. Biodiversity Conservation and Natural Resource Management	☐	
	2. Climate Change Mitigation and Adaptation	☐	
	3. Community Health, Safety and Working Conditions	☐	
	4. Cultural Heritage	☐	
	5. Displacement and Resettlement	☐	
	6. Indigenous Peoples	☐	
	7. Pollution Prevention and Resource Efficiency	☐	

Final Sign Off

Signature	*Date*	*Description*
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases, PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		
Principles 1: Human Rights		**Answer (Yes/No)**
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	N
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups?[67]	N
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	N
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	N
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	Y
6	Is there a risk that rights-holders do not have the capacity to claim their rights?	Y
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	N
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	N
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	N
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	N
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	N
4.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being*	N
Principle 3: Environmental Sustainability: Screeningquestions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	N

[67]Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes	
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	N
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	N
1.4	Would Project activities pose risks to endangered species?	N
1.5	Would the Project pose a risk of introducing invasive alien species?	N
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	Y
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	N
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	N
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	N
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	N
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.*	N
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[68] greenhouse gas emissions or may exacerbate climate change?	N
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Y
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	N
Standard 3: Community Health, Safety and Working Conditions		

[68] In regard to CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	N
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	N
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	N
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	N
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	N
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	N
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	N
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	N
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	N
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect, and conserve Cultural Heritage may also have inadvertent adverse impacts)	N
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	N
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	N
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	Y
5.3	Is there a risk that the Project would lead to forced evictions?[69]	N
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	N
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	N
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	N

[69] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

3. The project's design incorporates several features to ensure ongoing and effective stakeholder participation in the project's implementation. The mechanisms to facilitate involvement and active participation of different stakeholder in project implementation will comprise a number of different elements:

(i) Project inception workshop to enable stakeholder awareness of the start of project implementation

4. The project will be launched in a multi-stakeholder workshop. This workshop will provide an opportunity to provide all stakeholders with the most updated information on the project and the project work plan. It will also establish a basis for further consultation as the project's implementation commences.

5. The inception workshop will address a number of key issues including: assist all partners to fully understand and take ownership of the project; detail the roles, support services and complementary responsibilities of the key project stakeholders – MoLG, MoLWE, MOA, Northern Red Sea Zoba Administration, and sub-Zoba and Kebabi Administrations, Civil Society, Academia and Communities, as well as Development Partners, *vis à vis* the implementation of project outputs and activities; and discuss the roles, functions, and responsibilities within the project structure, including reporting and communication lines, and conflict resolution mechanisms.

6. The Workshop will also be a forum to: review the project budget; finalize the first annual work plan as well as review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks; provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements; and plan and schedule project meetings for the Steering Committee.

Constitution of Steering Committee to ensure representation of stakeholder interests in project

7. A Project Steering Committee (PSC) will be constituted to ensure broad representation of all key interests throughout the project's implementation. The representation, and broad terms of reference, of the SC are further described in the (Governance and Management Arrangements) of the Project Document.

Establishment of a Project Management team to oversee stakeholder engagement processes during project

8. The Project Management Unit (PMU) - comprising a Project Manager (PM), Project Monitoring and Evaluation Officer, Finance and Administrative Assistant (FAA) will take direct operational and administrative responsibility for facilitating stakeholder involvement and ensuring increased local ownership of the project and its results.

Project communications to facilitate ongoing awareness of project

The project will develop, implement and maintain anawareness and communications strategy to ensure that all stakeholders are informed on an ongoing basis about: the project's objectives; the projects activities; overall project progress; and the opportunities for involvement in various aspects of the project's implementation. This strategy will ensure the use of communication techniques and approaches that appropriate to the local contexts such as appropriate languages and other skills that enhance communication effectiveness.

Stakeholder consultation and participation in project implementation

9. A comprehensive stakeholder consultation and participation process will be developed and implemented for each of the outputs/activities.

10. A participatory approach will be adopted to facilitate the continued involvement of local stakeholders including the vulnerable and marginalized members of the community (including women) and institutions in the implementation of the project activities within the targeted villages and kebabis. Wherever possible, opportunities will be created to train and employ local residents from villages proximate to sites targeted for project intervention.

Formal structures to facilitate stakeholder involvement in project activities

11. The project will also actively seek to establish formalized structures to ensure the ongoing participation of local and institutional stakeholders in project activities. More specifically it will support the establishment of local groups such as water user associations, beekeepers, committees as an institutional mechanism to improve the communication, collaboration and cooperation between rights holders, natural resource users and the relevant national, regional and local administrations.

(vii) Capacity building

12. All project activities are strategically focused on building the capacity - at the systemic, institutional and individual level - in order to ensure sustainability of initial project investments. Significant GEF resources are directed at building the capacities of *inter alia*: NRM institutions, community groups, including women and the youth. The project will in particular build the capacity of local communities (e.g. local community groups and vulnerable and marginalized segments) to enable them to actively participate in project activities. The project will, wherever possible, use the services and facilities of existing local training and skills development institutions.

Coordination with other related initiatives

13. The Project Management Unit (PMU) of this project will continually scan for new and existing projects addressing similar issues and seek collaborations to learn lessons and build synergies.

14. The project will seek to develop collaborative agreements with relevant NGO partners and national and international research institutions to support the implementation of selected project activities. The project will, within the framework of these collaborative agreement/s, then assist in reimbursing the costs of NGOs and academic institutions in the direct implementation of activities that fall directly within the ambit of the project outputs.

Annex G: Gender Analysis; Summary of Findings Socio-economic/Livelihood and Gender Analysis

SOCIO-ECONOMIC/LIVELIHOOD ASSESSMENT

1. **Demographic Characteristics**

- 59% of the respondents are female and the remaining 41% are male.
- Average age of respondents is 45 years.
- 91% of the respondents are married, 5% are widowed, and the remaining 4% are either single or separated.
- 87% of the respondents are heads of households. This has an implication on the mobility of the female.
- Average family size is 6 which is above the national average of 4.5. This has an implication on the socio-economic situation of the households. The limited resources of the household will be shared among large number of members of the households limiting availability of food and nutrition of the households.

2. **Socio-economic assessment**

- 90% of the households indicated that their children have access to education whereas the access the households have to health facilities is only 49 %.
- Communities in Rora Habab are agro-pastoralists engaged in livestock rearing and farming.
- Most of the households own less than 10 livestock. 65 percent of the HHs own cows, about 42 percent oxen, 55 percent goats, 42 percent sheep, 33 percent camels and 64 percent donkeys.
- Communities face challenges to plough their land affecting crop production.
- About 92 % of the HHs indicate that their income is either from crops or livestock. 5% of HH income is from trade.
- Other source of income (3%) include loan, property rent, salary, ***selling wood***, cash for work, daily laborers, and getting support from the community.
- Keeping beehive is not a common practice in the project area.
- About 75% of the HHs eat one or two meals per day. Average is 2 per day. This implies that the livelihoods of the majority of the HHs is below the average livelihood in the country.
- As the level of income of the households is very low, in the short-term the communities should be provided with alternative source of income such as beehive, and horticulture if they are to refrain themselves from considering wood as a source of income.
- 98% of the HHs said that crop production is below their annual consumption. This is because of the low yield per hectare which is affected by factors such as; the size of land holding, land fertility, use of agricultural inputs, availability of extension services and technology.
- Average size of land holding is 0.71 hectare slightly higher than what is indicated in the land proclamation (0.6 ha/HH). However, 57% of the HHs own 0.5 hectares of land or less.
- Report from the sub-Zoba administration show that the average crop production for 2015-2017) is about 2 quintals per households.
- 62% sell livestock as alternative source when they face shortage of crop production.
- 85% of the HHs indicated that food security is their main challenge with shortage of water (8%) being the second challenge.
- 80% of the HHs indicated that they have challenge of selling their product to the market (Nakfa). This is partly because of the long distance from the villages.
- Market price is less attractive. This entails developing mechanism where the community gets access to the market such as establishing cooperatives which might provide opportunities to the farmers to integrate their effort in transporting the products to the market and provides them leverage on the prices they set for their produce.

3. **Awareness and Participation in NRM**

- Members of the community realize that protecting the NR is beneficial for the HHs.
- Most (88%) of the HHs consider conservation of NR (land, water, forest, grazing area) is their responsibility.

- All the respondents indicated that the impact of the above land degradation, erosion, and water shortage to their livelihood is high.
- Thus, the level of awareness of the community in the NRM is high.
- Participation in the conservation of NR is high - Land (65%), water (71%), forest (43%) and pasture land (40%).
- The role perception of the community is higher than their actual participation in the conservation of natural resources (HIGH: Land 93%/65%; Water 94%/71%; Forest 86%/43%; Pasture land 88%/33%).

GENDER ANALYSIS

1. Policies and strategies in support of women empowerment in Eritrea

a) National commitments

- Macro Policy of the State of Eritrea of 1994 strongly supports women empowerment and indicates that it has to be considered in all development efforts.
- Since then a lot of effort has been made by all government institutions and the community to change the situation regarding the empowerment of women in the country.
- NUEW mainly mandated institution for empowering women.
- The Ministry of Justice has also revised its civil codes in such a way that they accommodate gender equality in the country.
- The Ministry of Land, Water and Environment (MLWE) has also issued its land proclamation that ascertained women's right to land on equal basis with men.
- More effort is needed to fully realize the National aspirations in relation to gender equality in Eritrea.
- The Interim *Poverty Reduction Strategy Paper* (PRSP) of 2004 and the *National Food Security Strategy* are key national planning documents addressing the issue of gender equality and women's empowerment. One of the focus of the household food security component of the strategy is to strengthen the capabilities of rural women by enhancing their i) access to productive resources such as land, credit, technology and training; ii) improving the supply of clean drinking water; and promoting and developing agricultural techniques.
- Establishment of the NUEW.
- National Policy on Gender and Action Plan Framework (NPGAPF) makes women's economic and social empowerment as one of its priorities.
- National Gender Action Plan (NGAP) for Eritrea is to be implemented by ministries, local and international non-governmental organizations (NGOs), communities Universities, colleges, development partners, private sector, banks as coordinated by the NUEW.

b) Global commitments

- The State of Eritrea ratified the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW)in 1995.
- Eritrea has been working towards the implementation of the Beijing declaration of 1995. The Platform for Action and the Beijing declaration 1995 indicates that the productive capacity of women should be increased through access to capital, resources, credit, land, technology, information, technical assistance and training so as to raise their income and improve nutrition, education, health care and status within the household.

