

Ensuring climate resilient water supplies in the Comoros Islands

Environmental and Social Management Framework

13 September 2018

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EXECUTIVE SUMMARY

The Proposed Project supports the Government of Comoros (GoC) in **securing a sustainable water supply for drinking and irrigation in the context of climate change and recurring natural disasters.**

The project will invest in diversified sources of water supply by capturing rainwater, surface water and groundwater that will enable the most vulnerable to have a sufficient, good quality water supply at all times including during climate extremes. Source water will be stored and treated with 'climate-proofed' infrastructure.

Management for water supply will be reinforced by providing agencies as well as communities training on sustainable water management including cost-recovery for drinking and irrigation purposes in the context of climate change dynamics. The project will simultaneously strengthen the enabling environment for medium to long-term climate adaptation by strengthening the recently revised Water Code (2015) and by integrating climate information into the Water Code.

Climate information will be improved by expanding the hydrogeological-meteorological measuring network so that water-related information can be tailored to user agencies and local communities. Additionally, in order to ensure water quality and ecosystem services are enhanced, the project will promote actions that recharge and protect key water sources making them less susceptible to dry periods, floods and sea level rise.

The Project promotes a paradigm shift through its integrated and holistic approach to managing climate risks for water security for an estimated **230,000 vulnerable men and 240,000 vulnerable women in Comoros or approximately 45% of the 2030 projected population.**

An estimated 800,000 people will benefit from improved national and sub-national climate resilient enabled water governance in Comoros.

This ESMF has been prepared based on the risks identified through screening of activities. The risk profile of the proposed project has been determined to be moderate (Category B) - 4 moderate impact risks and 11 low impact risks related to project implementation were identified. The risks are considered to be acceptable and manageable through the application of mitigation measures.

The ESMF provides an outline of the types of mitigation measures that are likely to be required when implementing the project. Where appropriate, site specific environmental and social management plans (ESMPs) or site work instructions may be prepared to deal with specific issues.

1 INTRODUCTION

1. This Environmental and Social Management Framework (ESMF) has been prepared in support of a project proposal for “Securing a Sustainable Water Supply for Drinking and Irrigation in the Context of Climate Change and Recurring Natural Disasters” by the Government of Comoros to the Green Climate Fund (GCF). As this project is supported by UNDP in its role as a GCF Accredited Entity, the project has been screened against UNDP’s Social and Environmental Standards Procedure and deemed a Moderate Risk (World Bank/International Finance Corporation Category B) project. As such, an Environmental and Social Management Framework has been prepared for the project.

1.1 BACKGROUND

2. The Government of Comoros with support from UNDP, is formulating a project on adaptation to climate change impacts on water supply in the islands of Comoros for submission to the GCF. The project will seek to improve the resilience of vulnerable communities to climate change impacts.
3. Presently, less than 13% (9% in rural areas) of the total Comorian population has access to good quality water supplies. Water supply is also not continuous (even in the capital city, Moroni). At present, water consumption per capita is only 35 litres per day, which falls short of the WHO recommended consumption of 50 litres per capita per day. Of considerable concern is the fact that all hospitals do not have sufficient running water and are consequently hindered from providing patients with required hygiene levels.
4. Water security is an urgent issue on all three Small Island Developing States (SIDS) composing the Comoros: The largest island, Grand Comore is estimated to provide treated water to only 30% of the population. The second largest and poorest of the islands, Anjouan, provides solely untreated water to 15% of its population. The smallest island, Mohéli provides untreated water to 80% of the population.
5. Although permanent rivers exist on two of the islands, Anjouan and Mohéli, these rivers are becoming ephemeral due to decreasing rainfall recharge rates and extended dry periods. On Grande Comore, in contrast to the other two islands, there is a complete absence of surface water. Supplies have to be sourced from groundwater resources and through rainwater harvesting.
6. Due to a lack of climate-proof storage infrastructure, water management agencies do not have the ability to store water for extended dry periods. Predicted climate change impacts and the increasing population growth rate (2.4%) are expected to exacerbate existing water insecurity.
7. Overall, water quality is threatened by: i) salt water intrusion into coastal aquifers (related to sea level rise); ii) sedimentation of source water during and after high intensity rainfall events; and iii) reduced water source recharge rates due to decreasing rainfall, increasing temperatures and increasing surface runoff. Non-climatic drivers such as no waste or wastewater management regime and protection of water sources are compounding the problems.

1.2 OVERVIEW OF THE PROJECT

8. The GCF project stems from the successes of the **ACCE project, Adapting Water Resource Management in Comoros to Increase Capacities to Cope with Climate Change**, (financed by LDCF and supported by UNDP-UNEP) which ended in December 2015. The ACCE project focused on increasing climate resilience of drinking and irrigation water supplies for all islands. It also stressed water management, reforestation, land use planning and the construction of small rural water mobilization infrastructure (impluviums, cisterns and drip irrigation). Specialized training was provided for water management committees to establish a water pricing system and to conduct good community management techniques and practices. In targeted areas, watershed committees were also established that were provided training on the shared uses of water resources in the context of increasing scarcity due to climate change.
9. The GCF project will also build on water institutional reform recommendations and the water supply and distribution infrastructure provision provided by the **PEAPA** project (AfDB). PEAPA made major investments in infrastructure such as intakes and pre-treatment facilities. Through PEAPA, detailed studies on the hydrology and geohydrology of the three islands were also conducted.

10. The following Adaptation Solution strategies are proposed to address the barriers preventing climate resilience:
 - Long Term Planning, Budgeting and Investment in Climate Resilient Water Supply Infrastructure;
 - Climate Resilient Management and Monitoring of Water Resources and Watersheds; and
 - Climate Resilient Water Supply Infrastructure Design, Operation and Protection.
11. Drinking water risk reduction will be integrated across all three strategies and will be the primary approach used to identify, predict, forecast and avoid, mitigate and withstand hydrological climate risks.
12. The first strategy requires appropriate national water sector policies, legislation and plans which mainstream climate change risk reduction approaches into institutional responsibilities, their multi-year targets and goals, and commits the necessary financial resources to strengthening sector resilience, year on year.
13. The second strategy will require investigation and monitoring of the nation's water resources, understanding their vulnerability to climatic (hydrological) risks, protecting and rehabilitating watersheds to minimize the effects of increasingly variable rainfall on these small fragile water resources, and developing simple forecasting and early warning systems for drought and flood.
14. The third strategy requires island water supply agencies, community supply committees/operators and households to have the capacity to develop preparedness plans to avoid or reduce the hydrological risks to the water supplies, through climate risk reduction preparedness planning in the design, construction, operation and maintenance of water supplies and their contributing catchments, including responses to forecasts and early warnings, and use of multiple water sources. To address this goal, the Project sets the foundation to improve water supply in the context of climate change on a large scale while increasing the capacities of state, non-state, peri-urban and rural institutions to manage water infrastructure in a climate-informed manner. To increase the quantity and quality of surface and groundwater sources for these populations (peri-urban and rural) with increasingly dry conditions, a mix of water capture, infiltration and storage mechanisms will be used.
15. The key goal of the GCF project is to strengthen the climate resilience of drinking and irrigation water for 15 of the most vulnerable zones in the Union of Comoros to climate change risks and recurring natural disasters.
16. The project covers all 3 islands of Comoros. The location of the Comoros archipelago is in (Figure 1).



Figure 1 Location of Comoros, showing the three islands: Grande Comore, Anjouan and Mohéli.

17. Fifteen target zones on the three islands, comprising 103 villages, have been chosen due to their vulnerability to climate change, their good hydrogeological and hydraulic potential for water storage and capture, limited donor support for water supply in the localities to date and potential collaboration planned with complimentary donor support. The target zones are listed in Table 1.
18. The target areas and infrastructure proposed for each island, Grand Comore, Anjouan and Mohéli, are shown on Figure 2, Figure 3 and Figure 4 respectively.

Table 1: Target Zones of Project Interventions

Islands	Zones
Grande Comore	Zone 1: Moroni-Bambao-Istandra Zone 2: Ngongwe Zone 3: Hambou Djoumoipanga Zone 4: Mboikou Zone 5: Oichili Zone 6: Hamanvou
Anjouan	Zone 7: Hassimpao Zone 8: Vouani Zone 9: Vassi Zone 10: Ankibani Zone 11: Chitrouni-Saadani Zone 12: Mjamaoue Zone 13: Nioumakele-bas
Moheli	Zone 14: Fomboni-Djoiezi Zone 15: Hoan-Mbatse

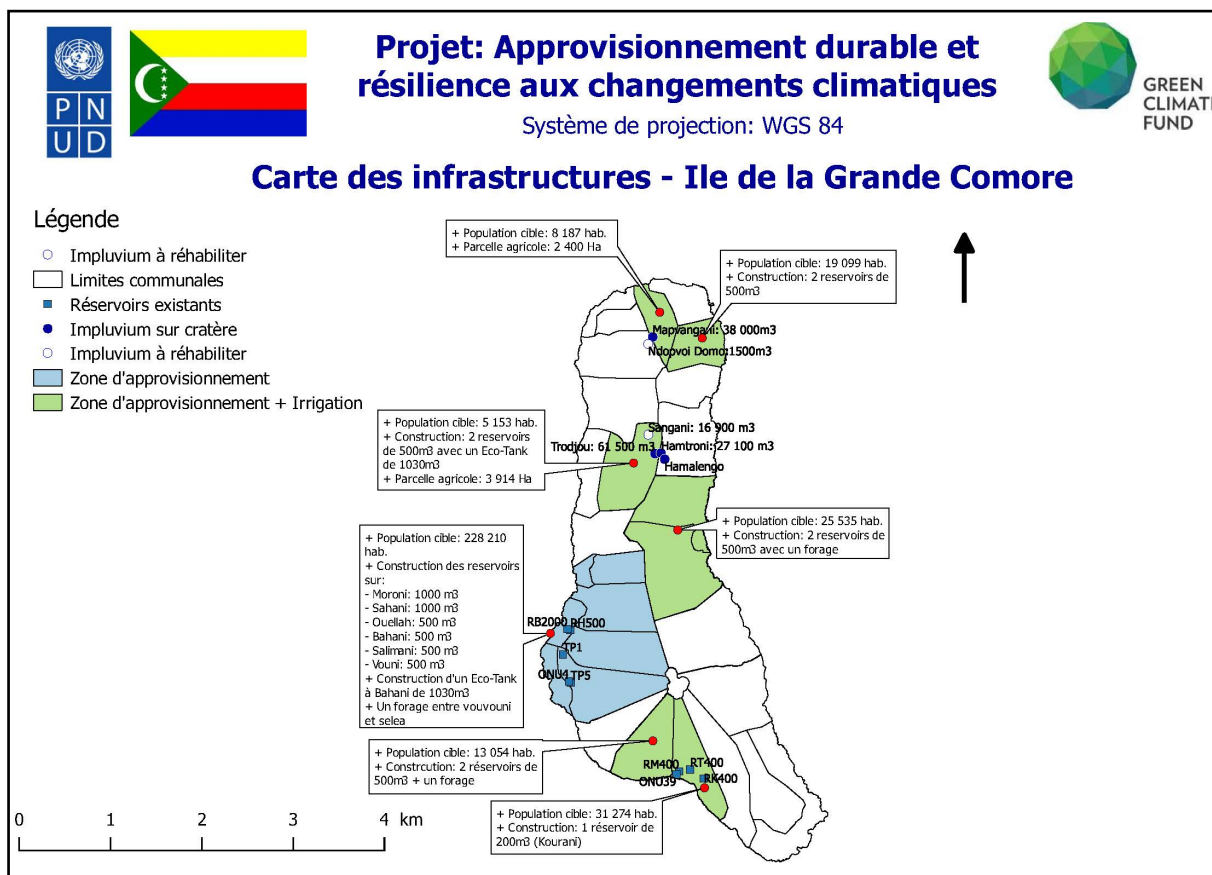


Figure 2 Target areas and proposed infrastructure on Grand Comore.

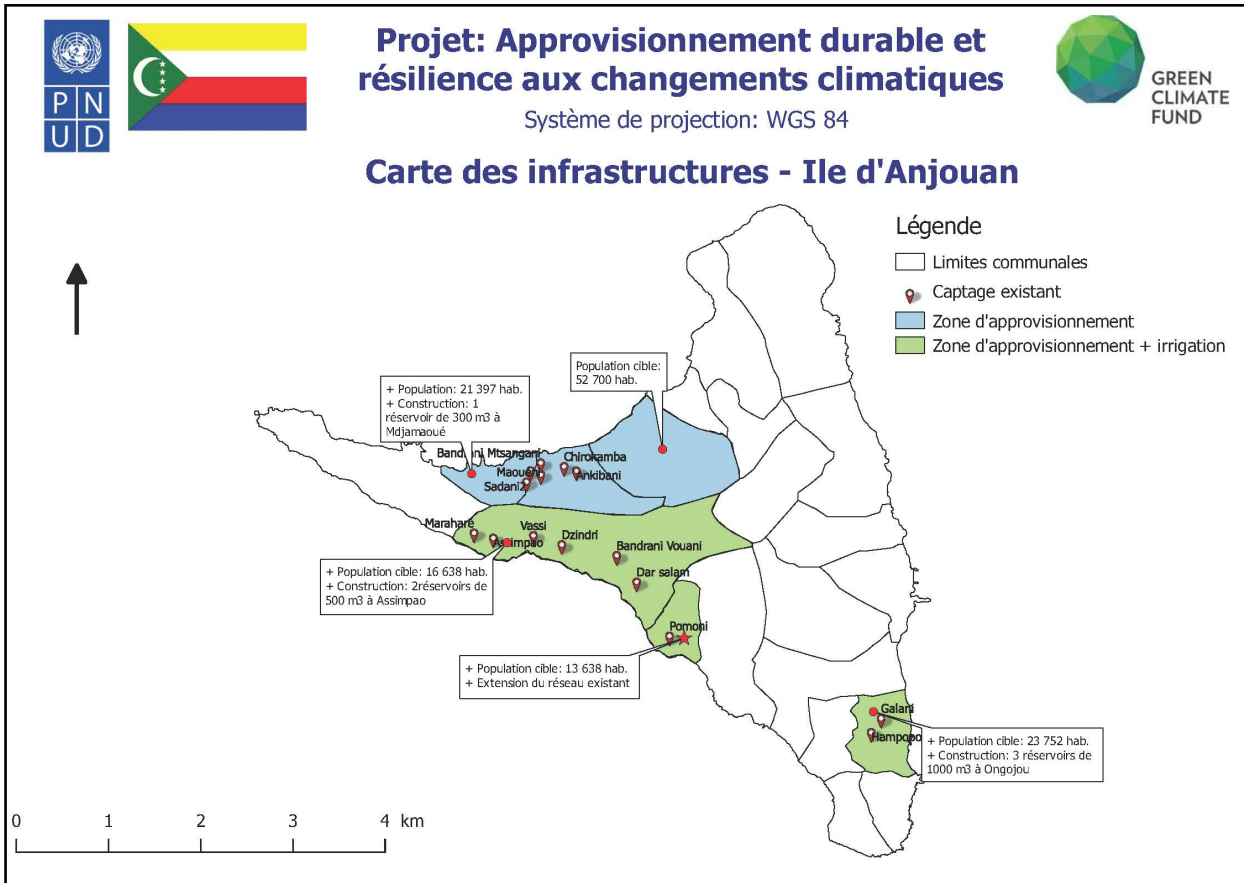


Figure 3 Target areas and proposed infrastructure on Anjouan.

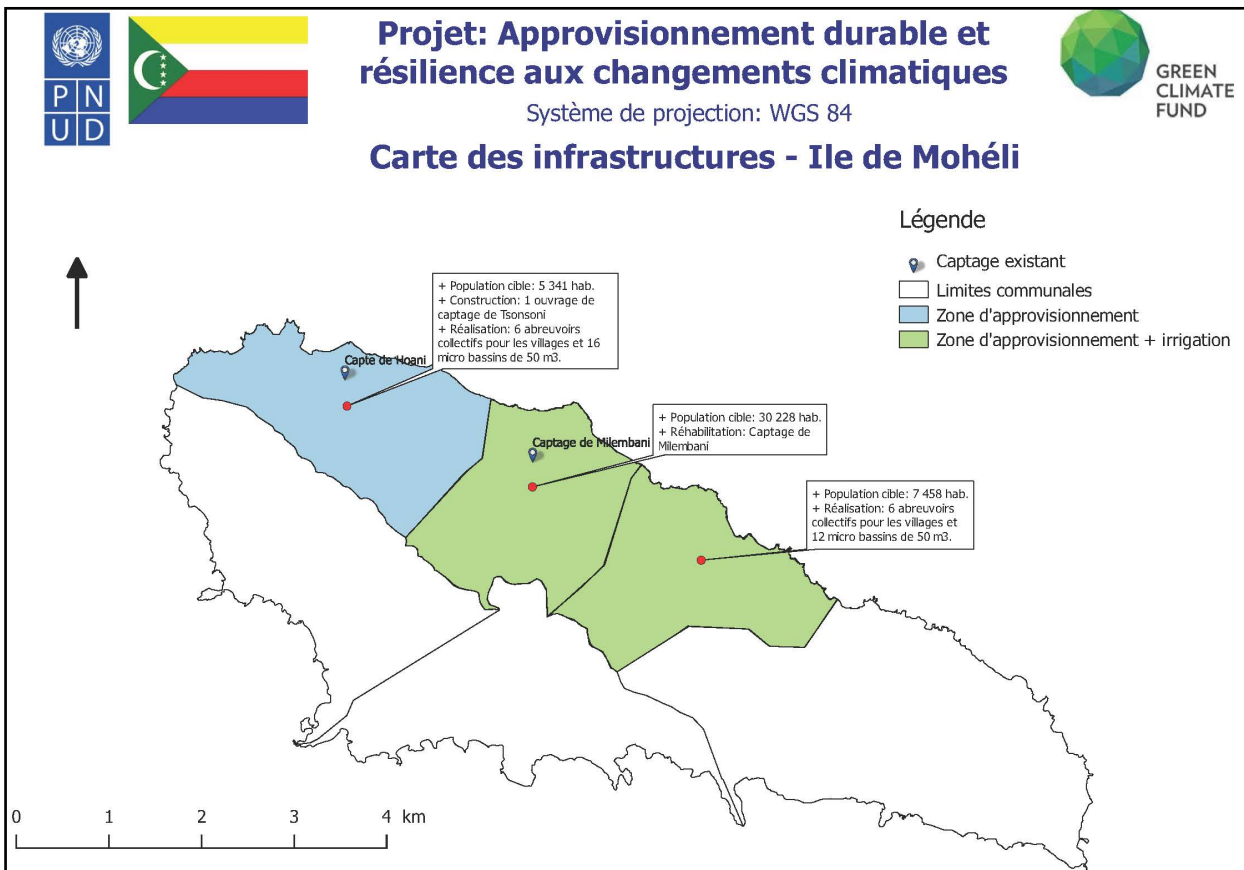


Figure 4 Target areas and infrastructure proposed on Mohéli.

1.2.1 Summary of Activities

19. The project would have four primary outputs:

- Capacity building for water management in the context of climate change
- Integrated water management
- Improved water supply
- Monitoring of water supply.

20. The activities proposed project under each output are listed in Table 2.

Table 2 Proposed Outputs and Activities

Outputs		Activities
1.	Water Supply Sectoral Climate Risk Reduction Planning and Management	<p>1.1. Integrate climate change adaptation into the new Water Code reforms using national and regional multi-agency consultations to advocate importance of climate resilience and support the adoption and implementation of climate informed best practices (integrated into the new Water Code) by national and regional agencies.</p> <p>1.2. Strengthen decentralized water resources management capacities to undertake climate risk reduction assessments and integrate DWSSP in rural and peri-urban water supply planning, and develop and deliver awareness campaigns and training programmes to Water Management Committees and users in climate change risk reduction on water resources, including the protection and conservation of water resources, climate change hazard mapping, water security and risk reduction planning <i>i.e.</i> Drinking Water Safety and Security Plan implementation and operationalization, as well as national tariff strategies and budgeting for the long-term climate resilience (including extreme event operation and maintenance requirements) management using design opportunities presented by Output 3.</p>
2.	Climate Informed Water Resources and Watershed Monitoring and Risk Forecasting	<p>2.1 Develop climate resilience focused IWRM Committees and Watershed Risk Reduction Action Plans in the project intervention areas and implement priority activities e.g. buffer zones, revegetation, slope stabilization, wetland protection, to increase resilience to droughts and floods.</p> <p>2.2 Support IWRM Management Committees to establish water source protection zones in accordance with Article 28 of the revised Water Code to minimize water supply quality degradation during climatic extremes and raise public awareness on the impacts of climate change, water conservation and anti-pollution measures.</p> <p>2.3 Install and operate extreme hydrological water cycle monitoring equipment to understand climatic risks on water resources and allow optimization of climate resilient IWRM over different planning periods and strengthen Directorate of Meteorology to produce and disseminate drought and flood forecasts for targeted users including flood early warning system.</p> <p>2.4 Integrate the use of hydrological forecasts in organization and community management practices increasing the resilience to climate change risks for Agricultural Associations, Water Management Committees, NGOs/CSOs and other users.</p>
3.	Climate Resilient Water	<p>3.1. Undertake rapid saline up-coning risk assessments of existing groundwater abstraction wells to assess vulnerability to climate change extended drought and inform revised risk reduction pumping strategies, and</p>

	Supply Infrastructure	<p>construction of additional boreholes in zones at risk of rainwater harvesting drought water scarcity on Grand Comore.</p> <p>3.2. Increase resilience of water supply facilities to droughts (extending groundwater fed water distribution networks to communities reliant on only rainwater harvesting); greater intensity flood flow damage (including intake re-location where bank doesn't erode, storm overflow diverters, debris bars/screens) and to storm generated higher turbidity and bacteria loadings (using shut-off valves combined with short term (1-2 day) demand storage tanks, higher specification water sand filters and related treatment).</p> <p>3.3. Installation of flowmeters to measure improvements in water quantity provision during climatic extremes to support justification for Climate Resilient Tariff adjustments, as well as be used for reticulated scheme leakage reduction programmes (to reduce dry season water demand). This activity will be fully funded by the Government of Comoros.</p>
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1.3 ENVIRONMENTAL AND SOCIAL RISK ASSESSMENT

21. As this project is supported by UNDP in its role as a GCF Accredited Entity, the project has been screened against UNDP's Social and Environmental Standards Procedure. The Social and Environmental Screening Template was prepared and the project deemed to be a moderate risk (Category B) project. Discussions on the impact assessment are provided in the Social and Environmental Screening Template, which provided the rationale for the project being classified as a moderate risk. This ESMF provides further discussion below.
22. An impact risk assessment was undertaken to assess the impact (Table 3) and the probability of each impact (Table 4). From this, a significance value was attributed to the potential impact (low, medium, high) (Table 5).

Table 3 Rating the 'impact' of a risk

Score	Rating	Social and environmental Impacts
5	Critical	Significant adverse impacts on human populations and/or environment. Adverse impacts high in magnitude and/or spatial extent (e.g. large geographic area, large number of people, transboundary impacts, cumulative impacts) and duration (e.g. long-term, permanent and/or irreversible); areas impacted include areas of high value and sensitivity (e.g. valuable ecosystems, critical habitats); adverse impacts to rights, lands, resources and territories of indigenous peoples; involve significant displacement or resettlement; generates significant quantities of greenhouse gas emissions; impacts may give rise to significant social conflict
4	Severe	Adverse impacts on people and/or environment of medium to large magnitude, spatial extent and duration more limited than critical (e.g. predictable, mostly temporary, reversible). The potential risk impacts of projects that may affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples are to be considered at a minimum potentially severe.
3	Moderate	Impacts of low magnitude, limited in scale (site-specific) and duration (temporary), can be avoided, managed and/or mitigated with relatively uncomplicated accepted measures
2	Minor	Very limited impacts in terms of magnitude (e.g. small affected area, very low number of people affected) and duration (short), may be easily avoided, managed, mitigated
1	Negligible	Negligible or no adverse impacts on communities, individuals, and/or environment

Table 4 Rating the 'Probability' of a risk

Score	Rating
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5	Expected
4	Highly likely
3	Moderately likely
2	Not likely
1	Slight

Table 5 Risk matrix

Impact	5	H	H	H	H	H
	4	M		H	H	H
	3	L	M	M	M	M
	2	L	L	M	M	M
	1	L	L	L	L	L
		1	2	3	4	5
Probability						

23. When undertaking the risk assessment, all activities were assessed, including, hard/soft infrastructure and livelihood interventions. Specific measures for each matter eg water, erosion, noise etc are discussed along mitigation measures later in this ESMF.
24. The pre-mitigation impacts and post-mitigation impacts and risk assessments for the project are shown in Table 6.