2. Legal rights and status of women in Eritrea

a) Customary laws

- Eritrea is a patriarchal society, which mainly assigns the role of caring for the family to women while men are mainly the breadwinners.
- The conflict between productive and reproductive roles has for a long time been one of the challenges of women in the country although the situation is improving after independence. women used to help their husbands in the farm but recently a number of them engage in farming activities themselves. A number of women have started working outside their homes and get income for the family, which has also changed the attitude of husbands towards women.

- In the project area women participate in all restoration and community-based activities on equal basis. This is because of the challenge of attitude of the community during the armed struggle and the current situation in the country where most men are doing their national service.
- In the project area women actively participate in the collection of firewood and restoration activities. They also noted that women are highly represented in the leadership of the community.
-

b) Formal legal

- The Eritrea Land Proclamation of 1994 was a milestone in improving women's right to land ownership. In 2009, based on the Land Proclamation a land reform process was carried out to change customary mode of land acquisition. Accordingly, eligible households including female-headed households (FHH) have been provided with a farmland which is about 0.6 ha per household. However, the Risti land tenure system is still common in the project area limiting women's entitlement to land through inheritance.
- Entrenched traditional attitudes, however, have been slowing women's access to land. The NUEW has made strong advocacy to change the attitude of the communities in this regard.
- *Labor law proclamation*: Article 41 (1) of the proclamation indicates that "An employer shall pay equal starting wages for the same type of work".

3. Gendered Division of Labor and Time Use

- 96% of the households consider raising children and elderly to be the burden of female.
- 77% of the respondents are of the opinion that fetching water is mainly the responsibility of female.
- Women predominantly participate in HH management as compared to their male counterparts.
- Such a situation will evidently limit women from being involved in project activities that will empower them and improves their livelihood.
- 71% indicated that males exclusively or predominantly participate in farming,
- Rearing livestock is an activity where both male and female households show significant participation,
- The limited involvement of women in Rora Habab in farming activities is also an area that deserves attention.As involvement in farming activities such as horticulture, crop production, beekeeping and so on, are potential sources of income to households, the current project needs to ensure involvement of women in farming activities to enhance their socio-economic situation.Furthermore, the current project needs to consider the involvement of women in the formal sector of the economy to ensure sustainable natural resource management that provides equal opportunities to improvement of the livelihood of the community.

4. Access and Control over Resources

- Irrespective of their gender, members of the communities in the project area perceive that they get different benefits such as food and nutrition, and income from the resources.
- This is an encouraging result as it enhances commitment of the communities to protect the natural resources.
- The study also reveals that fuel is perceived as a benefit by a significant member of the community. This attitude necessitates looking for alternative sources of energy such as ADHANET MOGOGO for the community to ensure sustainable resource management.
- The study shows that female respondents perception of the benefits they acquire from the natural resources is slightly better as compared to their male counterparts. This is an encouraging result that calls for considering involvement of women in activities of the project such as tree planting, terracing, beehive, horticulture, raising animals, development of micro dams and so on.
- Perception that the community members have equal access to land (85%), forest (73%) and capital (75%) is high.
- Most (80%) of the members of the community perceive that male have better access to livestock.
- Most (82%) are of the opinion that both have equal access to farming input.
- Even though all members of the communities have equal access to natural resources, the main customers of SMCP are women. Further, the NUEW have schemes used to improve the livelihood of women at the grass root level. Thus, women at the grass root level are in a better situation in relation to the access they have to finance.

- Further, it should be noted the labor law proclamation in the Eritrea provides equal employment opportunity to all citizens. This entails project activities related to the conservation of natural resources to consider recruitment and remuneration on equal basis irrespective of their gender.

5. Decision making

- The control and decision-making power of husbands over land is by far more than their corresponding wives despite the fact that the land proclamation provides equal opportunity.
- Enhancing the level of awareness of the community would reduce such anomalies.
- Survey results reveal that men have more control and decide over the livestock and capital of the households as well as selling crops and livestock as compared to female. Such control provides better economic power to men as compared to female.
- Thus, economic decisions are predominantly the role of men. Project activities need to take into consideration to redress this situation in order to empower women in the area.
- Survey results show that about 3/4 of the respondents indicate that household expenditure is equally the role of male and female or it is predominantly male.

Gender Action Plan (GAP)

This section presents the gender responsive elements of Rora Habab project, breaking down its gender related outcomes into concrete outputs and activities. It describes the role of the different stakeholders of the project in ensuring that men and women are provided with equal opportunities in the implementation of the project. The GAP proposes practical actions to address gender inequalities related to activities to be implemented in relation to promoting community-based sustainable and integrated natural resource management in Rora Habab Plateau. It also presents the resources and budget (about 3-5% of project value) needed to gender activities in the implementation of the Rora Habab project.

The gender action plan will be fully developed in consultation with the main stakeholders namely the MLWE, MoA, MEM and Sub-Zoba Nakfa administration. Due to time limitation the consulting team is presenting an indicative gender action plan for the purpose of informing the PRODOC.

Implementation Plan

The outcome of the project is "enhanced resilience of ecosystems and livelihoods through landscape regeneration and integrated watershed management in over 80,000 hectares" that takes into consideration the issue of gender. Achievement of the outcome requires involvement of all members of the community which have to be also beneficial from the designed interventions. Successful implementation of the project activities and achievement of the outputs entails involvement of all the stakeholders and the community at large. The major stakeholders include; the MoA, MLWE, MEM, Sub-Zoba administration, village administrations, NUEW, SMCP, and UNDP/GEF. Some of the activities will be implemented in the short-term where us others will be implemented in the long-term. The consulting team recommends establishment of a steering committee led by the MLWE to integrate efforts of the different stakeholders.

Proposed Activities

To improve the current situation of the natural resources in Rora Habab and achieve the project outputs the FGD and KII respondents recommended implementation of the following activities.

Output	Activities	Responsible	Period
Output 1. Water and soil fertility enhanced	1.1 Build micro dams and catchments	Sub-Zoba administration, MoA, MLWE, village leaders, and community	
	1.2 Build check dams	Sub-Zoba administration, MoA, MLWE, village leaders, and community	
	1.3 Introduce effective land use system that improves availability of soil fertility, plants, and ground water	Sub-Zoba administration, MLWE, MoA, village leaders and community	
	1.4 Provide extension services and farming inputs	MoA, MLWE and sub-Zoba administration	
	1.5 Terrace	Sub-Zoba administration, MoA, village leaders, and community	
Output 2. Livestock productivity enhanced	2.1 Separate grazing area	Forest authority, MoA, Sub-Zoba administration, and village leaders	
	2.2 Construct micro dams to be used as drinking water for livestock	MoA, MLWE, Sub-Zoba administration, and community	
	2.3 Provide extension services including veterinary services	MoA, Sub-Zoba administration	
	2.4 Provide better breed to the farmers	MoA, Sub-Zoba administration, and village leaders	
Output 3. Agro-Forestry restored	3.1 Plant Tree, and terrace mainly in **Bakla** (*Ketanit, Zagr & Shamote)*; **Maret** (*Rora keih, Beles, Mashelet & mountains of Maret)*; **Mo'o** (Mekemat); **Denden**: Abwedg (Teredab & Felhit, Etkrar) and Goreyto	MoA, Sub-Zoba administration, and village leaders, community	
	3.2 Build catchment area	MoA, Sub-Zoba administration, MLWE, village leaders, and community	
	3.3 Campaign on restoration of agro-forestry	Sub-Zoba administration, MoA, NUEW, NUEYS and village leaders	
	3.4 Enforce community-based laws on those that cut trees through planting	Forest Authority, Sub-Zoba administration, village leaders and community	
	3.5 Organize continuous reforestation and restoration programs	Sub-Zoba administration, MoA, and village leaders, community	
	3.6 Employ members of the communities for restoration programs	Sub-Zoba administration, and village leaders	
	4.1 Organize committee	MoA, Forest authority and village leaders	

Output	Activities	Responsible	Period
Output 4. Forest enclosures improved	4.2 Develop guidelines for forest enclosures at community level	Forest authority, sub-Zoba administration and village leaders	
	4.3 Safeguard enclosures through community participation	Forest authority, MoA, Sub-Zoba administration and village leaders	
	4.4 Campaign to enhance the level of awareness of the community		
Output 5. Alternative livelihood secured	5.1 Assess the need of the community and identify those that are eligible for support schemes	Sub-Zoba administration village leaders, NUEW, and MLHW	
	5.2 Support the community to start poultry and beehive keeping (*especially in Bakla and Maret as there are adequate forests*)	MoA, Sub-Zoba administration village leaders, NUEW, and SMCP	
	5.3 Support the community to establish small tourists attracting enterprises	MLHW, MoT, Sub-Zoba administration, village leaders, NUEW, NUEYS, and SMCP	
	5.4 Make available alternative source of energy (Adhanet Mogogo) for income generation and protection of the natural resources	MoA, MLHW, MEM, NUEW, Sub-Zoba administration and village leaders	
	5.5 Support community members to start irrigation farms (*horticulture and vegetable*)	MoA, Sub-Zoba administration, MLHW, village leaders and NUEW	
	5.6 Support farmers to form cooperatives and start modern beef and Milk production	MoA, Sub-Zoba administration, village leaders, and NUEYS	
	5.7 Make construction materials for houses such as cement, roofs etc. available	Sub-Zoba administration, Red Sea Trading Corporation and community	

Annex H: UNDP Risk Log – *Forthcoming*

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Enter a brief description of the risk *(In Atlas, use the Description field. **Note: This field cannot be modified after first data entry)***	When was the risk first identified *(In Atlas, select date. Note: date cannot be modified after initial entry)*	Environmental Financial Operational Organizational Political Regulatory Strategic Other Subcategories for each risk type should be consulted to understand each risk type (see Deliverable Description for more information) *(In Atlas, select from list)*	Describe the potential effect on the project if this risk were to occur Enter probability on a scale from 1 (low) to 5 (high) P = Enter impact on a scale from 1 (low) to 5 (high) I = *(in Atlas, use the Management Response box. Check "critical" if the impact and probability are high)*	What actions have been taken/will be taken to counter this risk *(in Atlas, use the Management Response box. This field can be modified at any time. Create separate boxes as necessary using "+", for instance to record updates at different times)*	Who has been appointed to keep an eye on this risk *(in Atlas, use the Management Response box)*	Who submitted the risk *(In Atlas, automatically recorded)*	When was the status of the risk last checked *(In Atlas, automatically recorded)*	e.g. dead, reducing, increasing, no change *(in Atlas, use the Management Response box)*
2			Environmental Financial Operational Organizational Political Regulatory Strategic Other	Text P = I =					

Annex I: Results of the capacity assessment of the project implementing partner and HACT micro assessment

Attached separately

Annex J: Additional agreements

N/A

Annex K: UNDP Project Quality Assurance Report

Nubian Ibex

Preliminary assessment and recommendations for Eritrea

Restoring degraded forest landscapes and promoting community-based sustainable and integrated natural resource management in the Rora Habab Plateau, Eritrea

Kevin Emslie
C4 EcoSolutions

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List of Acronyms

FWA	Forestry and Wildlife Authority
IUCN	International Union for the Conservation of Nature
MoA	Ministry of Agriculture
MoLWE	Ministry of Land Water and Environment
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-governmental organisation
TEK	Traditional Ecological Knowledge

Nubian ibex background

Description

One of only three caprines found in Africa[70], the Nubian ibex (*Capra Nubiana*; Figure 1) is considered a subspecies of the Alpine ibex (*Capra ibex*) but is treated as distinct[71]. The Nubian Ibex is a tan to greyish, mid-sized ungulate adapted to mountainous desert terrain, with prominent horns and black and white leg markings. Males have scimitar-shaped horns, dark beards and are larger and heavier than females. The flattened face of male horns has up to 30 large horizontal knobs, while the horns of females are short and slender with narrow growth rings and lacking knobs. Both sexes have a whitish belly, inner legs and buttocks, and short dark tails. During summer, the body fur is comprised of short tan guard hairs, which are replaced by brown to grey guard hairs with underfur in winter[72].