Table 6 Impact and Risk Assessment

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
Water Supply Sectoral Climate Risk Reduction Planning and Management	<p>This activity is primarily capacity development and training. As such, there are unlikely to be any significant adverse impacts.</p> <p>The development of standardised tariff structures that are socially sensitive potentially has moderate risk.</p> <p>Activities include:</p> <ul style="list-style-type: none"> improving the coordination among water sector actors. integrate climate change into the new Water Code. establish, standardize and apply evaluation criteria for socially-sensitive water tariff pricing mechanisms. decentralizing water resources management capacities. training Water Management Committees and users in understanding climate change impacts on water resources, the protection and conservation of water resources, water security and risk reduction and the costs necessary for long-term climate resilience. 	<p>Likelihood: 2</p> <p>Consequence: 3</p> <p>Risk: Moderate</p>	<p>Identify training required.</p> <p>Inclusion of women and other disadvantaged groups in both training and management organisations.</p> <p>Ensure tariff structures are socially sensitive by considering local factors and engaging widely with community. Prices to reflect actual production, storage and treatment costs to deliver climate resilient infrastructure.</p> <p>Provide legal structure for decentralised water management to occur in.</p> <p>Train trainers to allow for sustainable knowledge transfer.</p> <p>Wide engagement with community to raise awareness of protection and conservation of water service issues and to drive user behaviour change.</p>	<p>Likelihood: 2</p> <p>Consequence: 2</p> <p>Risk: Low</p>
Climate Informed Water Resources	<p>This output is focussed on activities that result in better watershed management. This includes</p>			

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
<p>and Watershed Monitoring and Risk Forecasting</p>	<p>IWRM committee actions and water cycle monitoring and forecasting activities. Installation and operation of hydrological monitoring equipment. Risk that equipment not correctly used or maintained.</p> <p>Activities and their potential risks include:</p> <ul style="list-style-type: none"> Climate Risk Vulnerability Assessments – cartography based, may lack sufficient data or weighting of risks may be inappropriate. Developing IWRM Committees and Climate Risk Reduction Plans of Action – risk that IWRM may not represent community and that resultant action plans biased. Activities to promote watershed management in order to increase resilience to droughts and floods using sustainable land, waste and wastewater management – risk that there is limited uptake or that knowledge is lost. Establishment of water source protection zones. Zones must be appropriate and accepted by catchment users. 	<p>Likelihood: 3 Consequence: 3 Risk: Moderate</p>	<p>CRVAs to use most up-to-date maps and images available and incorporate relevant data (collect field data if data weakness identified). Selection of weightings for vulnerability to be tested eg sensitivity test and compared with global best practice.</p> <p>Ensure IWRM committees have appropriate membership to represent catchment users.</p> <p>Train committees and communities in climate change and catchment management.</p> <p>Train trainers for knowledge transfer</p> <p>Include community in identification and delineation of protection zones to get buy in.</p> <p>Hydrological data will be collected by technicians to be trained under climate-informed training programs. Equipment will be maintained by the Directorate of Meteorology.</p> <p>Utilise practices recommended in ESMF in all activities to expose public to good practices</p>	<p>Likelihood: 2 Consequence: 3 Risk: Moderate</p>

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
	<p>The installation of water cycle monitoring equipment and the collection, treatment and analysis of water resources data has the following potential risks:</p> <ul style="list-style-type: none"> poor equipment choice or equipment that is not easily maintained. poor data collection 	<p>Likelihood: 3 Consequence: 2 Risk: Moderate</p>	<p>Raise public awareness on the impacts of climate change, water conservation and practices that include use of forecasts.</p> <p>Monitor outcomes to enable measurement and promotion of successful actions</p> <p>Select equipment that is appropriate. Train users in maintenance and repair. Provide for O&M in operating budget</p> <p>Train data collection recruits in appropriate sample collection, testing and reporting procedures. Ensure that data is verified and shared with other potential users.</p>	<p>Likelihood: 2 Consequence: 2 Risk: Low</p>

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
	<ul style="list-style-type: none"> inappropriate training, loss of trained staff, user groups not identified, poorly targeted forecasts, women not included in training 	<p>Likelihood: 2 Consequence: 3 Risk: Moderate</p>	<p>Identify forecast producers and users. Identify training needs. Test forecast product/user satisfaction and comprehension.</p> <p>Monitor actions taken by users as a result of forecasts</p> <p>Train trainers for sustainable knowledge transfer.</p>	<p>Likelihood: 1 Consequence: 2 Risk: Low</p>
Climate Resilient Water Supply Infrastructure	<p>This output involves the construction of water off-takes on rivers, construction reservoirs and tanks, installation of water disinfection and filtration systems, installation of pipe networks, upgrading groundwater extraction system, and installation of water meters to promote better water demand management.</p> <p>The following potential risks/impacts have been identified:</p> <p>Altered hydrology in streams</p>	<p>Likelihood: 4 Consequence: 3 Risk: Moderate</p>	<p>Assessment of river flows as part of project design.</p> <p>Small scale weir structures designed to operate as run-of-river</p>	<p>Likelihood: 4 Consequence: 2 Risk: Moderate</p>

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
	Loss of habitat – clearing, construction	Likelihood: 3 Consequence: 3 Risk: Moderate	Implement measures in ESMF, in particular limiting clearing and managing sediment and erosion. Habitats to be created/enhanced through EbA as part of watershed management	Likelihood: 2 Consequence: 2 Risk: Low
	Over extraction of groundwater and or contamination of groundwater	Likelihood: 3 Consequence: 3 Risk: Moderate	Groundwater to be tested for suitability for use and sustainable volume. Monitor extraction Implement groundwater protection measures. Raise public awareness	Likelihood: 2 Consequence: 3 Risk: Moderate
	Chemical dosing – chlorine. There is a risk of spill and/or injury associated with liquid chlorine.	Likelihood: 2 Consequence: 2 Risk: Low	Adopt appropriate handling and storage practices. Train staff in emergency procedures.	Likelihood: 1 Consequence: 2 Risk: Low
	Impacts of earthquakes, landslides and volcanic eruptions. As volcanic islands there is a risk of volcanic activity (although it is slight). Landslides caused by heavy rainfall/cyclones and steep terrain pose a greater risk. Infrastructure could be damaged by these events	Likelihood: 1 Consequence: 4 Risk: Moderate	Assess risk during site selection. Design infrastructure with risks in mind. Small scale and spatial distribution helps to reduce risk to infrastructure overall	Likelihood: 1 Consequence: 3 Risk: Low

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
	Generation of waste – waste management is poor on Comoros. Project, in particular construction, will generate some waste.	Likelihood: 5 Consequence: 3 Risk: Moderate	Standard construction waste + maintenance waste Adopt a waste heirachy and manage appropriately	Likelihood: 5 Consequence: 1 Risk: Low
	Greenhouse gas production due to increased power use through additional pumps	Likelihood: 5 Consequence: 2 Risk: Moderate	Appropriately sized electrical pumps, option to run on green energy when available. Standby generators onsite. Most of project utilises gravity.	Likelihood: 5 Consequence: 1 Risk: Low
	Power system inadequate – Comoros has an erratic power supply that can affect ability to pump water	Likelihood: 3 Consequence: 3 Risk: Moderate	Backup generators at each bore	Likelihood: 2 Consequence: 2 Risk: low
	Erosion and sedimentation – the thin fragile soils, steep terrain and high rainfall makes erosion a real risk on Comoros.	Likelihood: 4 Consequence: 3 Risk: Moderate	Implement sediment erosion controls	Likelihood: 3 Consequence: 3 Risk: Moderate
	Impacts of climate change – in particular changing rainfall patterns	Likelihood: 3 Consequence: 3 Risk: Moderate	Project design takes into account climate change model impacts Water Management Committees will be trained in climate change adaptation to better manage water resources Water reform will integrate climate change	Likelihood: 2 Consequence: 2 Risk: Low

Activity	Unmitigated Impacts	Likelihood of Impact and Consequence	Avoidance and Mitigation Measures	Likelihood of Impact and Consequence post mitigation
	Potential impacts on threatened species. Construction activities could adversely impact some species. Most threatened species are found in the mid-high altitudes.	Likelihood: 2 Consequence: 3 Risk: Moderate	Scale of infrastructure is small and generally in areas already impacted by development/agriculture. Assess sites prior to commencement of construction for the presence of any threatened species. Limit clearing. Consider needs of threatened species in designing any EbA activities. Avoid undertaking development activities in the three Ramsar areas.	Likelihood: 2 Consequence: 2 Risk: Low

1.3.1 Assumptions Underpinning the Development of the Environmental and Social Management Framework

25. The following assumptions have been made in the preparation of this ESMF:

- none of the interventions will require the displacement of people;
- none of the interventions will be conducted in protected areas or sensitive locations;
- appropriate erosion and sediment control will be undertaken during all stages of the projects; and
- there will be no release of pollution and/or chemicals as a result of the projects.

1.3.2 Purpose and Objectives of the Environmental and Social Management Framework

26. An EMSF is a management tool used to assist in minimising the impact to the environment and socially; and reach a set of environmental and social objectives. To ensure the environmental and social objectives of the projects are met, this EMSF will be used by the project implementers to structure and control the environmental management safeguards that are required to avoid or mitigate adverse effects on the environment.

27. The environmental and social objectives of the ESMF are:

- improve the water supply in the targeted areas and introduce water conservation measures;
- encourage good management practices through planning, commitment and continuous improvement of environmental practices;
- minimise or prevent the pollution of land, air and water pollution;
- protect native flora, fauna and important ecosystems;
- comply with applicable laws, regulations and standards for the protection of the environment;
- adopt the best practicable means available to prevent or minimise environmental impact;
- describe monitoring procedures required to identify impacts on the environment; and
- provide an overview of the obligations of Government of Comoros and UNDP staff and contractors in regard to environmental obligations.

28. The EMSF will be updated from time to time by the implementing Project Management Unit (PIT)/contractor in consultation with the UNDP staff to incorporate changes in the detailed design phase of the projects.

1.3.3 Land Issues

29. There is limited government owned land in Comoros. Land is generally either privately owned or community land. Stakeholder discussions in the 15 target areas identified land that will be made available for the installation of infrastructure. Agreements have been signed by landholders (refer to Community Engagement documents).

30. Land for reservoirs on Grande Comore will be acquired by the government through the purchase of private land at fair market rates. Purchase of land will be by negotiation where landholders are not required to sell their land. As a safeguard against malpractice by the government, landholder can resort to the judiciary, which is independent of the legislative and the executive.

31. Compulsory acquisition or resettlement is not required.

1.3.4 Indigenous Peoples

32. As part of due diligence, consultations and an assessments were undertaken as to the likelihood of any of the project's activities involving indigenous people and/or ethnic minorities. No indigenous people and/or ethnic minorities are known to live in the Comoros.

1.4 OVERVIEW OF INSTITUTIONAL ARRANGEMENTS FOR THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK PLAN

33. The EMSF will be assessed for each sub-project by the Ministry of Agriculture, Fisheries, Environment and Land and Urban Development (MAPEAU) and UNDP prior to any works being undertaken. The EMSF identifies potential risks to the environment and social matters from the projects and outlines strategies for managing those risks and minimising undesirable environmental and social impacts. Further, the EMSF provides a Grievance Redress Mechanism for those that may be impacted by the projects that do not consider their views have been heard.
34. The National Directorate of Environment and Forests (DGEF) will be responsible for the supervision of the EMSF. The UNDP will gain the endorsement of the DGEF and will ensure the EMSF is adequate and followed. The PIT will ensure timely remedial actions are taken by the contractor where necessary.

1.4.1 Administration

35. The DGEF will be responsible for the revision or updates of this document during the course of work. An Environmental Officer will be recruited for the project and will be responsible for ESMF administration. It is the responsibility of the person to whom the document is issued to ensure it is updated.
36. The site supervisor will be responsible for daily environmental inspections of the construction site. The DGEF will cross check these inspections by undertaking monthly audits.
37. The contractor will maintain and keep all administrative and environmental records which would include a log of complaints together with records of any measures taken to mitigate the cause of the complaints.
38. The contractor will be responsible for the day to day compliance of the ESMF.
39. The DGEF will be the implementing agency and will be responsible for the implementation and compliance with the ESMF via the collaborating partners and contractors. The ESMF will be part of any tender documentation.
40. The Supervising Engineer/Project Manager will supervise the contractor, while the DGEF will be responsible for environment and social issues.
41. In its oversight role, UNDP will provide support in the initial setup and implementation of the ESMF. UNDP will then undertake periodic audits and reviews of the ESMF and its activities to ensure that the measures are being implemented. Where non-conformances are found, remediation action plans will be formulated.

1.4.2 Capacity Building

42. The ESMF provides an overarching set of safeguards for the project. Many of the skills and techniques described in the ESMF are transferrable to other projects and operations. Capacity building in the application of environmental and social safeguards will occur as a consequence of the implementation of the ESMF. The UNDP, in its oversight role, the DGEF and in particular the Environmental Officer, will be responsible for increasing capacity of all project participants in terms of environmental and social performance.
43. The Project includes technical training for Water Management Committees and IWRM Committees on climate-informed water and watershed management practices respectively. Eleven Comorian institutions will be trained on each island on socially sensitive water pricing. Similarly, staff from the Meteorological Department will be trained on hydro-meteorological data collection, analysis and presentation.
44. Users such as agriculture unions, Women's Groups, local Water User Associations will be trained in interpreting water-related bulletins to assist their planning and budgeting. Female trainers will be trained and empowered to ensure that women's specific vulnerabilities to climate change and water management are addressed. As a result, the users will be abler to take timely and in some cases urgent actions, to ensure water supply is of good quality and has sufficient capacity. The forecasts will also enable the agencies to take preparedness measures against natural hazard events such as flooding or extended dry periods.

2 LEGAL AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL MATTERS

2.1 LEGAL SYSTEM

45. The Comorian legal system rests on Islamic law and an inherited French legal code. Village elders or civilian courts settle most disputes. The judiciary is independent of the legislative and the executive. The Supreme Court acts as a Constitutional Council in resolving constitutional questions and supervising presidential elections. As High Court of Justice, the Supreme Court also arbitrates in cases where the government is accused of malpractice. The Supreme Court consists of two members selected by the President, two elected by the Federal Assembly, and one by the council of each island.

2.2 LEGISLATION, POLICIES AND REGULATIONS

46. The Constitution of 23 September 2001 stipulates in its preamble that people of the Comoros have a right to a healthy environment and obliges everyone to protect the environment. It also commits the government to respect international agreements to which the country is a Party, including the Nairobi Convention.

47. The following legislation is relevant to the project:

2.2.1 Land and soil

- Law No. 86-017 on the Urban Planning and Housing Code. Date of text: 09 July 1987
- Deliberation No. 60-52 of 10 December 1960 on the establishment and institution of property.
- Order No. 15-001 / VP / MATIUH / CAB of 12 January 2015 on the pricing and distribution of a tax relating to the acceptance of the closing declaration.
- Order No. 15-002 / VP / MATIUH / CAB of 12 January 2015 on the pricing and distribution of a tax relating to the issuance of the Urban Planning Note.
- Order No. 15-004 / VP / MATIUH / CAB of 12 January 2015 on the pricing and apportionment of a fee for the issue of the Lotir.
- Order No. 61-281 laying down the conditions for the application of Decision No. 60-52 of 10 December 1960 on the establishment and establishment of ownership.

2.2.2 Forestry

- Law No. 88-006 on the legal regime for reforestation, reforestation and forest management.
- Decree No. 55-582 on the protection of forests in the territories of Africa under the authority of the Minister for Overseas France.
- Order No. 66-617 regulating user fees, of May 11, 1966.
- Order No. 66-398 / PROD implementing Decision 65-19 of 14 December 1965 regulating clearing and wildland fires.
- Decree of 5 August 1932 regulating the exploitation of mangrove stands.
- Order of October 21, 1931, regulating the mode of exploitation of sandalwood.

2.2.3 Agricultural and rural development

- Law no. 95-009 / AF on the creation, organization and operation of the National Research Institute for Agriculture, Fisheries and the Environment (INRAPE).
- Order No. 14-002 / VP-MFEBICEP / CAB of 21 January 2014 laying down the method of collecting and distributing the royalties due to the Chambers of Commerce, Industry and Agriculture.

- Decree No. 00-062 / EC on provisional administration of the Chambers of Commerce, Industry and Agriculture (CCIA) and the Union of Chambers of Commerce, Industry and Agriculture (UCCIA).

2.2.4 Policies

- National Strategy and Action Plan for the Conservation of Biological Diversity (SPANB / PA, COMOROS 2016).
- National Action Plan to Combat Desertification in the Comoros PAN / LCD.
- Comoros Union Forestry Policy Statement
- Poverty Reduction and Growth Strategy (PRGS).
- National Policy of Equity and Gender Equality (PNEEG).
- National Climate Change Adaptation Program (PANA)
- National Strategy and Action Plan for the Conservation of Biological Diversity (2000).

2.2.4.1 Wild species and ecosystems

- Decree No. 79-019 prohibiting the capture of sea turtles in the territorial waters of the Comoros, as well as in neighboring international waters.
- Decree No. 47-2254 regulating hunting in the African territories under the Ministry of Overseas France as amended by Decree No. 54-1920 of 24 December 1954.
- Interdepartmental Order No. 92-015, which provides for an absolute ban on fishing, the capture and marketing of certain marine species and the degradation of the coastline.

2.3 ENVIRONMENTAL IMPACT ASSESSMENT IN COMOROS

48. Comoros has framework environmental legislation and several other laws that deal with environmental assessment and land based pollution.
49. The Framework Environmental Law (Law No. 94-018 of 23 June 1994) aims to preserve the diversity and environmental integrity of the Comoros, manage the utilisation of natural resources for the present and future generations, and guarantee to all citizens, a safe and balanced living environment. A Decree on EIA Regulations was passed in 2001 (Decree No.1-052/CE).
50. The Framework Environmental Law provides for mandatory impact assessment study for major coastal and other developments that have or are likely to have environmental impacts, and prescribes penalties for breach of its provisions. In this regard power is vested in the Director General of Environment to ensure compliance.
51. The environmental impact assessment (EIA) is an instrument established by Act No. 94-018 to ensure better integration of environmental considerations development, better use of resources and proper management of space.

2.4 MULTILATERAL AGREEMENTS AND BIODIVERSITY PROTOCOLS

52. The Government of Comoros is a signatory to a number of international and regional agreements and conventions, which are related to the environment and the project. They include:
 - 1968 African Convention On The Conservation Of Nature And Natural Resources
 - 1971 Convention On Wetlands Of International Importance Especially As Waterfowl Habitat
 - 1972 Convention For The Protection Of The World Cultural And Natural Heritage
 - 1973 Convention On International Trade In Endangered Species Of Wild Fauna And Flora
 - 1985 Convention For The Protection Of The Ozone Layer

- 1985 Convention For The Protection, Management And Development Of The Marine And Coastal Environment Of The Eastern African Region
- 1985 Protocol Concerning Protected Areas And Wild Fauna And Flora to the Convention For The Protection, Management And Development Of The Marine And Coastal Environment Of The Eastern African Region
- 1987 Montreal Protocol On Substances That Deplete The Ozone Layer
- 1989 Convention On The Control Of Transboundary Movements Of Hazardous Wastes And Their Disposal
- 1992 United Nations Framework Convention On Climate Change
- 1992 Convention On Biological Diversity
- 1994 Instrument For The Establishment Of The Restructured Global Environment Facility
- 1994 Convention To Combat Desertification In Those Countries Experiencing Serious Drought And/Or Desertification, Particularly In Africa
- 1997 International Plant Protection Convention
- 2000 Cartagena Protocol on Biosafety to the Convention On Biological Diversity
- 2000 Memorandum Of Understanding Concerning The Conservation And Management Of Marine Turtles And Their Habitats Of The Indian Ocean And Southeast Asia
- 2001 Convention On Persistent Organic Pollutants
- 2003 African Convention On The Conservation Of Nature And Natural Resources
- 2015 Paris Agreement under the United Nations Framework Convention on Climate Change

3 IMPLEMENTATION AND OPERATION

3.1 GENERAL MANAGEMENT STRUCTURE AND RESPONSIBILITIES

53. A high level project organisational structure is shown in Figure 5. The key roles are discussed below.

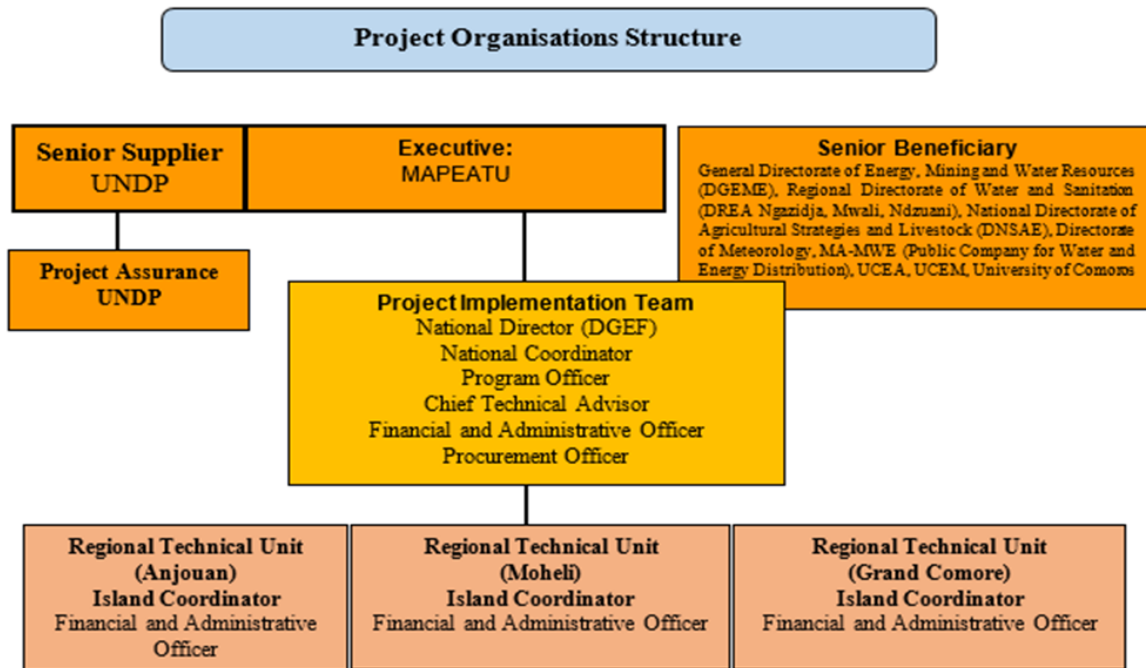


Figure 5 Project organisation structure

54. The **Executing Party** for this project is the Ministry of Agriculture, Fisheries, Environment and Land and Urban Development (MAPEATU).
55. The **Project Steering Committee (PSC)** established by a Ministerial Order will be directed by MAPEAU and will be responsible for approving reports and activities. It will also provide guidance for proper implementation of the project. Members of the Project Steering Committee will include UNDP, representatives from the Ministries of Environment, Economy, Transport, Health and Interior as well as Water and Electricity of Comoros Agency (MA-MWE), Anjouan Water User Association (UCEA), Moheli Water User Association (UCEM) and Electricity of Anjouan (EDA). The PSC will be responsible for making management decisions for the project, in particular when guidance is required by the PIT. The PSC plays a critical role in project monitoring and evaluation by quality-assuring processes and products and using evaluations for performance improvement, accountability and learning. The Committee will convene 2 times per year. Representatives from other institutions/organizations such as local Water User Associations can be included in the PSC as appropriate.
56. The main beneficiaries of this project will be the MAPEAU, the Water and Electricity of Comoros Agency (MA-MWE), the local Water Committees of Anjouan and Moheli (UCEM) and (UCEA), Electricity of Anjouan (EDA), the Direction of Meteorology as well as the local Water User Associations and CBOs. The Project Steering Committee, led by MAPEAU, will be responsible for approving program activities. Based on the approved activities, the Project Implementation Team (PIT) will ensure the provision of funds to all institutions/organizations for their respective activities. All executing agencies will be responsible for managing tasks allocated to their institution/organization. The UNDP Comoros Programme Officer will be responsible for Project Assurance.
57. The Implementing Partner (IP) for this project will be the Directorate of Environment and Forests (DGEF), which will have project ownership and will appoint a Project Manager (PM) to coordinate project operations.

58. The **Project Manager** has the authority to run the project on a day-to-day basis. The PM is accountable to UNDP, the IP and the PSC for the quality, timeliness and effectiveness of the activities carried out, as well as for the use of funds. He/she will also be responsible for coordinating budgets and work plans at the island level with the **Island Coordinators**. The PM will be assisted by a Chief Technical Advisor, a Procurement Officer and a Financial and Administrative Assistant. **Three technical committees, one from each island** will provide financial and technical support to the PIT.

3.1.1 Project Assurance

59. The 'project assurance' function of UNDP is to support the PSC by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. Project assurance has to be independent of the Project Manager; therefore, the PSC cannot delegate any of its assurance responsibilities to the Project Manager. Furthermore, as the Senior Supplier, UNDP provides quality assurance for the project; ensures adherence to the NIM guidelines and ensures compliance with GCF and UNDP policies and procedures.
60. A UNDP Programme Officer, or M&E Officer, typically holds the Project Assurance role on behalf of UNDP.

3.2 PROJECT DELIVERY AND ADMINISTRATION

3.2.1 Project Delivery

61. The project will be delivered on the ground via the DGEF through its subsidiary departments and the Regional Technical Units. In addition, collaboration with island governments, existing NGOs and local communities is expected UNDP.