Figure 1. Nubian Ibex (male)[73].

Geographic range

Globally, the Nubian ibex occurs in Egypt east of the Nile River, north-eastern Sudan, northern Ethiopia and western Eritrea, Israel, western Jordan, scattered locations in western and central Saudi Arabia, parts of Yemen and southern Oman. The species is extinct in Lebanon in Syria. However, it has since been reintroduced into Syria (Figure 2)[74].

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[70] The other two being the Walia Ibex (*Capra Walie*) and the Barbary Sheep (*Ammotragus lervia*).

[71] Alkon PU. 2013. *Capra nubiana* Nubian Ibex, In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.

[72] *Ibid.*

[73] Source: https://www.pikiwiki.org.il/image/view/4287.

[74] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. *Capra nubiana. The IUCN Red List of Threatened Species 2008:* e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

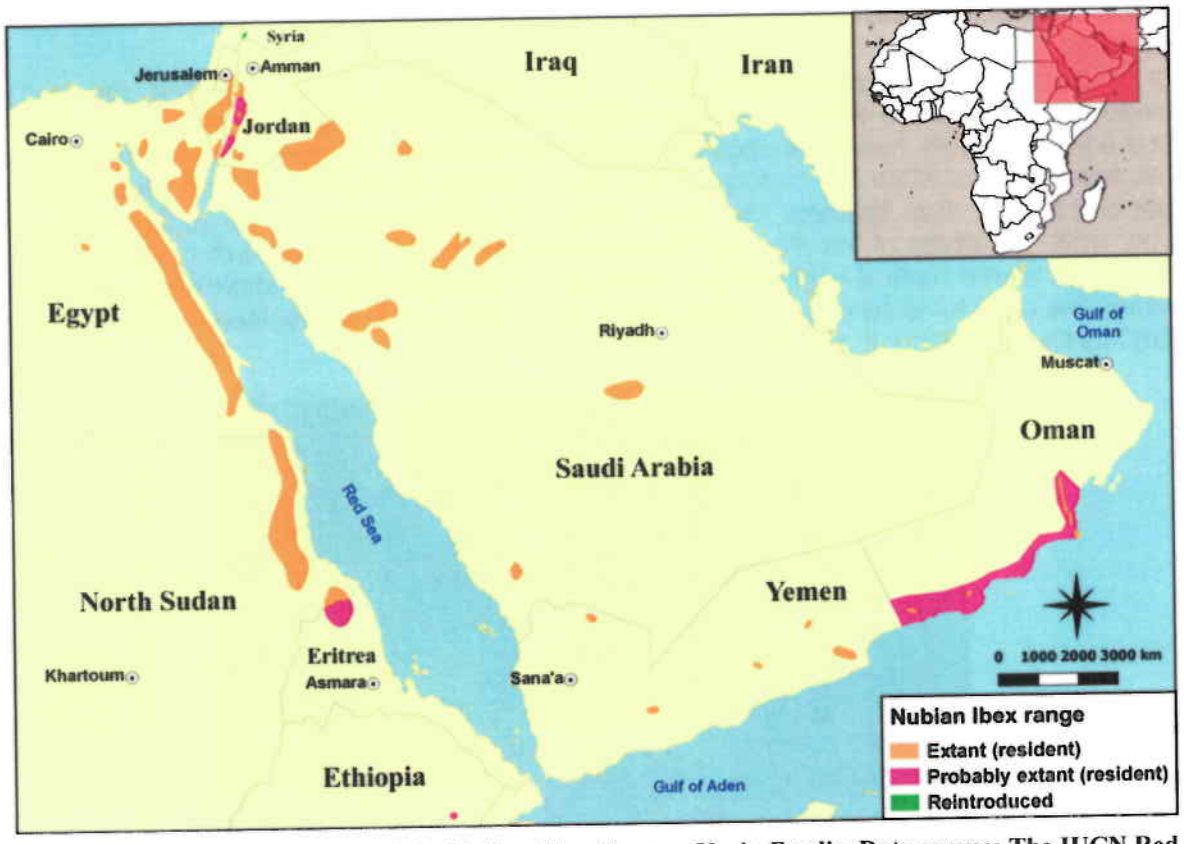

Figure 2. The geographic range of the Nubian Ibex. Source: Kevin Emslie. Data source: The IUCN Red List of Threatened Species[75].

Historically, the species had a wide range in north-east Africa, including east of the Nile River, Sinai, the Near East and the Arabian Peninsula. However, hunting and habitat encroachment have reduced population numbers in most of this original range[76]. Only small isolated populations of Nubian ibex are still present in Africa. These populations are found in the Eastern Desert and Red Sea Mountains of Egypt, and in the Red Sea hills of Sudan (Figure 2). Although no confirmed recent records of the species are available for Eritrea, Nubian Ibex has previously been recorded near the Sudan border, in the vicinity of Yob National Park[77]. In Ethiopia, Nubian ibexes were previously reported on the country's northern border[78], but the only recent record is an unconfirmed report in the east of the country near the Djibouti border[79] (Figure 2).

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[75] *Ibid.*

[76] Manilus N. 2001. Historical ecology and biogeography of the Nubian Ibex in Egypt. *Belgian Journal of Zoology*. 131: 159–172.

[77] Hillman JC & Yohannes H. 1997. Eritrea. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 26–27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[78] Yalden DW, Largen MJ & Kock D. 1984. Catalogue of the mammals of Ethiopia. 5. Artiodactyla. *Italian Journal of Zoology, N.S. Supplemento.* 19(4):67–221.

[79] Hillman JC, Hurni H & Nievergelt B. 1997. Ethiopia. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 27–30. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

Outside of Africa, the Nubian ibex occurs in Israel, Jordan, Oman, Yemen and Saudi Arabia. Although extinct in Lebanon and Syria, they have been reintroduced into the latter (Figure 2)[80,81,82]. Specifics for each country are summarised below[83].

- In Israel, the species occurs in the steep mountainous terrain of the eastern and southern areas, namely the Judean desert, Negev and Elat mountains[84].
- In Jordan, Nubian ibex is found in the remote parts of mountainous terrain from the north-eastern escarpment of the Dead Sea, south along the Rift Valley to Wadi Araba and further south-east in the mountains of Wadi Rum[85].
- Currently, the species' known distribution in Oman is fragmented, extending along the rugged coastline, south from the Huquf escarpment to the border with Yemen[86].
- Although data is limited Saudi Arabia, populations of Nubian ibex are known to occur in the western mountains of the Arabian shield, while smaller groups are present in the north, north-central and central regions of the country[87].
- Nubian ibex is believed to be extinct in Syria, apart from a population reintroduced in the Golan Heights[88].
- In Yemen, no recent distribution data is available. However, small populations still seem to exist in the remotest regions of the dry mountains of the Hadramawt in the east[89].

Habitat

Nubian ibexes are generally found in semi-arid to arid areas comprising mountains, cliffs, hills and associated plateaux, canyons and wadis. The vegetation in these areas includes annual forbs and grasses dependent on seasonal rainfall, geophytes, woody shrubs and stands of *Acacia*, *Populus* and *Pistacia* spp. trees. Dense herbaceous vegetation surrounding runoff sites and springs is a favoured foraging habitat of the species. Steep slopes provide vital escape routes, especially for females and young. Freshwater sources such as springs are an essential habitat

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[80] Shackleton DM (ed). 1997. *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae.* IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[81] Grubb P. 2005 Artiodactyla. In: Wilson DE and Reeder DM (eds), *Mammal Species of the World. A taxonomic and Geographic Reference (3rd ed)*, pp. 637–722. John Hopkins University Press, Baltimore, USA.

[82] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. *Capra nubiana. The IUCN Red List of Threatened Species 2008:* e.T3796A10084254, http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[83] Shackleton DM (ed). 1997. *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae.* IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[84] Shkedy Y & Saltz D. 2000. Dispersal patterns and fragmentation of Nubian Ibex and hyrax populations in Israel. *Conservation Biology*. 14: 200–206.

[85] Hays C & Bandak N. 1997. Jordan. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 60–63. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[86] Daly RH, Gallagher MD, Munton PN & Tear TH. 1997. Oman. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 65–70. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[87] Habibi K & Tawany H. 1997. Saudi Arabia. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 70–73. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[88] Serhal A. 1997. Syria. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 73–74. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[89] Shackleton DM. 1997. Yemen. In: D. M. Shackleton (ed.), Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae, pp. 75-76. IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

requirement of Nubian ibex[90]. Habitat types suitable for Nubian ibex occupation and important for their conservation within their range include: i) subtropical/tropical dry shrubland; ii) rocky areas (for example, inland cliffs and mountain peaks); iii) hot deserts; and iv) temperate deserts[91,92].

Adaptations

A stocky body and short legs allow Nubian ibexes to negotiate rugged terrain. This adaptation allows them to escape threats by quickly ascending or descending steep slopes. Rapid responses to threats are also enhanced by good distance vision and their social nature (constant presence of several other individuals)[93]. Regarding environmental conditions, during hot summers, Nubian ibex are usually active in the early morning and from sunset into the evening. Between those periods, they spend their time resting in the shade. A low metabolic rate potentially allows the species to limit their energy requirements in its arid habitat[94]. In cool winters, the species spends most of its time on sunlit slopes, being primarily active during daylight[95].