3.2.2 Administration of EMSF

62. As the implementing agency, DGEF will be responsible for responsible for the implementation with the EMSF via the delivery organisations.
63. The EMSF will be part of any tender documentation. The DGEF will be responsible for the revision or updates of this document during the course of work. It is the responsibility of the person to whom the document is issued to ensure it is the most up to date version.
64. The UNDP and DGEF are accountable for the provision of specialist advice on environmental and social issues to the delivery organisations (eg contractors and/or NGOs) and for environmental and social monitoring and reporting. The DGEF or its delegate will assess the environmental and social performance of the delivery organisations (eg contractors) in charge of delivering each component throughout the project and ensure compliance with the EMSF. During operations the delivery organisations will be accountable for implementation of the EMSF. Personnel working on the projects have accountability for preventing or minimising environmental and social impacts.
65. A Field Officer will be responsible for daily environmental inspections of the project/construction site. The DGEF or its delegate will cross check these inspections by undertaking monthly audits.
66. The delivery organisation eg contractor will maintain and keep all administrative and environmental records, which would include a log of complaints together with records of any measures taken to mitigate the cause of the complaints.
67. The delivery organisation will be responsible for the day to day compliance of the EMSF

3.2.3 Environmental procedures, site and activity-specific work plans/instructions

68. Environmental procedures provide a written method describing how the management objectives for a particular environmental element are to be obtained. They contain the necessary detail to be site or activity-specific and are required to be followed for all construction works. Site and activity-specific work plans and instructions are to be issued and will follow the previously successful work undertaking similar projects by the UNDP, AfDB, UNEP, and AFD

3.2.4 Environmental incident reporting

69. Any incidents, including non-conformances to the procedures of the EMSF are to be recorded using an Incident Record and the details entered into a register. For any incident that causes or has the potential to cause material or serious environmental harm, the Field officer shall notify the Project Manager as soon as possible. The delivery organisation/contractor must cease work until remediation has been completed as per the approval of DGEF.

3.2.5 Daily and weekly environmental inspection checklists

70. A daily environmental checklist is to be completed at each work site by the relevant camp officer and maintained within a register. A weekly environmental checklist is to be completed and will include reference to any issues identified in the daily checklists completed by the Field Officers. The completed checklist is to be forwarded to DGEF for review and follow-up if any issues are identified.

3.2.6 Corrective Actions

71. Any non-conformances to the EMSF are to be noted in weekly environmental inspections and logged into the register. Depending on the severity of the non-conformance, the Field officer may specify a corrective action on the weekly site inspection report. The progress of all corrective actions will be tracked using the register. Any non-conformances and the issue of corrective actions are to be advised to DGEF.

3.2.7 Review and auditing

72. The EMSF and its procedures are to be reviewed at least every two months by UNDP staff and DGEF. The objective of the review is to update the document to reflect knowledge gained during the course of project delivery/construction and to reflect new knowledge and changed community standards (values).
73. The EMSF will be reviewed and amendments made if:
- There are relevant changes to environmental conditions or generally accepted environmental practices; or
 - New or previously unidentified environmental risks are identified; or
 - Information from the project monitoring and surveillance methods indicate that current control measures require amendment to be effective; or
 - There are changes to environmental legislation that are relevant to the project; or
 - There is a request made by a relevant regulatory authority; or
 - Any changes are to be developed and implemented in consultation with UNDP Staff and DGEF. When an update is made, all site personnel are to be made aware of the revision as soon as possible eg through a tool box meeting or written notification.

3.3 TRAINING

74. Delivery organisations have the responsibility for ensuring systems are in place so that relevant employees, contractors and other workers are aware of the environmental and social requirements for construction, including the EMSF.
75. All project personnel will attend an induction that covers health, safety, environment and cultural requirements.
76. All workers engaged in any activity with the potential to cause serious environmental harm (e.g. handling of hazardous materials) will receive task specific environmental training.

4 COMMUNICATION

4.1 PUBLIC CONSULTATION AND ENVIRONMENTAL AND SOCIAL DISCLOSURE

77. Consultation with relevant stakeholders, such as government agencies, CBOs, NGOs and village groups has been undertaken as part of the development of the project.
78. The project, through enforcement of the reformed Water Code and the Decentralization Strategy of the Comoros will ensure participation with existing Water User Associations and Women's Groups to create sustainable and fair water tariff scheme and equitable water supply schemes. The Integrated Water Resources Management Committees will have a minimum of 30% women representation in addition to cross-sectoral representatives to determine the most effective and equitable water supply mechanisms for subsistence agriculture.
79. The EMSF includes public consultation as part of the social management mitigation measures. The project was discussed with a wide range of stakeholders including relevant government departments, industry groups, NGOs, and individual community members and approved by Government. Extensive on-ground consultation has been undertaken during the design of the project (as well as during the earlier projects that this project is aiming to upscale) and it is expected that consultation with any affected communities will continue. It is anticipated that based on the communities' needs, the projects will be fully accepted.
80. The UNDP and DGEF will develop and release updates on the project on a regular basis to provide interested stakeholders with information on project status. Updates may be via a range of media eg print, radio, social media or formal reports. A publicized telephone number will be maintained throughout the project to serve as a point of contact for enquiries, concerns and complaints. All enquiries, concerns and complaints will be recorded on a register and the appropriate manager will be informed. All material must be published in French and Comorian as appropriate.
81. Where there is a community issue raised, the following information will be recorded:
- time, date and nature of enquiry, complaint or concern;
 - type of communication (e.g. telephone, letter, personal contact);
 - name, contact address and contact number;
 - response and investigation undertaken as a result of the enquiry, complaint or concern; and
 - actions taken and name of the person taking action.
82. Some enquiries, complaints and concerns may require an extended period to address. The complainant(s) will be kept informed of progress towards rectifying the concern. All enquiries, complaints and concerns will be investigated and a response given to the complainant in a timely manner. A grievance redress mechanism has been included in the ESMF to address any complaints that may not be able to be resolved quickly.
83. Nominated PIT/contractor staff will be responsible for undertaking a review of all enquiries, complaints and concerns and ensuring progress toward resolution of each matter.

4.2 COMPLAINTS REGISTER AND GRIEVANCE REDRESS MECHANISM

84. During the construction and implementation phases of any project, a person or group of people can be adversely affected, directly or indirectly due to the project activities. The grievances that may arise can be related to social issues such as eligibility criteria and entitlements, disruption of services, temporary or permanent loss of livelihoods and other social and cultural issues. Grievances may also be related to environmental issues such as excessive dust generation, damages to infrastructure due to construction related vibrations or transportation of raw material, noise, traffic congestions, decrease in quality or quantity of private/ public surface/ ground water resources during irrigation rehabilitation, damage to home gardens and agricultural lands etc.
85. Should such a situation arise, there must be a mechanism through which affected parties can resolve such issues in a cordial manner with the project personnel in an efficient, unbiased, transparent, timely

and cost-effective manner. To achieve this objective, a grievance redress mechanism has been included in EMSF for this project.

86. The project allows those that have a complaint or that feel aggrieved by the project to be able to communicate their concerns and/or grievances through an appropriate process. The Complaints Register and Grievance Redress Mechanism set out in this EMSF are to be used as part of the project and will provide an accessible, rapid, fair and effective response to concerned stakeholders, especially any vulnerable group who often lack access to formal legal regimes.
87. While recognising that many complaints may be resolved immediately, the Complaints Register and Grievance Redress Mechanism set out in this EMSF encourages mutually acceptable resolution of issues as they arise. The Complaints Register and Grievance Redress Mechanism set out in this EMSF has been designed to:
 - be a legitimate process that allows for trust to be built between stakeholder groups and assures stakeholders that their concerns will be assessed in a fair and transparent manner;
 - allow simple and streamlined access to the Complaints Register and Grievance Redress Mechanism for all stakeholders and provide adequate assistance for those that may have faced barriers in the past to be able to raise their concerns;
 - provide clear and known procedures for each stage of the Grievance Redress Mechanism process, and provides clarity on the types of outcomes available to individuals and groups;
 - ensure equitable treatment to all concerned and aggrieved individuals and groups through a consistent, formal approach that, is fair, informed and respectful to a complaint and/or concern;
 - to provide a transparent approach, by keeping any aggrieved individual/group informed of the progress of their complaint, the information that was used when assessing their complaint and information about the mechanisms that will be used to address it; and
 - enable continuous learning and improvements to the Grievance Redress Mechanism. Through continued assessment, the learnings may reduce potential complaints and grievances.
88. Eligibility criteria for the Grievance Redress Mechanism include:
 - Perceived negative economic, social or environmental impact on an individual and/or group, or concern about the potential to cause an impact;
 - clearly specified kind of impact that has occurred or has the potential to occur; and explanation of how the project caused or may cause such impact; and
 - individual and/or group filing of a complaint and/or grievance is impacted, or at risk of being impacted; or the individual and/or group filing a complaint and/or grievance demonstrates that it has authority from an individual and or group that have been or may potentially be impacted on to represent their interest.
89. Local communities and other interested stakeholders may raise a grievance/complaint at all times to the DGEF. Affected local communities should be informed about the EMSF provisions, including its grievance mechanism and how to make a complaint.

4.2.1 Complaints register

90. Where there is a community issue raised, the following information will be recorded:
91. A complaints register will be established as part of the project to record any concerns raised by the community during construction. Any complaint will be advised to the UNDP and DGEF within 24 hours of receiving the complaint. The complaint will be screened. Following the screening, complaints regarding corrupt practices will be referred to the UNDP for commentary and/or advice along with the DGEF.
92. Wherever possible, the project team will seek to resolve the complaint as soon as possible, and thus avoid escalation of issues. However, where a complaint cannot be readily resolved, then it must be escalated.
93. A summary list of complaints received and their disposition must be published in a report produced every six months.

4.2.2 Grievance mechanism

94. The Grievance Redress Mechanism has been designed to be problem-solving mechanism with voluntary good-faith efforts. The Grievance Redress Mechanism is not a substitute for the legal process. The Grievance Redress Mechanism will as far as practicable, try to resolve complaints and/or grievances on terms that are mutually acceptable to all parties. When making a complaint and/or grievance, all parties must act at all times, in good faith and should not attempt to delay and or hinder any mutually acceptable resolution.
95. In order to ensure smooth implementation of the Project and timely and effectively addressing of problems that may be encountered during implementation, a robust Grievance Redress Mechanism, which will enable to the Project Authorities to address the grievances of the stakeholders of the Project has been established.
96. All complaints regarding social and environmental issues can be received either orally (to the field staff), by phone, in complaints box or in writing to the UNDP, DGEF or the Construction Contractor. A key part of the grievance redress mechanism is the requirement for the project proponent and construction contractor to maintain a register of complaints received at the respective project site offices. All complainants shall be treated respectfully, politely and with sensitivity. Every possible effort should be made by the project proponent and construction contractor to resolve the issues referred to in the complaint within their purview. However, there may be certain problems that are more complex and cannot be solved through project-level mechanisms. Such grievances will be referred to the Grievance Redress Committee. It would be responsibility of the DGEF to solve these issues through a sound / robust process.
97. The Grievance Redress Mechanism has been designed to ensure that an individual and/or group are not financially impacted by the process of making a complaint. The Grievance Redress Mechanism will cover any reasonable costs in engaging a suitably qualified person to assist in the preparation of a legitimate complaint and/or grievance. Where a complaint and/or grievance is seen to be ineligible, the Grievance Redress Mechanism will not cover these costs.
98. Information about the Grievance Redress Mechanism and how to make a complaint must be placed at prominent places for the information of the key stakeholders.
99. The Safeguards officer in the PIT will be designated as the key officer in charge of the Grievance Redress Mechanism. The Terms of Reference for these positions (as amended from time to time) will have the following key responsibilities:
 - a. coordinate formation of Grievance Redress Committees before the commencement of constructions to resolve issues;
 - b. act as the focal point at the PIT on Grievance Redress issues and facilitate the resolution of issues within the PIT;
 - c. create awareness of the Grievance Redress Mechanism amongst all the stakeholders through public awareness campaigns;
 - d. assist in redress of all grievances by coordinating with the concerned parties;
 - e. maintain information on grievances and redress;
 - f. monitor the activities of DGEF on grievances issues; and
 - g. prepare the progress for monthly/quarterly reports.
100. A two tier Grievance Redress Mechanism structure has been developed to address all complaints in the project. The project GRM will be initiated once confirmation of the project proceeding has been received ie when funding is confirmed. The availability of the project level GRM will be communicated to communities in the project areas as part of the project initiation announcements and subsequent consultation activities, including but not limited to news media announcements, project newsletters, website, via user groups and other interest groups, workshops and face-to-face meetings. Details of GRM contacts will be included on any project signage that is erected. Until the project GRM is initiated, communities have the option of utilising the UNDP's Accountability Mechanism, which is already in place and is described later in this document.
101. The first trier redress mechanism involves the receipt of a complaint at the project and/or Commune level. The stakeholders are informed of various points of making complaints (if any) and