Diet

Nubian ibexes eat a variety of herbaceous and woody plants. Within in their range, diet is dependent on locality and season. For example, in Egypt, woody species including *Acacia raddiana*, *Lindenbergia sinaica*, *Lycium shawii*, *Capparis spinosa* and *Ficus pseudosycomorous* are known to be consumed[96]. Herbaceous species eaten in Egypt are *Phragmites australis*, *Imperata cylindrica*, *Juncus rigida*, *Alhagi manifera* and the roots of *Lotus arabicus*. In Sinai, perennial plants consumed in winter include *Globularia abarica*, *Helianthum lipii*, *Ephedra foliate*, *Zilla spinosa*, *Thymus decussatus*, *Gymnocarpus decander* and *Echinops glabarrimus*[97]. In Israel, populations of protected Nubian ibex have been observed eating landscape plantings and crops[98].

Social behaviour and population structure

Regarded as a social species, Nubian ibex mainly occur in female-based groups that include young and male juveniles (up to the age of three years). In healthy populations, these groups can average 20 or more individuals[99]. Additional group types include those consisting of: i) males

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[90] Alkon PU. 2013. *Capra nubiana* Nubian Ibex. In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.
[91] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254.
http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018
[92] Habitats classified according to the IUCN Red List's classification schemes. Available at: http://www.iucnredlist.org/technical-documents/classification-schemes.
[93] Alkon PU. 2013. *Capra nubiana* Nubian Ibex. In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.
[94] Chosniak I, Arnon H & Shkolnik A. 1984. Digestive efficiency in a wild goat, the Nubian ibex. Canadian Journal of Animal Science, 64: 160–162.
[95] Baharav D & Meiboom U. 1982. Winter thermoregulatory behaviour of the Nubian ibex *Capra ibex nubiana* in the Sinai Desert. *Journal of Arid Environments*, 5: 295–298.
[96] Osborn DJ & Helmy I. 1980. The contemporary land mammals of Egypt (including Sinai). *Fieldiana Zoology*, n.s. 5, XIX: 579pp.
[97] Baharav D & Meiboom U. 1981. The status of Nubian ibex *Capra ibex nubiana* in the Sinai Desert. Biological Conservation, 20:91–97.
[98] Alkon PU. 2013. *Capra nubiana* Nubian Ibex. In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.
[99] Gross JE, Alkon PU & Demment MW. 1995. Grouping patterns and spatial segregation by Nubian ibex. *Journal of Arid Environments*, 30: 423–439.

between the ages of four and six years – transitory associations of six or more individuals; and ii) mature males (seven years or older)[100]. Group sizes are affected by human activity, being considerably smaller in areas where their habitats are degraded, and hunting pressure is intense. For example, female groups from hunted populations in Egypt and Saudi Arabia averaged less than six individuals[101,102].

Within female groups, sexual maturity is reached by the age of two years. After a gestation period of ~20 weeks, females give birth in spring (March to April) to one to two offspring. In general, sex ratios are even at birth, but adult females usually outnumber males[103]. Life expectancy of wild Nubian ibexes seldom exceeds 12 years of age, even in protected populations. Annual changes in protected populations are likely associated with changes in environmental conditions (such as water availability) and density-dependent mechanisms – including food supply[104]. Furthermore, during the rut[105], breeding males disperse far distances – greater than 60 km in some instances – to join distant female-based groups[106].

Threats

The main threats to the Nubian ibex across their range include: i) competition with livestock, camels and feral donkey[107]; ii) hunting and poaching; and iii) habitat loss and degradation[108]. Competition is predominantly over water and food. In Egypt, for example, the availability and distribution of waterholes are likely to influence the health and size of Nubian ibex populations annually[109].

In terms of hunting and poaching, poaching (subsistence) of the species is common in Egypt and Sudan, contributing to the local extinction of Nubian ibex from parts of its range in Egypt[110]. While hunting of Nubian ibex is banned in Saudi Arabia and Israel, poaching is more difficult to control, particularly in remote areas[111]. The species is also threatened by habitat loss and degradation, especially through the extension of roads, agricultural encroachment (livestock and cropland) and

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[100] Alkon PU. 2013. *Capra nubiana* Nubian Ibex, In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.
[101] Osborn DJ & Helmy I. 1980. The contemporary land mammals of Egypt (including Sinai). *Fieldiana Zoology*, n.s. 5, XIX: 579pp.
[102] Habibi K & Grainger J. 1990. Distribution and status of Nubian ibex in Saudi Arabia. *Oryx*, 24: 138–142.
[103] Habibi K. 1994. *The Desert Ibex. Life History, Ecology and Behaviour of the Nubian Ibex in Saudi Arabia*. National Commission for Wildlife and Development (Saudi Arabia) and Immel Publishing Co., London.
[104] Alkon PU. 2013. *Capra nubiana* Nubian Ibex, In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.
[105] An annual period (six to eight weeks in autumn) of sexual activity during which the males fight each other for access to the females.
[106] Shkedy Y & Saltz D. 2000. Characterizing core and corridor use by Nubian ibex in the Negev Desert, Israel. *Conservation Biology*, 14: 200–206.
[107] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.
[108] *Ibid.*
[109] Amer M. 1997. Egypt. In: D. M. Shackleton (ed.), Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae, pp. 75-76. IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.
[110] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.
[111] Shackleton DM (ed). 1997. *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

other development pressures in and around its remaining refuges[112]. This threat has resulted in the fragmentation, displacement and isolation of populations, which is detrimental to dispersal and genetic diversity[113]. A less serious threat is predation. Throughout its African range, the leopard (*Panthera pardus*) is the only likely predator of Nubian ibex, while in the Arabian Peninsula they may also fall prey to grey wolves (*Canis lupus*)[114].

Regarding climate change, Nubian ibexes lack considerable physiological adaptations for water conservation or thermoregulation[115]. Although they do obtain preformed water from plants, the availability of non-saline drinking water (springs and other open freshwater sources) is a habitat requirement[116]. Consequently, Nubian ibexes are threatened by droughts, the frequency and intensity of which are expected to increase across their range under future climate change scenarios[117]. (More information on regional climate change projections and trends is presented in Section 2 of the project document). A summary of threats (and associated stresses) to the Nubian ibex is provided in Table 1[118].

Table 1. Threats and associated stresses impacting the Nubian ibex.

Threat	Associated stresses[119]
2.3 Livestock farming and ranching 2.3.1 Nomadic grazing 2.3.2 Smallholder grazing, ranching or farming	1.1 Ecosystem conversion 1.2 Ecosystem degradation
4.1 Roads and railroads	1.1 Ecosystem conversion 1.2 Ecosystem degradation
5.1 Hunting and trapping terrestrial animals 5.1.1 Intentional use (species is the target)	2.1 Species mortality
6.1 Human recreational activities	2.2 Species disturbance
8. Problematic native species	2.3 Indirect species effects 2.3.2 Competition
9.3 Agricultural and forestry effluents 9.3.4 Type unknown/unrecorded	1.2 Ecosystem degradation
11.2 Droughts	1.2 Ecosystem degradation

Abundance

While there is a lack of data for certain areas of Nubian ibex's geographical range (Figure 2), their population has been estimated to comprise less than 2,500 mature individuals[120]. The majority of the current population is located in Israel, numbering ~1,500 individuals[121]. Population estimates

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[112] *Ibid.*

[113] *Ibid.*

[114] Alkon PU. 2013. *Capra nubiana* Nubian Ibex, In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.

[115] *Ibid.*

[116] Shkolnik A, Choshniak I & Maltz E. 1979. The role of the ruminant's digestive tract as a water reservoir. In: Ruckebusch Y & Thirend P (eds), *Digestive Physiology and Metabolism in Ruminants*. MTP Press, Lancaster.

[117] World Bank. Climate change Knowledge Portal. Available at: http://sdwebx.worldbank.org/climateportal/index.cfm?page=sectoral_climate_statistics&ThisRegion=Africa&ThisCcode=ERI.

[118] Threats classified according to the IUCN Red List's classification schemes. http://www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme.

[119] Stresses classified according to the IUCN Red List's classification schemes. http://www.iucnredlist.org/technical-documents/classification-schemes/stresses-classification-scheme.

[120] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[121] Alkon PU. 1997. Israel. In: D. M. Shackleton (ed.), Wild sheep and goats and their relatives.

are also available for Jordan (≥200), Egypt (≥200) and Saudi Arabia (≥400). There are no population estimates available for Eritrea, Ethiopia, Oman, Sudan, Syria and Yemen More accurate and up to date estimations require more data on population trends in the past, present and future. Currently, the global population is classified as decreasing[122].

Nubian ibex conservation and management

Baselineinformation

The 2008 International Union for the Conservation of Nature (IUCN) Red List assessment lists Nubian ibex as vulnerable under C1 and C2a(i)[123,124,125]. National conservation statuses of Nubian ibex are presented in Table 2 along with a summary baseline information on conservation and management across its geographical range. Countries, such as Egypt and Israel, where they are legally protected, present in protected areas and their hunting is banned (Table 2), Nubian ibex populations are stable or thriving[126,127]. Nubian ibexes respond well to effective protection. In Israel, for example, within a generation, recently protected Nubian ibexes decreased their flight distances from humans, returned to abandoned range and formed larger groups. Furthermore, after ~40 years of protection in Israel, populations of the species have become increasingly tolerant of humans[128].

Table 2. Summary of global Nubian ibex conservation and management[129,130,131].

Country	Conservation status	Protected	Hunting	Protected areas where present
Egypt	Indeterminate	Yes	Banned	• Gebel Elba Conservation Area (shared with Sudan) • Assuit University Protected Area • Jabal Musa and Jabal Katrina Wildlife Reserve

Status survey and conservation action plan for Caprinae, pp. 75-76. IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[122] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[123] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[124] Classification criteria and descriptions available at: http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3097/redlist_cats_crit_en.pdf.

[125] Population of <10,000 mature individuals. C1 – An observed, estimated or projected continuing decline of at least (up to a maximum of 100 years in the future): 10% in three generations. C2a(i) – An observed, estimated, projected or inferred continuing decline and number of mature individuals in each subpopulation is ≤1,000.

[126] *Ibid.*

[127] Alkon PU. 2013. *Capra nubiana* Nubian Ibex, In: Kingdon J and Hoffman M (eds), *Mammals of Africa Volume VI: Pigs, Hippopotamuses, Chevrotain, Giraffes, Deer and Bovids*. Bloomsbury Publishing Plc, London.

[128] *Ibid.*

[129] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[130] Shackleton DM (ed). 1997. *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[131] Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).

Country	Conservation status	Protected	Hunting	Protected areas where present
Sudan	Indeterminate (probably vulnerable)	No	Permitted (special permit required)	• Erkawit and Sinkat Sanctuaries • Tokar Game Reserve • Gebel Elba Conservation Area (shared with Egypt)
Eritrea	Endangered	Yes	Banned	• Yob Wildlife Reserve (thought to be present)
Israel	Vulnerable	Yes	Banned	• 15 (official and designated) including: o Avdat Canyon National Park; and o En Gedi Nature Reserve.
Jordan	Endangered	Yes	Banned	• Wadi Mujib Wildlife Reserve • Dana Wildlife Reserve • Wadi Rum Reserve • Jebel Masadi Wildlife Reserve
Oman	Indeterminate	Yes	Banned	• None
Saudi Arabia	Vulnerable	Yes	Banned	• At Tubayq Reserve • Ibex Reserve
Syria	Extinct (reintroduced)	No	No	• None
Yemen	Indeterminate	No	No	• Jabal al Ara'is Reserve

Best practices

Apart from legal protection and their presence within protected areas, there are several other best practices related to the conservation and management of Nubian ibex across their range. An overview of these best practices is presented below.

- Recent and current management of Nubian ibex in Israel involves annual, day-long ground surveys in all main national ranges of the species, protection of habitats and scientific research[132]. In addition, a management plan has been developed for Avdat Canyon National Park, which supports a large population of Nubian ibex in the northern Negev highlands[133].
- Corridors[134] have been identified as an essential part of Nubian ibex conservation efforts in Israel. The presence of corridors (≥60 km in length) within the natural habitat of the species allows them (especially individual males) to make use of steeper terrain for cover and protection while travelling between their core areas[135].
- In July 1989, the San Diego Wild Animal Park sent 22 juvenile Nubian ibexes to Jordan for reintroduction. These animals were initially kept in a 0.25–0.4 km^2 enclosure on the slopes of Wadi Mujib. Successful reproduction resulted in 34 individuals by 1992 and, subsequently, 92 individuals in 1995 – 68 adults and 24 juveniles. Jordanian authorities started to release

[132] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[133] Ayal Y. 1992. Biological and ecological components of En Avdat National Park and their conservation: management recommendations. Report to the National Parks Authority, Mitrani Centre for Desert Ecology, Blaustein Institute of Desert Research, Gen-Gurion University.

[134] A linear landscape that provides for movement between habitat patches but not necessarily for reproduction. Rosenberg DK, Noon BR & Meslow EC. 1997. Biological corridors: form, function and efficacy. *BioScience*, 47: 677–687.

[135] Shkedy Y & Saltz D. 2000. Characterising core and corridor use by Nubian ibex in the Negev Desert, Israel. *Conservation Biology*, 14(1): 200–206.

surplus individuals into the Wadi Mujib Nature Reserve in 1998 and continued to do so until 2006 when the population was deemed to be stable at ~200 individuals, and the breeding/reintroduction programme was terminated[136].

- In Oman, although not occurring in protected areas, Nubian ibex are protected by guards of the Arabian Oryx Re-introduction Project based at Yalooni in the Central Region. Furthermore, conservation has been embraced and poaching minimised by Harasis tribes located around the Huqf escarpment[137].

Nubian Ibex in Eritrea

Historical information

Historically, it is believed that there were numerous scattered, isolated populations of Nubian ibex across northern Eritrea[138]. It is likely that most of these populations were located in the arid, northern part of the central highlands along the Sudanese border (Figure 2). However, an uncorroborated report from 1968 infers that there were two distinct Nubian ibex areas in the north of the country[139]. There are no published studies are focusing on Nubian ibex in Eritrea.

Before independence in 1993, the Ethiopian Wildlife Conservation Organisation of the Ministry of Natural Resources Development and Environmental Protection was responsible for wildlife legislation in Eritrea. Under this organisation, Eritreans were allowed to live and farm – crops and livestock – in protected areas. Furthermore, hunting by non-residents in Controlled Hunting Areas was only allowed if they were in possession of a special permit. General hunting permits were issued for hunting outside of protected areas[140].

The Yob Reserve (~2,700 km^2; Figure 3) was legally established in 1959 under the British post-World War Two administration[141], mainly for the conservation of Nubian ibex and other desert wildlife species. However, no formal of the reserve took place, and there is limited information available on the area since 1959. Available information (old maps) indicates that a Nubian ibex hunting camp was erected in the hills close by to Yob Reserve. This suggests that numbers of the species in the area were once sufficient to make hunting them worthwhile. Nubian ibex was never recorded in either of the other two protected areas established in Eritrea in 1959, namely the Nakfa and Gash-Setit Wildlife Reserves (Figure 3)[142].

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[136] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[137] *Ibid.*

[138] Yalden DW, Largen MJ & Kock D. 1984. Catalogue of the mammals of Ethiopia. 5. Artiodactyla. *Italian Journal of Zoology, N.S. Supplemento.* 19(4):67–221.

[139] Hillman JC & Yohannes H. 1997. Eritrea. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 26–27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[140] IUCN. 1987. IUCN Directory of Afrotropical Protected Areas. IUCN, Gland, Switzerland and Cambridge.

[141] Gazetta Eritrea No. 4, p. 31, 16 March 1959.

[142] Hillman JC & Yohannes H. 1997. Eritrea. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 26-27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

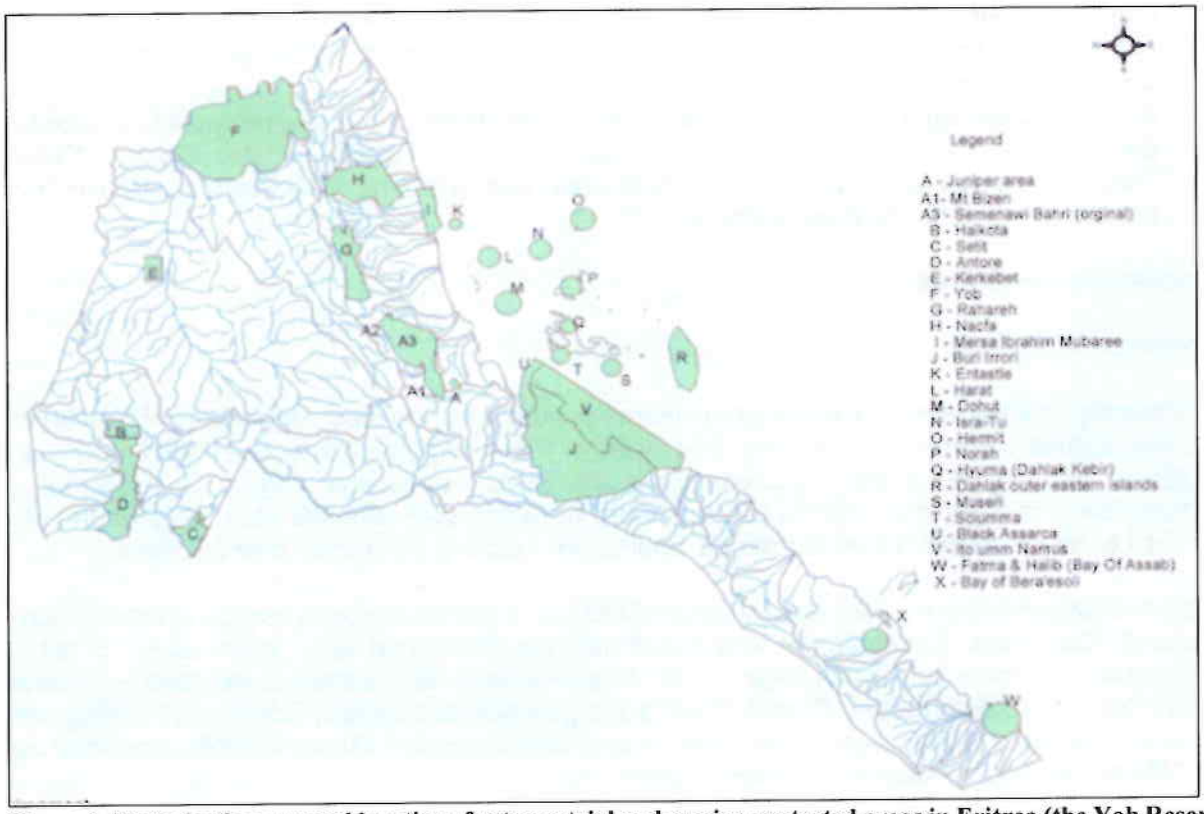

Figure 3. Historically proposed locations for terrestrial and marine protected areas in Eritrea (the Yob Reserve is in the far north of the country, indicated by the letter F)[143].

Recent and *current information*

Little is known about the current status of Nubian ibex or its status since Eritrea's independence in 1993. As a result, there are no population estimates available for the country[144,145]. Despite the lack of information, Nubian ibex in Eritrea is listed as endangered under C2a(i)[146] according to IUCN Red List criteria[147,148].

Recent accounts and observations

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[143]FAO. 1997. Technical Assistance Programme pre-investment study Eritrea.

[144] Hillman JC & Yohannes H. 1997. Eritrea. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 26-27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[145] Alkon PU, Harding L, Jdeidi T, Masseti M, Nader I, de Smet K, Cuzin F & Saltz D. 2008. Capra nubiana. The IUCN Red List of Threatened Species 2008: e.T3796A10084254. http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T3796A10084254.en. Accessed on 22 January 2018.

[146] Population of ≤250 mature individuals. C2a(i) – An observed, estimated, projected or inferred continuing decline and number of mature individuals in each subpopulation is ≤250.

[147] Classification criteria and descriptions available at: http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3097/redlist_cats_crit_en.pdf.

[148] Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).

Although the area set aside for the establishment of the Yob Reserve was believed to contain the species, there is limited recent evidence to suggest that Nubian ibex are still present[149]. However, a recent field assessment confirmed the presence of the species in the Kerkebet area of Zoba Anseba in the north-west of Eritrea[150]. The Kerkebet area is situated less than 100 km to the south-west of Yob Wildlife Reserve.

Regarding the presence of Nubian ibex within the implementation area of the proposed project (Rora Habab Plateau in the Nakfa sub-Zoba), fierce fighting and landscape degradation in the area during the 30-year liberation war prior to independence is believed to have led to the local extinction of the species – as well as other wildlife[151]. Local communities confirmed the absence of Nubian ibex within the project area during consultations conducted by national consultants during the PPG phase of the proposed project. However, these consultations did reveal that Nubian ibex are present in the Adobeha valley, which is located on the northwestern boundary of the project area[152].