- the PIT collect the complaints from these points on a regular basis and record them. This is followed by coordinating with the concerned people to redress the Grievances. The Safeguards Officer of the PIT will coordinate the activities at the respective District level to address the grievances and would act as the focal point in this regard. The Community Development Officer of the Local Authority or in the absence of the Community Development Officer, any officer given the responsibility of this would coordinate with the Safeguards and Gender Manager of the PIT and DGEF in redressing the grievances. The designated officer of the Local Authorities is provided with sufficient training in the procedure of redress to continue such systems in future.
102. The complaints can be made orally (to the field staff), by phone, in complaints box or in writing to the UNDP, DGEF or the Construction Contractor. Complainants may specifically contact the Safeguards Officer and request confidentiality if they have concerns about retaliation. In cases where confidentiality is requested (i.e. not revealing the complainant's identity to UNDP, DGEF and/or the Construction Contractor). In these cases, the Safeguards Officer will review the complaint, discuss it with the complainant, and determine how best to engage project executing entities while preserving confidentiality for the complainant.
 103. As soon as a complaint is received, the Safeguards Officer would issue an acknowledgement. The Community Development Officer receiving the complaint should try to obtain relevant basic information regarding the grievance and the complainant and will immediately inform the Safeguards Officer in the PIT.
 104. The PIT will maintain a Complaint / Grievance Redress register at the Island. Keeping records collected from relevant bodies is the responsibility of PIT.
 105. After registering the complaint, the Safeguards Officer will study the complaint made in detail and forward the complaint to the concerned officer with specific dates for replying and redressing the same. The Safeguards Officer will hold meetings with the affected persons / complainant and then attempt to find a solution to the complaint received. If necessary, meetings will be held with the concerned affected persons / complainant and the concerned officer to find a solution to the problem and develop plans to redress the grievance. The deliberations of the meetings and decisions taken are recorded. All meetings in connection with the Grievance Redress Mechanism, including the meetings of the Grievance Redress Committee, must be recorded. The Safeguards Officer for the Grievances Redress Mechanism will be actively involved in all activities.
 106. The resolution at the first tier will be normally be completed within 15 working days and the complaint will be notified of the proposed response through a disclosure form. The resolution process should comply with the requirements of the Grievance Redress Mechanism in that it should, as far as practicable, be informal with all parties acting in good faith. Further, the Grievance Redress Mechanism should, as far as practicable, achieve mutually acceptable outcomes for all parties.
 107. Should the grievance be not resolved within this period to the satisfaction of the complainant, the grievance will be referred to the next level of Grievance Redress Mechanism. If the social safeguard and gender officer feels that adequate solutions can be established within the next five working days, the officer can decide on retaining the issue at the first level by informing the complainant accordingly. However, if the complainant requests for an immediate transfer to the next level, the matter must be referred to the next tier. In any case, where the issue is not addressed within 20 working days, the matter is referred to the next level.
 108. Any grievance related to corruption or any unethical practice should be referred immediately to the Office of the Attorney General and the Office of Audit and Investigation within the UNDP in New York.
 109. The Grievance Redress Committee formed at every sub-district level would address the grievance in the second tier.
 110. The Safeguard Officer from the PIT will coordinate with the respective Commissioner of Local Government in getting these Committees constituted for each island and get the necessary circulars issued in this regard so that they can be convened whenever required.
 111. The Terms of Reference for the Grievance Redress Committee are:
 - a. providing support to the affected persons in solving their problems;
 - b. prioritize grievances and resolve them at the earliest;

- c. provide information to the PIT and DGEF on serious cases at the earliest opportunity;
 - d. Coordinate with the aggrieved person/group and obtain proper and timely information on the solution worked out for his/her grievance; and
 - e. study the normally occurring grievances and advise PIT, National and District Steering Committee on remedial actions to avoid further occurrences.
112. The Grievance Redress Committee will hold the necessary meetings with the aggrieved party/complainant and the concerned officer and attempt to find a solution acceptable at all levels. The Grievance Redress Committee would record the minutes of the meeting.
113. Grievance Redress Committee will communicate proposed responses to the complainant formally. If the proposed response satisfies the complainant, the response will be implemented and the complaint closed. In cases where a proposed response is unsatisfactory to the complainant, the Grievance Redress Committee may choose to revise the proposed response to meet the complainant's remaining concerns, or to indicate to the complainant that no other response appears feasible to the Grievance Redress Committee. The complainant may decide to take a legal or any other recourse if s/he is not satisfied with the resolutions due to the deliberations of the three tiers of the grievance redress mechanism.
114. In addition to the project-level and national grievance redress mechanisms, complainants have the option to access UNDP's Accountability Mechanism, with both compliance and grievance functions. The Social and Environmental Compliance Unit investigates allegations that UNDP's Standards, screening procedure or other UNDP social and environmental commitments are not being implemented adequately, and that harm may result to people or the environment. The Social and Environmental Compliance Unit is housed in the Office of Audit and Investigations, and managed by a Lead Compliance Officer. A compliance review is available to any community or individual with concerns about the impacts of a UNDP programme or project. The Social and Environmental Compliance Unit is mandated to independently and impartially investigate valid requests from locally impacted people, and to report its findings and recommendations publicly.
115. The Stakeholder Response Mechanism offers locally affected people an opportunity to work with other stakeholders to resolve concerns about the social and environmental impacts of a UNDP project. Stakeholder Response Mechanism is intended to supplement the proactive stakeholder engagement that is required of UNDP and its Implementing Partners throughout the project cycle. Communities and individuals may request a Stakeholder Response Mechanism process when they have used standard channels for project management and quality assurance, and are not satisfied with the response (in this case the project level grievance redress mechanism). When a valid Stakeholder Response Mechanism request is submitted, UNDP focal points at country, regional and headquarters levels will work with concerned stakeholders and Implementing Partners to address and resolve the concerns. Visit www.undp.org/secu-srm for more details. The relevant form is attached at the end of the EMSF.
116. The UNDP's Accountability Mechanism described above has been available to communities during the project proposal development phase and will continue to be available throughout the project implementation and beyond.

5 KEY ENVIRONMENTAL AND SOCIAL INDICATORS

117. This section identifies the key environmental and social indicators identified for the project and outlines respective management objectives, potential impacts, control activities and the environmental performance criteria against which these indicators will be judged (i.e. audited).
118. This section further addresses the need for monitoring and reporting of environmental performance with the aim of communicating the success and failures of control procedures, distinguish issues that require rectification and identify measures that will allow continuous improvement in the processes by which the projects are managed.

5.1 CLIMATE

119. In Comoros, the year is marked by two main seasons: a cooler, dry period between May and October and a warmer, humid season between November and April. In November the summer monsoon brings the highest afternoon temperatures — about 33 °C. The highest monthly rainfall occurs in January with approximately 275–375 mm, and the rainy season is the season of greatest tropical-cyclone frequency. Dry season daily maximum temperatures fall to their lowest, about 29 °C, in July. The average annual rainfall varies between 1,100 and 2,900 mm, being highest on the windward northeast sides of the islands.
120. The islands in the archipelago of the Comoros are exposed during the rainy season to floods, tropical storms and cyclones. Notwithstanding, they are quite rare because of the protection offered by Madagascar. The average frequency of cyclones is 10 to 12 years.

5.2 SURFACE WATER

5.2.1 Background

121. In Comoros, there are essentially three sources of supply:
 - surface waters
 - groundwater
 - the collection of rainwater.
122. The supply source varies with island. Generally, Anjouan and Moheli depend on surface flows from sources or rivers, while Grande Comore population caters mainly from the collection of rainwater and groundwater.
123. Annual mean rainfall is over 1,000 mm on the three islands with maximum-recorded rainfall of 5,888 mm in Grande Comore, and over 3,000 mm in Anjouan and Moheli. However, rainfall varies considerably from one island to another and from one region to another within each island.
124. The natural drainage systems on each island depend on their geological age and soil composition. Whereas Anjouan and Moheli have permanent surface water bodies (rivers on Anjouan, rivers and lakes on Moheli), Grande Comore does not, as 95% of precipitation infiltrates into the soil due to its high permeability. Some of the numerous rivers on Anjouan and Moheli are permanent, but most are dry or in the process of drying up because of the massive and uncontrolled deforestation of watersheds and headwaters.
125. Although Grand Comore receives abundant rainfall (between approximately 1400 mm / year in the east of the island and almost 5900 mm / year in the west), the porosity of its soil leaves it devoid of exploitable surface waters. With a runoff coefficient, relating the surface runoff within a given catchment basin to the amount of rainfall it receives, as low as 5%, most rainfall percolates into the soil, feeding the groundwater reservoirs.
126. The islands of Anjouan and Moheli have abundant surface water networks that have long been the main source of water for the population.
127. According to studies outlined in the PEAPA annex 1, exploitable surface water resources for drinking water supply on the island of Anjouan are estimated at 128,158,580 m³/year, compared to 228,543,945 m³/year total surface water resources. The PEAPA report estimated surface water exploitation rates on Anjouan at 1.2%.
128. Exploitable surface water resources for drinking water on Mohéli are estimated at 41,386,003 m³/year, compared to 78,536,563 m³/year total surface water resources. Of these, only 1.9% were estimated as being exploited by the PEAPA report.
129. River intakes typically consist of a small weir and a sedimentation structure (Figure 6). Water is then piped via gravity to concrete or steel tanks.



Figure 6 Typical river intake structure.

5.2.2 Performance Criteria

130. The following performance criteria are set for the construction of the projects:

- no significant decrease in water quality as a result of construction and operational activities;
- water quality shall conform to any approval conditions stipulated by UNDP, DGEF and/or other government departments, or in the absence of such conditions follow a ‘no worsening’ methodology; and
- effective implementation of site-specific EDSCPs.

5.2.3 Monitoring

131. Having water of a quality that is fit for purpose is important. Water quality can affect plant growth, livestock health, soil quality, farm equipment and domestic use. The quality of a water source is also variable depending upon weather and external inputs.

132. Evaporation increases the concentrations of salts while a flush of water dilutes salts but may increase sediment and fertilisers, and manure or nutrient runoff. Monitoring should be done regularly and more frequently in summer or in periods of prolonged moisture stress.

133. Table 7 outlines the monitoring required.

5.2.4 Reporting

134. All water quality monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The DGEF must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded.

Table 7 Water Quality Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
W1: Elevated suspended solids and other contaminants in surface water systems.	W1.1: Develop and implement a site specific Erosion, Drainage and Sediment Control Plan (EDSCP) to address drainage control, sediment and erosion controls and stockpiling of materials including soil during construction of all components of the projects. EDSCP measures to be inspected regularly to ensure all devices are functioning effectively.	Pre-Earthworks	Field officer	Initial set up and then as required with reporting to DGEF and UNDP
	W1.2: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	Entire construction and operation phase	All Personnel	Weekly with reporting to DGEF and UNDP
	W1.3: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted including assessing the changes to groundwater quality.	Entire construction and operation phase	Field officer	Weekly and as required with reporting to DGEF and UNDP
	W1.4: Schedule works in stages to ensure that disturbed areas are revegetated and stabilised progressively and as soon as practicable after completion of works.	Avoid undertaking bulk earthworks during wet season	Field officer and DGEF	Maintain records
	W1.5: Construction materials will not be stockpiled in proximity to aquatic environment that may allow for release into the environment. Construction equipment will be removed from in proximity to the aquatic environment at the end of each working day or if heavy rainfall is predicted	Entire construction and operation phase	Field officer	Maintain daily records

5.3 GROUNDWATER

5.3.1 Background

5.3.1.1 Geology

135. The Comoros archipelago consists of four volcanic islands – Grande Comore, Moheli, Anjouan and Mayotte (French territory). These are extended to the east by several emergent (Glorieuses, Geyser) and submerged (Zélée, Leven, Cordelière) reef-banks.
136. Geologically, the islands and banks have complex origins. Hypotheses include classic plate movement over the Comoros hotspot over the last 15 my, versus alkaline basaltic magma extrusion along north-west fractures remaining from southward movement of Madagascar relative to the African mainland, periodically active during the Tertiary. The age of the Comorian islands increases from west to east. The formation of Mayotte started with submarine volcanism from 15 to 10 million years ago, then sub-aerial island formation around 8 million years ago. Grand Comore is the youngest, formed c. 130,000 years ago by two active volcanoes, Karthala which is still active, and La Grille, now dormant and to the north. West of Grande Comore, and rising to 10 m below the surface is the Banc Vailheu, likely the youngest seamount being produced by the Comoros hotspot. The archipelago marks the boundary between the Mesozoic oceanic Somali Basin to the north and the continental substratum of the Mozambique channel floor¹.