Also located on the northwestern boundary of the Rora Habab Plateau is the Zara Mine Project[153]. Between 2008 and 2010 ground-based (point observations and vehicle and foot transect) wildlife surveys confirmed the presence of Nubian ibex in the mountainous terrain of the Koka Valley, which is located on the boundary of the Zara Mine Project area. During these surveys, a group of five Nubian ibex were observed browsing in the mountainous habitat[154]. In addition, six groups of Nubian ibexes were spotted on the outskirts of the Koka Valley during an aerial survey in December 2011[155]. Based on the data from these surveys, at least 40 Nubian ibexes are present in the mountainous terrain of the Koka Valley near to the Zara Mine – based on a minimum viable group size of five to six individuals.

While the presence of Nubian ibex in Eritrea has been confirmed by recent reports and accounts such as those mentioned above, there is still inadequate information to inform an accurate population estimate for the entire country.

Initiatives

There are no ongoing initiatives in Eritrea focussing primarily on the conservation of Nubian ibex. A national conservation plan for the species was proposed in the country's NBSAP (see Section 2.2.3 below). However, this plan has not yet been implemented. Additionally, the FWA has proposed the establishment of a protected area that would include the Adobeha Valley (where

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[149] Hillman JC & Yohannes H. 1997. Eritrea. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 26–27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[150] Ministry of Land, Water and Environment, Department of Environment. 2014. The 5th National Report on the Implementation of the UNCBD.

[151] Hillman JC & Yohannes H. 1997. Eritrea. In: Shackleton DM (ed), *Wild sheep and goats and their relatives. Status survey and conservation action plan for Caprinae*, pp. 26–27. IUCN, IUCN/SSC Caprinae Specialist Group, Gland, Switzerland and Cambridge, UK.

[152] Debretsion Y. 2018. Summary and findings of FGD and field assessment for the PPG phase of the proposed "Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Nakfa sub-Zoba, Northern Red Sea Region of Eritrea" project.

[153] Under Sub-Sahara Gold Corporation and Chalice Gold Mines.

[154] GREDMCO. 2010. Wildlife Survey Report of Zara Mine Project Area. Sub-Sahara Gold Corporation/Chalice Gold Mines.

[155] GREDMCO. 2012. Wildlife and Habitat Management Plan for the Zara Mine Project. Sub-Sahara Gold Corporation/Chalice Gold Mines.

Nubian ibex are reported to exist) and Hager Mountains. The proposal highlights the necessity of this protected area for the conservation of threatened and endangered species, including Nubian ibex, greater kudu (*Tragelaphus strepsiceros*) and warthog (*Phacochoerus africanus*)[156].

National policies and plans linked to Nubian ibex conservation

National Biodiversity Strategy and Action Plan for Eritrea (NBSAP, 2014–2020)

NBSAPs are the principal instruments for implementing the Convention on Biological Diversity (CBD) at the national level. The CBD requires countries to prepare a national biodiversity strategy and to ensure that this strategy is mainstreamed into the planning and activities of all those sectors whose activities can have an impact (positive or negative) on biodiversity[157]. The development of a NBSAPis aligned with Aichi Biodiversity Target 17, which states that: "by 2015, each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan"[158].

Eritrea's NBSAP focuses on merging and integrating biodiversity conservation targets and sustainable use of natural resources into sectoral policies. Protection of the Nubian ibex in Eritrea is specifically covered under Target 12 of NBSAP's Strategic Goal C: "Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity". Target 12 states that by 2020, the extinction of threatened species has been prevented and the conservations statuses of those most threatened have been improved, with declining trends significantly reduced[159]. This target will also ensure the conservation of these species (including Nubian ibex) through effective management and the development of an action plan[160]. A plan for the conservation of Nubian ibex in Eritrea is mapped out under Target 12 in the results framework of NBSAP. This plan is presented in Table 3 below.

Table 3. Proposed plan for the conservation of Nubian ibex in Eritrea[161].

12.3. Conservation of Nubian ibex				
Priority actions	**Timeframe (baseline 2014)**	**Performance indicators**	**Implementing institutions**	**Cost (US$)**
12.3.1 Conduct preliminary surveys to determine the status and distributions of Nubian ibex	Phase 1 2016	12.3.1.1. Number of Nubian ibex observed, and area covered during surveys	MoLG, Ministry of Land Water and Environment (MoLWE), Forestry and Wildlife Authority (FWA), Ministry of Agriculture (MoA), Anseba local	50,000

[156] Debretsion Y. 2018. Summary and findings of FGD and field assessment for the PPG phase of the proposed "Restoring degraded forest landscapes and promoting community-based, sustainable and integrated natural resource management in the Rora Habab Plateau, Nakfa sub-Zoba, Northern Red Sea Region of Eritrea" project.
[157] Source: https://www.cbd.int/nbsap/.
[158] Available at: https://www.cbd.int/sp/targets/.
[159] NBSAP's goals and targets are derived from the Aichi Biodiversity Strategic Goals and Targets.
[160] Ministry of Land, Water and Environment, Department of Environment. 2014. Revised National Biodiversity Strategy and Action Plan for Eritrea (2014–2020).
[161] Ibid.

12.3. Conservation of Nubian ibex				
			government, and local communities	
12.3.2. Prepare questionnaire to investigate the attitude of the community in wildlife conservation	Phase 1 2016	12.3.2.1. Report prepared	MoLG, MoA, Anseba local government, FWA and MoLWE	40,000
12.3.3. Sectoral assessment	Phase 2 2017–2018	12.3.4.1. Assessment reports	MoLG, MoA, Anseba local government, FWA and MoLWE	25,000
12.3.4. Mapping	Phase 2 2017–2018	12.3.4.1. Maps developed	MoLG, MoA, Anseba local government, FWA and MoLWE	10,000
12.3.6. Gazettement of protected areas for Nubian ibex and development of management plans	2018	12.3.6.1. Gazettement of protected areas for Nubian ibex and management plan developed	MoLG, MoLWE, FWA MoA, and Anseba local government,	25,000
Total				**150,000**

National Tourism Development Plan (2000-2020)

This plan contains the Tourism Development Policy and Strategy for Eritrea, which provides policy directives to address potential impacts of tourism on the environment including biological diversity. The directives that are strictly linked to biodiversity (particularly the conservation of the Nubian ibex) are summarised below.

- Tourism needs to be developed in a manner that encourages conservation and enhancement of the natural environment, especially the protection of scenic areas, watersheds, ecosystems, biodiversity, as well as the expansion of forests and wildlife populations.
- Tourism needs to encourage the involvement of local communities in conservation programmes that are linked to tourism.
- Infrastructure developed through tourism needs to be environmentally friendly.

Legislative and regulatory framework linked to Nubian ibex conservation

Land Proclamation No.58/1994

This proclamation grants the government of Eritrea the ownership of all land in the country, eliminating the old village or family ownership systems (Article 3). Article 50 of the proclamation legally gives the government the right to expropriate land with appropriate compensation for a wide range of national reconstruction projects, including all land, forestry and rangeland conservation projects.

In elaborating the implementation of Proclamation 58/1994, the government introduced Legal Notice No. 31/1997, which mandates the Ministry of Land, Water and Environment (MoLWE), in

collaboration with other ministries, to prepare a land use and area development plan. According to such plans, agricultural lands, particularly those to be reserved for irrigation, protected areas and national parks, areas for afforestation programs, mining areas are to be identified. No Land Use and Area Development Plan has been developed for the project area on the Rora Haba Plateau. Consequently, there are no plans for the establishment of a protected area within the proposed project's implementation area.

The Forestry and Wildlife Conservation and Development Proclamation No.155/2006

This proclamation, in addition to the regulations for the issuance of forestry permits (Legal Notice 111/2006) and wildlife permits (Legal Notice 112/2006) provides the framework for the conservation and development of forests and wildlife resources in Eritrea. The proclamation contains particular relevance to conservation of Nubian ibex, including that described below.

- Article 4 mandates the MoA to implement the proclamation, including the: i) establishment and management protected areas for the conservation of biodiversity; ii) identification of endangered and other indigenous tree and wildlife species which may require specific conservation programmes and establish such programmes; iii) enforcement of the proclamation, by establishing a unit for the protection of forestry and wildlife and appointing enforcement officers in accordance with it; and iv) cooperation with other relevant ministries and non-governmental organisations (NGO) to strengthen the capacity of staff through the provision of adequate training and equipment.
- Article 5 mandates the establishment of a Forestry and Wildlife Advisory Board[162], whose members shall represent the public and private sector involved in forestry and wildlife matters in Eritrea, including relevant ministries, local administrations, NGOs involved in conservation and scientific institutions.
- Article 9 mandates the MoA to monitor the state of wildlife and habitats in Eritrea and conduct surveys of each species (including Nubian ibex) as may be necessary for purposes of conservation and sustainable management of wildlife, in consultation with board established under Article 5 and other relevant ministries. The surveys shall be kept under constant review and updated as necessary.
- Article 10 mandates the MoA to adopt a national action plan[163] for forests and wildlife in Eritrea, informed by *inter alia* the wildlife surveys referred to in Article 9. Under the action plan, the MoA shall: i) indicate species of wildlife (such as Nubian ibex) for which it is appropriate to conduct surveys in accordance with Article 9 or require particular conservation measures.
- Article 11 mandates the MoA to – subject to the contents of the national action plan – adopt a management plan for *inter alia* every protected area.
- Article 12 mandates that every management plan shall *inter alia*: i) describe the area and its flora and fauna resources; ii) state the objectives to be achieved in the management of the area; and iii) set out measures to facilitate the participation of local residents and other stakeholders in the management of the area.
- Article 16 mandates that where any area is particularly appropriate or significant for purposes of conservation of biodiversity, sites of special scientific interest or preservation of landscapes or recreation, the MoA may declare the area to be a protected area.

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[162] Currently known as the Forestry and Wildlife Authority (FWA).
[163] To be reviewed and updated at least every five years.

- Article 25 prohibits any person from hunting, taking, disturbing or being found in the possession of any wildlife or parts thereof, unless authorised in accordance with the proclamation.
- Article 26 mandates that the MoA may occasionally authorise hunting of specified species of wildlife, subject to conditions as may be prescribed. Such authorisation is valid provided that hunting does not affect the conservation and sustainable management of wildlife and ecosystems in light of the contents of surveys referred to in Article 9 and other adequate scientific information.

In addition to the articles of the proclamation, Article 3 of the Regulations for the Issuance of Wildlife Permits (Legal Notice 112/2006) states that no person shall, for any purpose, hunt wildlife:

- by using firearms, traps or fire glaring light;
- by using any poisonous substances,
- during night time,
- by using hunting dogs; and
- by using any vehicle.