5.3.1.2 Groundwater

137. All three islands have underground aquifers, but these have not been extensively studied, with the exception of Grande Comore where part of the aquifer is exploited.² Project specific groundwater studies have not been undertaken, however there have been a number of studies done and earlier pilot programmes that provide insight into groundwater conditions. The project only proposes a groundwater component on Grande Comores, therefore discussion here will be limited to that island.
138. The following information has been drawn from Comte Cassidy *et al* 2016. In Grande Comore island, aquifers are composed of young volcanic rocks organised in three volcanic massifs of different ages (Figure 7). The Mbadjini massif is the oldest of these (Miocene) and outcrops at limited locations in the south-east of the island. It is characterised by deep weathering, which makes it difficult to distinguish the individual lava flows.
139. The La Grille massif is of intermediate age (Mid-Pleistocene) and outcrops in the north of the island. The degree of weathering varies from moderate to low depending on the chronology of flow emplacement. The Karthala massif is the youngest (Quaternary), and active, volcano on the island characterised by a low degree or absence of weathering of the lava flows. Water wells on the island are mostly deep (50–100 m), hand-dug, large-diameter wells excavated in the 1980s. Very large spatial variations in groundwater salinities are observed among the wells, which can be related to some extent to geological heterogeneity.
140. In Grande Comore, all wells are located within a few kilometres of the coast due to the much higher topographic gradients compared to hydraulic gradients. This necessitates a large increase in well depths with distance from the coast to reach water, and much higher associated costs. In the Mbadjini massif, groundwater salinity is generally low (<2 gL⁻¹) due to the intensity of weathering resulting in reduced aquifer permeability and, therefore, reduced seawater intrusion due to higher hydraulic gradients. In addition, the weathering of the Mbadjini massif promotes the development of perched aquifers within more recent lava flows that overlie and are disconnected from the basal aquifer which has been subjected to seawater intrusion. In the La Grille and Karthala massifs, water wells have higher salinities (generally above 2 gL⁻¹) except on the western flank of the Karthala massif, which experiences higher rainfall. Seawater intrusion in those two massifs is promoted by the high permeabilities of the lava flows and limited weathering; it is reduced by the rainfall intensity notably higher on the western flank of the Karthala volcano due to its exposure to dominant south westerly winds and its high elevation. Important spatial variations of salinities can be noted and attributed to

¹ http://www.vliz.be/projects/marineworldheritage/sites/1.3_Comoros%20and%20Mayotte.php?item=The%20Indian%20Ocean

² UNEP, 2002, “Atlas des ressources côtières”

the complexity of imbrication of lava flows of different ages resulting in different degrees of weathering and associated permeabilities.

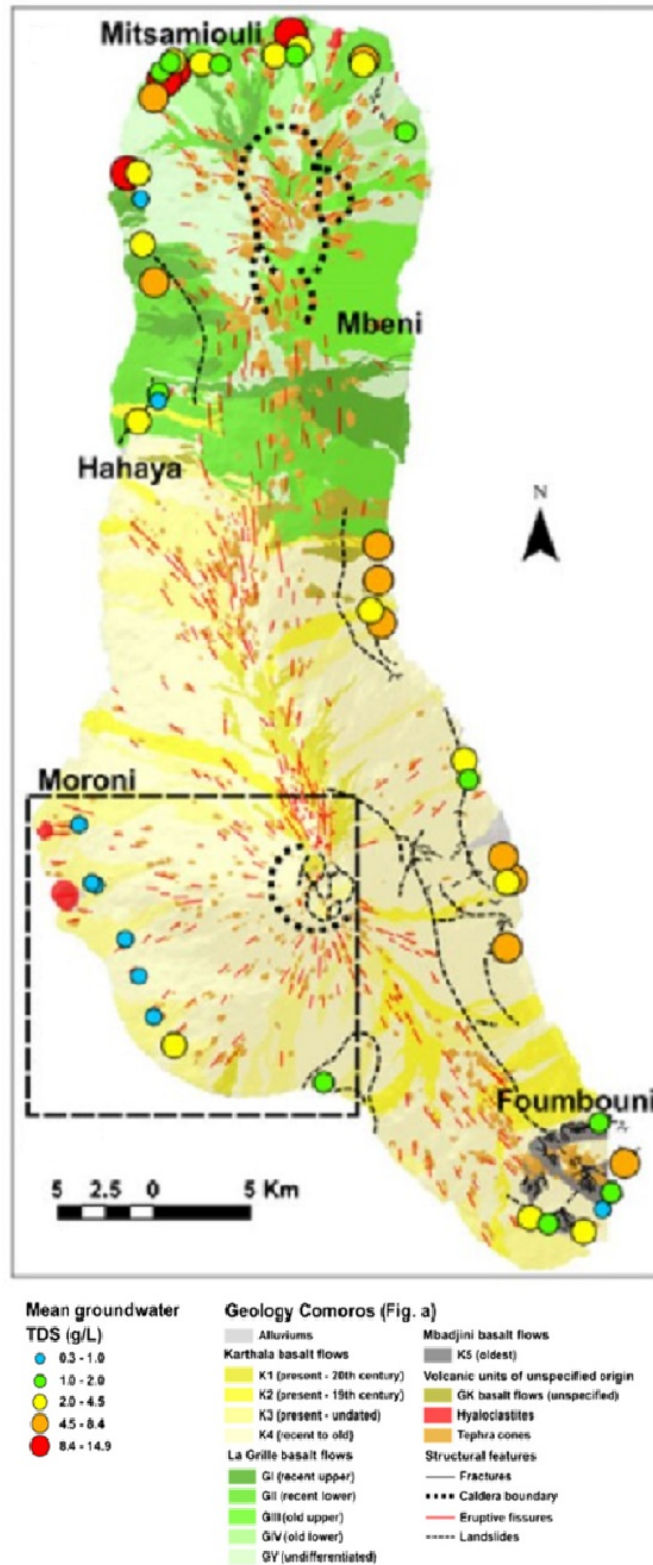


Figure 7: Overview of the main geological units and groundwater salinities of surveyed wells in Grande Comores Island. Dashed box indicates more detailed area shown in Figure 4 below. Source: Comte Cassidy et al. 2016.

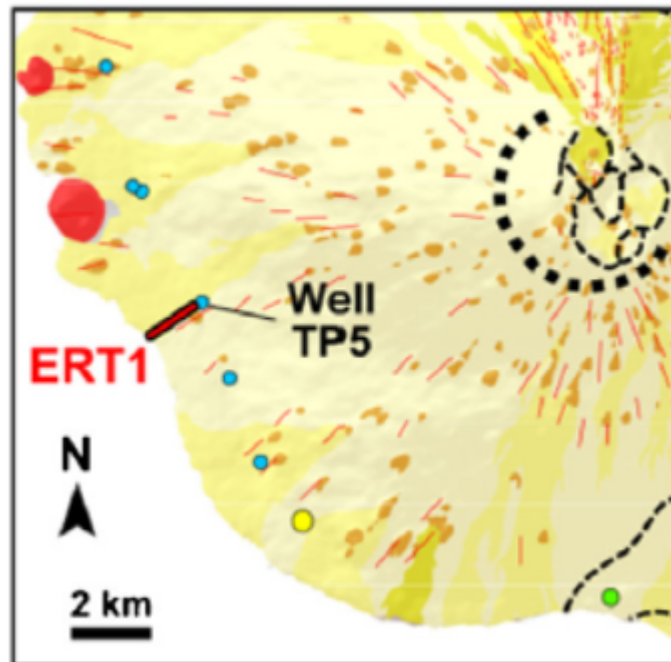


Figure 8: Area of detailed hydrogeological investigations, including geophysical profiling (ERT) and high frequency temporal groundwater monitoring in (a) well TP5, Vouvouni area, Grande Comore. Source *Compte Cassidy et al 2016*.

141. In the Vouvouni area, south west of Grande Comore Island (Figure 8), the volcanic aquifer is characterised by a thick (from 10 m at the sea cliffs up to 50 m at 1 km from the shoreline) and highly resistive (>1000 m) unsaturated zone. The transition zone between freshwater-saturated and seawater-saturated basalts (50–1000 m) dips towards the centre of the island at a low angle. Freshwater thickness reaches a maximum of 30 m at 1 km from the coastline. This is consistent with the average low salinity measured in well TP5 ($\sim 0.2 \text{ g L}^{-1}$) located at a few hundred meters upslope of the north east end of the section and drilled within about 5–10 m below the water table. The Vouvouni area has the highest rainfall on Grande Comore (more than three times the average rainfall); therefore the freshwater thickness is less elsewhere on the areas of the island that are also underlain by the same young Karthala basalt flows.
142. Resistivity profiles clearly reveal a geological control on spatial patterns of seawater distribution in the various coastal aquifers. Other factors such as the distance to the coast and the average rainfall of the area also exert a control on distribution of saltwater within a specific geological unit. In Grande Comore island (Figure 9), strong correlations are observed within the two dominant volcanic units of Karthala and La Grille. This suggests relative aquifer homogeneity within individual geological units with the magnitude of seawater intrusion predominantly controlled by the aquifer recharge from rainfall and distance to sea.

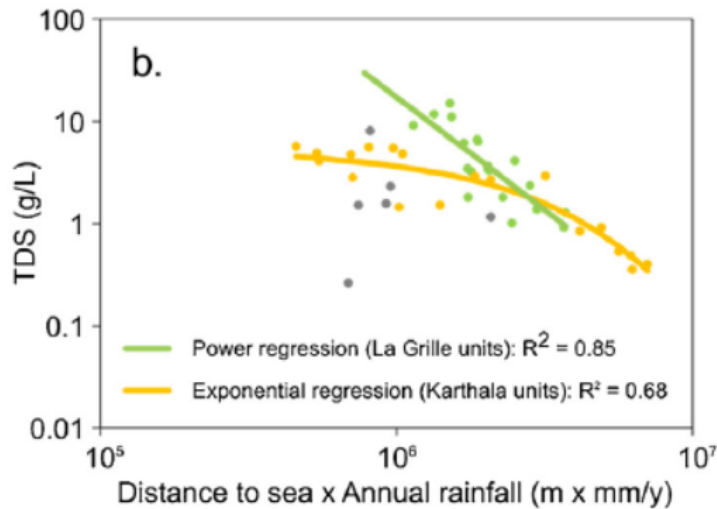


Figure 9: Correlations between borehole/well salinity, geology, distance to coast and rainfall from Comte Cassidy et al 2016.

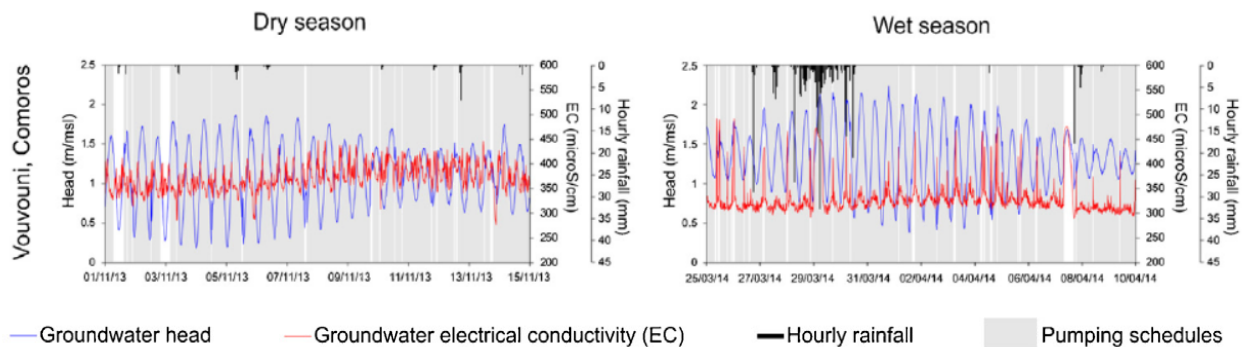


Figure 10: Time series of groundwater heads and electrical conductivities measured in TP5 along with hourly rainfall and pumping schedules for dry and wet seasons. Comte Cassidy et al 2016.

143. In well TP5 in Vouvouni (Figure 10), both groundwater heads and electrical conductivity fluctuations are primarily controlled by semi-diurnal tidal fluctuations. The high water table during the high tide is systematically accompanied by high electrical conductivity levels. This strong tidal control is promoted by high permeabilities and diffusivities in the volcanic aquifers. The short-term influence of rainfall is not visible, reflecting the large thickness of the unsaturated zone that results in diffuse recharge over time. Seasonal variations of heads and electrical conductivity can be noted with slightly higher water tables and slightly lower electrical conductivity during the wet seasons compared to the dry season.
144. TP5 is one of the most intensively pumped wells in Grande Comore. Pumping schedules are designed to minimise drawdowns (about 10 cm, due to high permeability and large diameter of the wells). More interestingly, pumping failures result in a sharp increase in salinity. This is a similar effect to the tidal fluctuations—a general rise in the water column results in a rise of more mineralized water from the base of the well.
145. In summary, the groundwater (heads and salinity) temporal behaviour in the volcanic aquifers of Grande Comore appears to be primarily controlled by the tidal fluctuations and secondary by the pumping regime.
146. On Grande Comore, about 65% of the population do not have permanent access to groundwater and primarily harvest rainwater from roofs into tanks, which are only sufficient during the wet season and have issues with bacterial contamination. During the dry season, water use is rationed. For families that can afford it, freshwater is distributed by water trucks delivering from the few fresh abstraction wells on the island. These comprise 54 wells drilled in the volcanic aquifers of the coastal zone which supply 20 localities representing about 35% of the island's population. Fewer than 30% of the wells provide groundwater of acceptable quality, i.e. Total Dissolved Solids (TDS) < 1 g L⁻¹

and consequently the local drinking water salinity guideline is usually taken at 3 g L⁻¹ instead of 1 g L⁻¹ as recommended by the World Health Organisation. Wells with higher salinity continue to be used for irrigation, livestock or washing.