Article 4 of the legal notice states that a wildlife permit is required to take wildlife for: i) scientific, educational and cultural purposes; ii) the purpose of wildlife farming; or d) the export/import wildlife or wildlife products.

The Eritrean Environmental Protection, Management and Rehabilitation Framework (Proclamation No.179/2017)

This proclamation establishes the foundation of environmental management and protection laws and provides the institutions and legal instruments for their implementation and enforcement. Article 5, provides the principles of environmental management by emphasising the need for an integrated management approach, streamlining environmental protection into sustainable development planning, human wellbeing, sustainable use of natural resources and public participation. The proclamation also states that a continual effort shall be made to maintain the diversity and function of ecological systems through the: i) conservation of sensitive and threatened ecosystems and endangered species (Article 25c); and ii) scientifically informed reintroduction of lost indigenous flora and fauna – such as Nubian ibex (Article 25d). In addition, the proclamation empowers MoLWE to designate any area as a national protected area for the purpose of better management of one or more natural resources and their ecosystems. It also empowers zoba administrations and village councils to designate enclosures for purposes of preventing land degradation, preserving vegetation cover and for the sustainable use of the natural resources (Article 27).

Recommendations

The protection and conservation of Nubian ibex is covered in several national policies, plans and legislation (see Section 2.2.4 above). However, much of this is yet to be implemented or enforced and has not been included in sub-national policies, plans and legislation. Recommendations for the strengthening of the conservation and protection of Nubian ibex in Eritrea are provided below.

Baseline recommendations

- Detailed aerial and ground surveys should be carried out across northern Eritrea – including the project area – to determine the distribution and approximate population size of Nubian ibex in the country. Such surveys would build on those (aerial and ground; see Section 2.2.1)

conducted in the Zara Mine Project area (Koka Valley), as well as assist in the implementation of NBSAP's proposed Nubian ibex conservation plan. Recommended survey methods include i) an abundance survey (using distance sampling methods such as line transects in open areas and fixed point counts in mountainous terrain); ii) camera trapping (to determine abundance, occupancy and habitat use); iii) aerial or unmanned aerial vehicle (UAV) surveys to determine abundance; and iv) the use of tracks and signs, with a specific focus on using traditional ecological knowledge – (TEK). Such surveys would confirm the absence or presence of Nubian ibex within the project area and would be in alignment with Article 9 of proclamation No.155/2006.

- Once the status and distribution of Nubian ibex in Eritrea have been assessed, environmental officers should be assigned to monitor and protect the species (and other endangered and priority species found within its range) in accordance with Article 4 of Proclamation No.155/2006. Monitoring would include collecting data on *inter alia*: i) populations trends (including births, mortalities and sex ratios); ii) tracking habitat usage; iii) documenting any threats or conflicts; and iv) behaviour (such as social and browsing).
- Habitat assessments should be conducted to characterise habitat conditions across northern Eritrea – including the project's implementation area – and to identify critical Nubian ibex sites and habitats. Such assessments would focus on the identification of biotic communities and landform types, including general and detailed descriptions of habitat types, as well as a list of main habitat features. Nubian ibex habitat assessments should take into account the habitat and dietary requirements of the species, as well as threats (detailed above in Section 1).
- Once habitat assessments have been completed future protected areas and natural wildlife corridors for the conservation of threatened species[164] in northern Eritrea – including the Rora Habab Plateau – can be identified and gazetted. An example of an area that can be considered for protection is the Koka Valley bordering the Zara Mine Project area. The protection of this area would directly contribute to the conservation of Nubian ibex in Eritrea and would benefit from the data available from wildlife surveys, as well as the wildlife and habitat management plan already developed for the mine area[165,166]. In addition, the re-establishment and gazetting of Yob Wildlife Reserve should be a priority, particularly if Nubian ibex are detected in the area. The presence of this reserve will not only be of relevance for the national protection and conservation of Nubian ibex, but also for the transboundary management of the species (with Sudan). The identification potential protected areas and natural wildlife corridors must be in alignment with the Land Proclamation No.58/1994, Forestry and Wildlife Conservation and Development Proclamation No.155/2006 and Eritrean Environmental Protection, Management and Rehabilitation Framework (Proclamation No.179/2017). (For further details on these proclamations refer to Section 2.2.4 above).
- Once the above assessments and the identification of protected areas and corridors have been conducted, it is advised that detailed conservation management plans for vulnerable and endangered species present in northern Eritrea (including Nubian ibex, greater kudu and warthog) are developed and implemented. These plans should build on those already present and proposed in the country's NBSAP, as well as being in alignment with other relevant policies and proclamations (such as those presented in Section 2.2.4).

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[164] Including Nubian ibex, greater kudu and warthog.
[165] GREDMCO. 2010. Wildlife Survey Report of Zara Mine Project Area. Sub-Sahara Gold Corporation/Chalice Gold Mines.
[166] GREDMCO. 2012. Wildlife and Habitat Management Plan for the Zara Mine Project. Sub-Sahara Gold Corporation/Chalice Gold Mines.

- If population surveys, habitat assessments and the identification of protected areas for Nubian ibex reveal the need for the reintroduction of the species into specific areas (such as the Rora Habab Plateau), this should be included in the conservation plan for the species. It is recommended that any reintroduction programmes are developed using international best practices (see Section 1.9.2).

Policy and planning recommendations

- Zoba and village-level plans and community by-laws should be revised to include the protection and conservation of endangered species such as the Nubian ibex. Any revisions should be aligned to national policies and legislation including Eritrea's NBSAP and Proclamation No.155/2006.
- The implementation of all national and sub-national policies, plans and legislation regarding the protection and conservation of endangered species such as the Nubian ibex need to be enforced. To do so, it is recommended that additional funding for the conservation of biodiversity within Eritrea be leveraged and sought from both national and international sources.

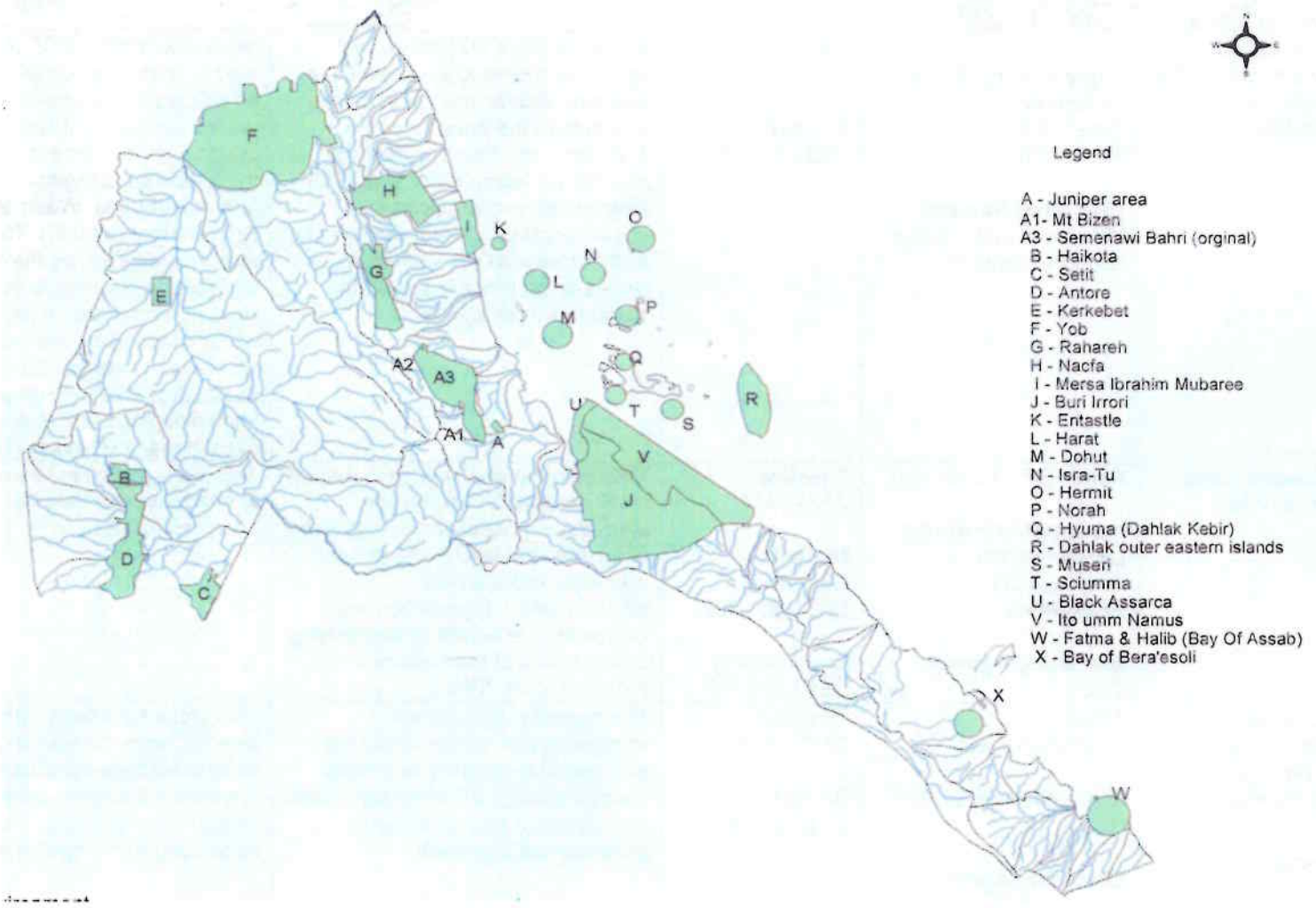
Additional recommendations

Awareness-raising on biodiversity conservation, particularly related to endangered species (such as Nubian ibex) needs to be implemented at the zoba- and village-level to ensure that local communities are aware of these species in the surrounding landscapes. This will enhance the protection and conservation of this species.

Annex M: Report of PPG baseline assessment

Attached separately

Figure XX - Historically proposed locations for a terrestrial and marine protected area system (FAO-Technical Assistance Program - pre-investment study in 1997)



Annex N: Past and Ongoing Projects

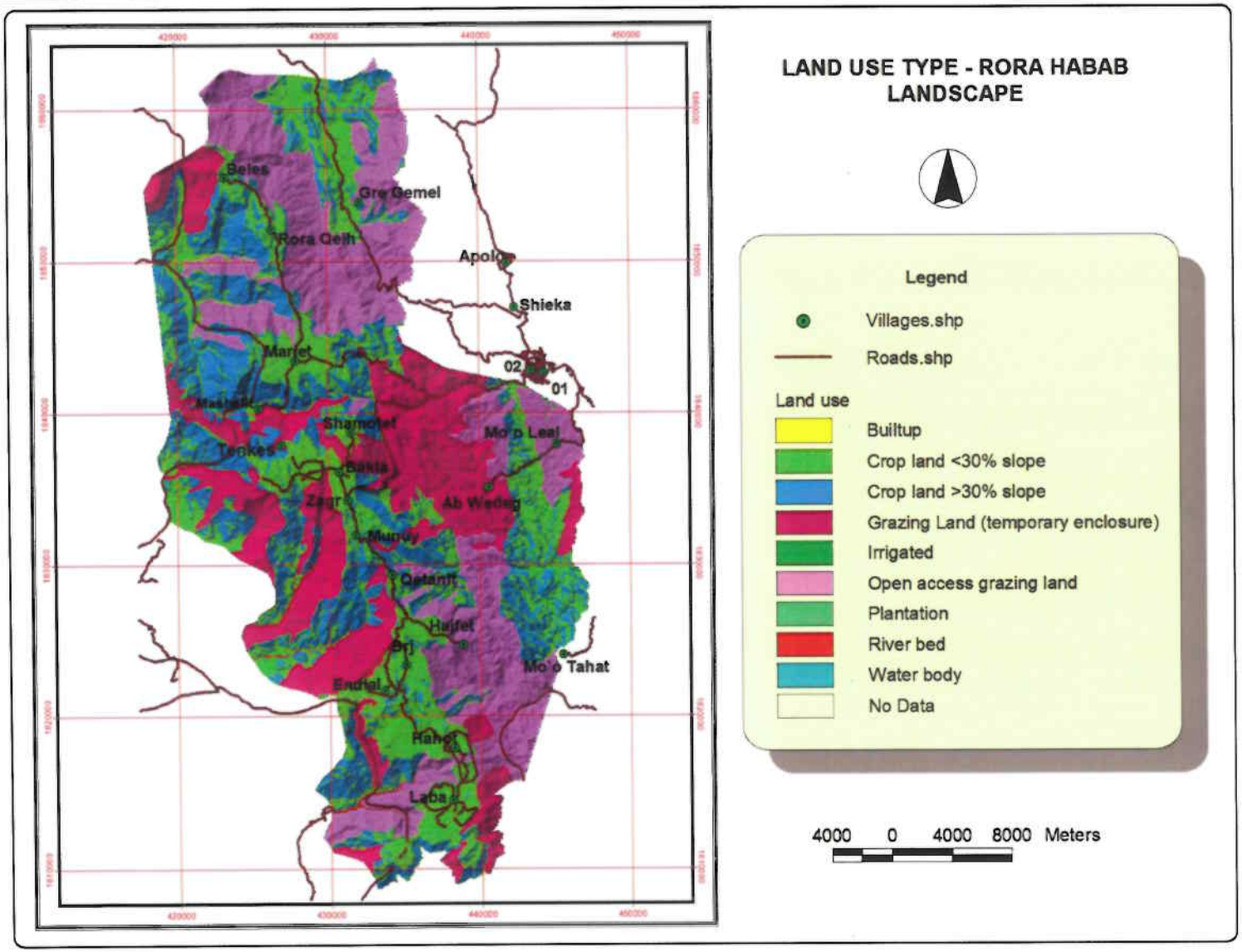
Title	Fund, Implementing Entity and Executing Agency	Timeline and budget	Details	Alignment with the proposed project
Mainstreaming Climate Risk Considerations in Food Security and IWRM in Tsilima Plains and Upper Catchment Area	**Fund:** GEF (LDCF) **Implementing Entity:** United Nations Development Programme **Executing Agency:** Ministry of Land, Water and Environment	**Timeline:** 2016-2021 **Budget:** US$9,050,000	To integrate adaptation measures into ecosystem restoration and agricultural production systems to address climate change in Eritrea and secure the benefits of the National Food Security Strategy and IWRM Action Plan. The LDCF-financed project supports the implementation of Priorities 3,4 and 5 of Eritrea's NAPA – which focus on livestock, forestry and water resources, respectively.	The proposed project is closely aligned with this LDCF project in that they both support ongoing initiatives on landscape restoration. At the central government level, both projects will be under the oversight of the Ministries of Agriculture (MoA) and that of Land, Water and Environment (MLWE). This central-level coordination by the two Ministries will facilitate cross-project learning and promote joint planning and monitoring by the two institutions, which has been identified as one of the missing elements in planning and implementation in Eritrea, as is the case in many other countries.
SIP: Sustainable Land Management Pilot Project	**Fund:** GEF Trust Fund **Implementing Entity:** United Nations Development Programme **Executing Agency:** GoSE	**Timeline:** 2009-2014 **Budget:** GEF Grant US$1,820,000 Co-Financing US$2,250,000	To create the enabling environment (policy, capacity, knowledge, alternatives) necessary for adoption of sustainable land management practices and alleviate environmental degradation while improving livelihoods of the farming communities of the Central Highland Zone (CHZ).	The project will draw from the lessons learned and replicate the best practices for SLM.
Climate Change Adaptation Programme in Water and Agriculture in Anseba Region, Eritrea	**Fund:** Adaptation Fund **Implementing Entity:** UNDP **Executing Agency:** Ministry of Agriculture	**Timeline:** 2012-2017 **Budget:** US$6,520,850	The project is focused on increasing community resilience and adaptive capacity to climate change through an integrated water management and agricultural development approach.	This project will draw upon the lessons learned regarding enhanced climate-resilient agricultural and livestock production, as well as erosion control through floodwater harvesting and irrigation technologies.

Title	Fund, Implementing Entity and Executing Agency	Timeline and budget	Details	Alignment with the proposed project
Integrated Semenawi and Debubawi Bahri-Buri-Irrori- Hawakil Protected Area System for Conservation of Biodiversity and Mitigation of Land Degradation	**Fund:** GEF Trust Fund **Implementing Entity:** United Nations Development Programme **Executing Agency:** Ministry Land, Water and Environment	**Timeline:** 2014-2020 **Budget:** GEF Grant US$5,878,000 Co-Financing US$10,450,000	To establish a national system of protected areas to conserve biodiversity and mitigate land degradation pressures on habitats in key biodiversity areas, initially centred in the Semenawi-Debubawi Bahri-Buri-Irrori-Hawakil Protected Areas Cluster.	The biodiversity mapping activities planned under the new proposed project will provide valuable information about the status of Eritrea's fauna and flora, including the African Olive, Juniper and Nubian Ibex, which form part of the Rora Habab's key biodiversity species.
Drought resilience and sustainable livelihoods programme DRLSP-IV Eritrea	**Fund:** African Development Bank **Implementing Entity:** GoSE	**Timeline:**2017 **Budget:** US$1,400,000	The project will develop regional systems to alleviate the negative impacts caused by the deteriorating environmental conditions in the Horn of Africa. Mechanisms will be established to enhance the availability of infrastructure for natural resources management (water and pastures) at the regional level (given the mobility of pastoralists across borders) and ensuring stability of the environment as well as the harmonious sharing of the resources in a sustainable manner.	The proposed project will coordinate with DRLSP to facilitate cross-project learning on NRM and livelihood diversification.
SIP: Catchments and Landscape Management	**Fund:** GEF Trust Fund **Implementing Entity:** International Fund for Agricultural Development **Executing Agency:** Ministry of Agriculture, Eritrea	**Timeline:** 2009-2017 **Budget:** GEF Grant US$4,350,000 Co-financing US$21,678,000	To address the interlinked problems of poverty, food insecurity, land degradation, and biodiversity loss, through the development and promotion of innovative sustainable land management technologies and land use planning approaches with the aim of restoring, sustaining and enhancing the productive and protective functions of Eritrea's ecosystem resources.	This project will draw upon the lessons learned regarding sustainable land management and land-use planning.

Title	Fund, Implementing Entity and Executing Agency	Timeline and budget	Details	Alignment with the proposed project
Soil and water conservation for improved agricultural productivity	**Fund:** GoSE	**Timeline:** Unknown **Budget:** GoSE US$3,000,000 Communities in-kind US$5,000,000	Over the past decade, large-scale public soil and water conservation works and reforestation programmes have been implemented involving farm forestry, community forestry, village woodlots and popular participation. On-farmsoil and water conservation practices are underway in all Zobas and are being implemented across an area covering 32,250 ha (as of 2014).	The proposed project will build on the reforestation and soil conservation programmes, coordinating activities and drawing on lessons learned for soil and water conservation in Eritrea.
Ministry of Agriculture five year (2014-2018) strategic development plan	**Fund:** GoSE	**Timeline:** 2014-2018 **Budget:** GoSE US$7,000,000 Communities in-kind US$ 2,000,000	The Five Year Strategic Development Plan targets smallholder farmers, who form a large majority of the Eritrean farming community. The plan focuses on the following programmes and services: • Agricultural Land and Natural Resources Management (soil, water, forestry and wildlife conservation and irrigation development) programmes • Integrated Crop and Livestock Development Programmes • National Agricultural Research Programmes • Services (Animal Health, Plant Health, Regulatory, National Plant and Animal Health Laboratory, Support)	The proposed project will draw on lessons learn from the strategic development plan, focusing on agricultural and natural resource management.
The Agricultural Extension Programme (Farmers' Advisory Service)	**Fund:** GoSE	**Timeline:** Unknown	The extension services aim at raising the awareness of farmers towards the adoption of improved inputs and modern practices to	The project will coordinate with the Agricultural Extension Programme to build the capacity of extension agents to integrate sustainable landscape

Title	Fund, Implementing Entity and Executing Agency	Timeline and budget	Details	Alignment with the proposed project
		Budget: GoSE US$5,000,000 Communities in-kind US$ 5,000,000	increase their yields and improve the quality of production.	management and CSA into extension services.

Annex O: Maps


LAND USE TYPE - RORA HABAB LANDSCAPE
Legend
Villages.shp
Roads.shp
Land use
Builtup
Crop land <30% slope
Crop land >30% slope
Grazing Land (temporary enclosure)
Irrigated
Open access grazing land
Plantation
River bed
Water body
No Data
4000 0 4000 8000 Meters
Beles
Gre Gemel
Rora Qelh
Apolo
Shieka
Mariet
02
01
Shamolet
Mo'o Leaj
Tenkes
Bakia
Zagr'a
Ab Wedeg
Murvy
Qetanit
Hajjet
Bij
Mo'o Tahat
Endial
Rahet
Laba

Map indicating location of past and ongoing projects in Eritrea (Refer to Annex N)