147. The large variations in groundwater salinity are locally responsible for community conflicts with regard to water costs.

5.3.1 Performance Criteria

148. The following performance criteria are set for the project:

- no significant decrease in the quality and quantity of groundwater as a result of construction and operational activities in proximity to the projects;
- effective implementation of site-specific EDSCPs and other measures to protect groundwater.

149. By following the management measures set out in the EMSF the project will not have a significant impact on water quality across the broader area.

5.3.2 Monitoring

150. Refer to Table 8 for the monitoring requirements for groundwater.

151. Ongoing monitoring forms part of the operation of the boreholes.

5.3.3 Reporting

152. All water quality monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The DGEF must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded.

Table 8 Groundwater management measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
GW 1: Increase of gross pollutants, hydrocarbons, metals and other chemical pollutants into the groundwater and/or surface water environment.	GW1.1: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted, including assessing the changes to groundwater quality.	Construction and operation phase	Field officer	Weekly and as required with reporting to DGEF and UNDP
	GW1.2: Prevent contaminated surface water from entering aquifers via boreholes and wells - protect from runoff and flooding and keep surrounds clean.	All phases	All Personnel	Weekly
	GW1.3: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	Entire construction and operation phase	All Personnel	Weekly with reporting to DGEF and UNDP
	GW1.4: Check all vehicles, equipment and material storage areas daily for possible fuel, oil and chemical leaks. Undertake refuelling at designated places away from water systems.	All phases	All Personnel	Daily and maintain records
	GW 1.5: Minimise the use of herbicides and use only biodegradable herbicides that have minimal impact on water quality and fauna. Use only as per directions	All phases	All Personnel	Weekly reporting to DGEF and UNDP

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
GW2: Over/under extraction	GW2.1 Pump tests should be undertaken to ascertain sustainable flow rates.	Pre-construction/operation	Water authority	Maintain records
	GW2.3 Monitor groundwater extraction	Operation	Water authority	Daily

5.4 ECOLOGY

5.4.1 Background

153. As small volcanic islands, the Comoros are not home to a huge number of different species – the islands formed very recently in geological terms, so there hasn't been a lot of time for organisms to colonise – and they don't have native land mammals or amphibians as these disperse to isolated islands less easily. But the islands do have a number of endemic species (Table 9). The mammalian diversity of the Comoros, like most other young volcanic islands, is restricted to marine mammals and bats.

Table 9 Endemicity of the fauna in Anjouan, Grande Comore, and Mohéli (ECDD, BCSF & Durrell 2014)

	Endemic to the island	Endemic to the Comoros	Non-endemic	Total
Grande Comore				
Birds	16	7	6	29
Reptiles	2	1	3	6
Butterflies	10	1	12	23
Anjouan				
Birds	9	7	16	32
Reptiles	1	3	9	13
Butterflies	9	5	20	34
Mohéli				
Birds	13	6	12	31
Reptiles	1	0	3	4
Butterflies	1	5	10	16

154. The rich volcanic soils on the islands foster the growth of a profuse vegetation. Generally speaking, the Comoros is characterised by dense vegetation, usually green and very diverse, which varies depending on the type of soil and microclimate that are numerous on the islands. Beyond the coastal zones, there are coconut palms, mangoes, and bananas, and above them is a forest zone, with many varieties of tropical hardwoods. Broom, lichens, and heather grow on the highest peaks.

155. The Comoro Islands form part of the Madagascar hotspot of biodiversity which includes other islands in the Western Indian Ocean. This area is considered one of the five 'hottest hotspots' globally because of the extremely high number of species found here and nowhere else on the planet. The animals and plants which made it to the islands were then cut off from the rest of their kind, and many evolved independently into entirely new species. However, their evolution in isolation also makes them extremely vulnerable to changes to their environment and new threats.

156. Sixteen endemic bird species are found across the three islands of the Union of the Comoros, some restricted to only one of the islands. Striking examples are the scops owls – a different species evolved on each island: the Karthala scops owl, the Mohéli scops owl and the Anjouan scops owl, which are now classed as Critically Endangered on the IUCN's red list of endangered species.

157. There are a variety of fruit bat species on Indian Ocean islands, but the biggest is Livingstone's fruit bat (*Pteropus livingstonii*), which evolved in the Comoros and is found only on Anjouan and Mohéli. With a wingspan of up to 1.4 metres, it is one of the largest bats in the world, and a flagship species for conservation in the Comoros. The Livingstone Bat is considered to be essential in the regeneration of forests.³

158. There are three wetland zones of international importance (RAMSAR) on the islands that ecological importance by regulating hydrological regimes and offering recharge areas.⁴ They are:

- Lake Dziani Boundouni, Moheli (30 ha) – a crater lake and one of the few freshwater lakes in Comoros

³ 5^{ème} rapport national sur la diversité biologique des Comores, Juin 2014

⁴ Rapport sur la vulnérabilité et l'adaptation sur les ressources en eau face aux changements climatiques sur l'île d'Anjouan

- Le Karthala, Grand Comore (13,000 ha) - . Located in the southern part of Grande Comore (Ngazidja), Mount Karthala is a well-known active volcano with its 3km-wide caldera. Its western and southern slopes are covered by a dense, humid forest which harbours several endemic species and contributes to global biodiversity conservation. On the other slopes, different vegetation types occur according to exposure and altitude: evergreen moist forest, dry forest, montane bushland and thicket (characterized by *Philippia* heaths), and highland grasslands. The site harbours the entire bird community of the island, with five endemic endangered species including the Comoro White-eye *Zosterops mouroniensis*, the Comoro Scops-Owl *Otus pauliani*, the Grand Comoro Flycatcher *Humblotia flavirostris*, the Comoro Drongo *Dicrurus fuscipennis* and the Mayotte Drongo *Dicrurus waldenii*. Two threatened butterfly species are also present. Certain species are used for medicinal purposes and some areas are considered sacred sites.
 - Le Mont Ntringui, Anjouan (3000ha) - the site comprises Mt. Ntringui, the island's highest point, and the crater lake Dzialandzé, which is the largest freshwater body on the island. Permanent rivers along the slopes of Mt. Ntringui are providential for water supply, irrigation and as a source of water for livestock. There are also plans to transform the site into a national park.
159. Activities are not proposed within the Ramsar areas.
160. Comorian waters harbor the coelacanth (*Latimeria chalumnae*), a rare primitive fish once thought to have been extinct for 70 million years.

5.4.1.1 Terrestrial Ecosystems/Land classes

161. Agriculture is the extensive type using rudimentary means of production. Three types of culture are practiced: food crops (banana, cassava, taro), vegetables (tomato, onion, lettuce and carrot), especially for Badaraji area beside and cash crops (vanilla, cloves, ylang ylang, coffee) .The banana and cassava are the main basic consumer food is grown by almost all households. The production is largely for local consumption.
162. The combined effects of agricultural expansion, increased urbanization, and the lack of appropriate resources and management have had significant negative impacts on natural resources in the Comoros, especially on natural forests.
163. All of the remaining natural forest fragments on the three islands are found only at mid to high altitude zones.
164. Mapping by ECDD, BCSF & Durrell (2013)⁵ has identified the various types of land units found on the islands. Table 10, Table 11 and Table 12 provide the areas of each land class for Grande Comore, Moheli and Anjouan respectively.
165. In Anjouan the natural forest is found only at high altitudes. Endemic birds seem to be more dependent on forest and present at higher altitudes, butterflies favour mid-altitudes, and reptiles lower altitudes⁶.
- 166.

Table 10 Land classes on Grande Comore (south)

Grande Comore (south)	Area (km2)
Natural Forest	86.29
Degraded Forest	182.72
Agroforestry	148.60
Non-Forest	480.64
Manrove	0.07
Montane Dry Vegetation	9.61
Inland Water	0.19
Volcanic Rock/Sand	69.96

⁵ ECDD, BCSF & Durrell (2013). Land Cover Mapping of the Comoros Islands: Methods and Results

⁶ ECDD, BCSF & Durrell (2014) Terrestrial Biodiversity Mapping of the Comoro Islands: Methods and Results

Urban	40.76
All classes	1018.85

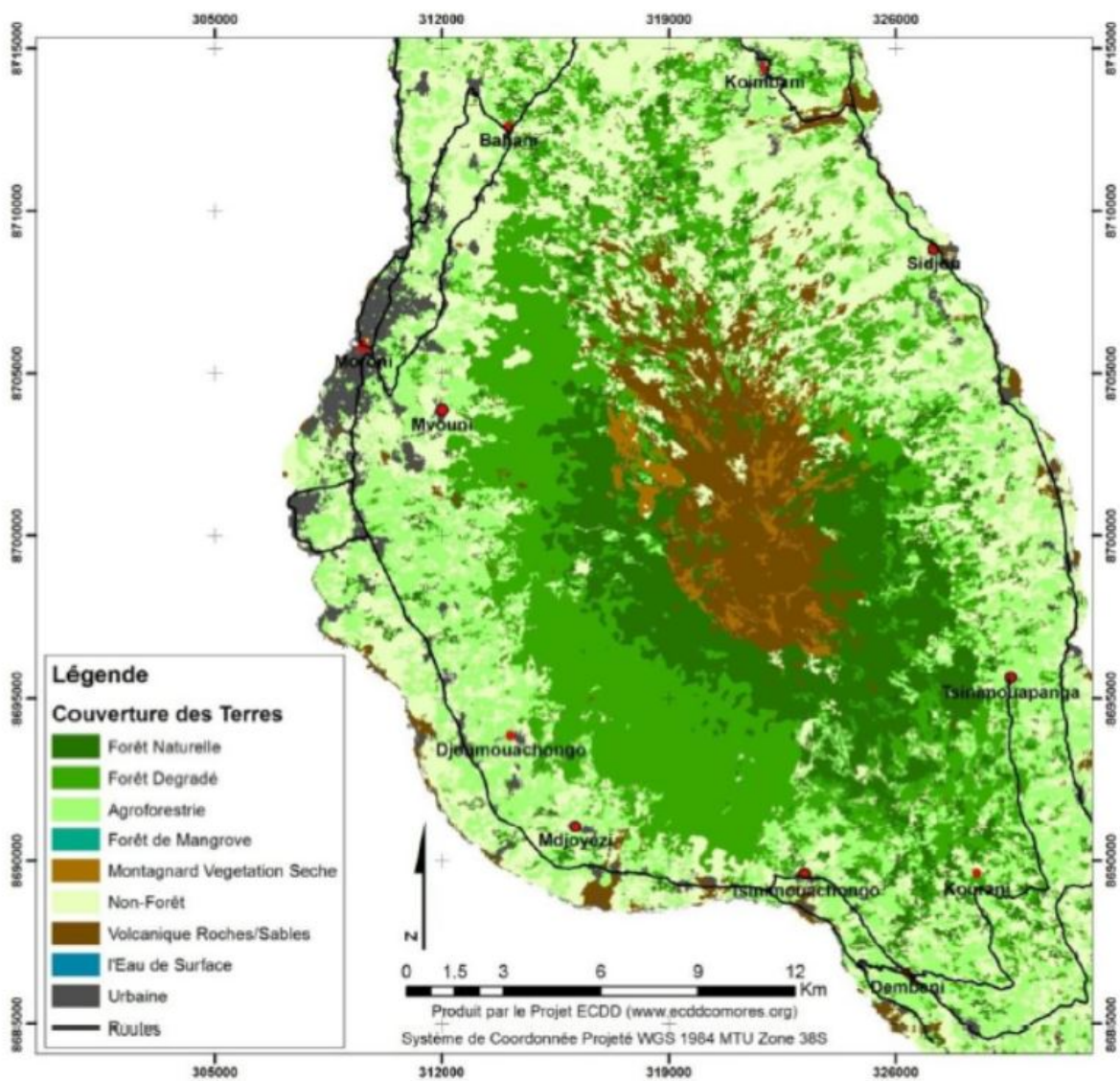


Figure 11 Land cover for Grande Comore (south)

Table 11 Land classes for Mohéli

Mohéli	Area (km2)
Natural Forest	25.10
Degraded Forest	29.27
Agroforestry	86.34
Non-Forest	55.89
Mangrove	1.28
Inland Forest	0.18
Urban	5.62
All classes	203.68

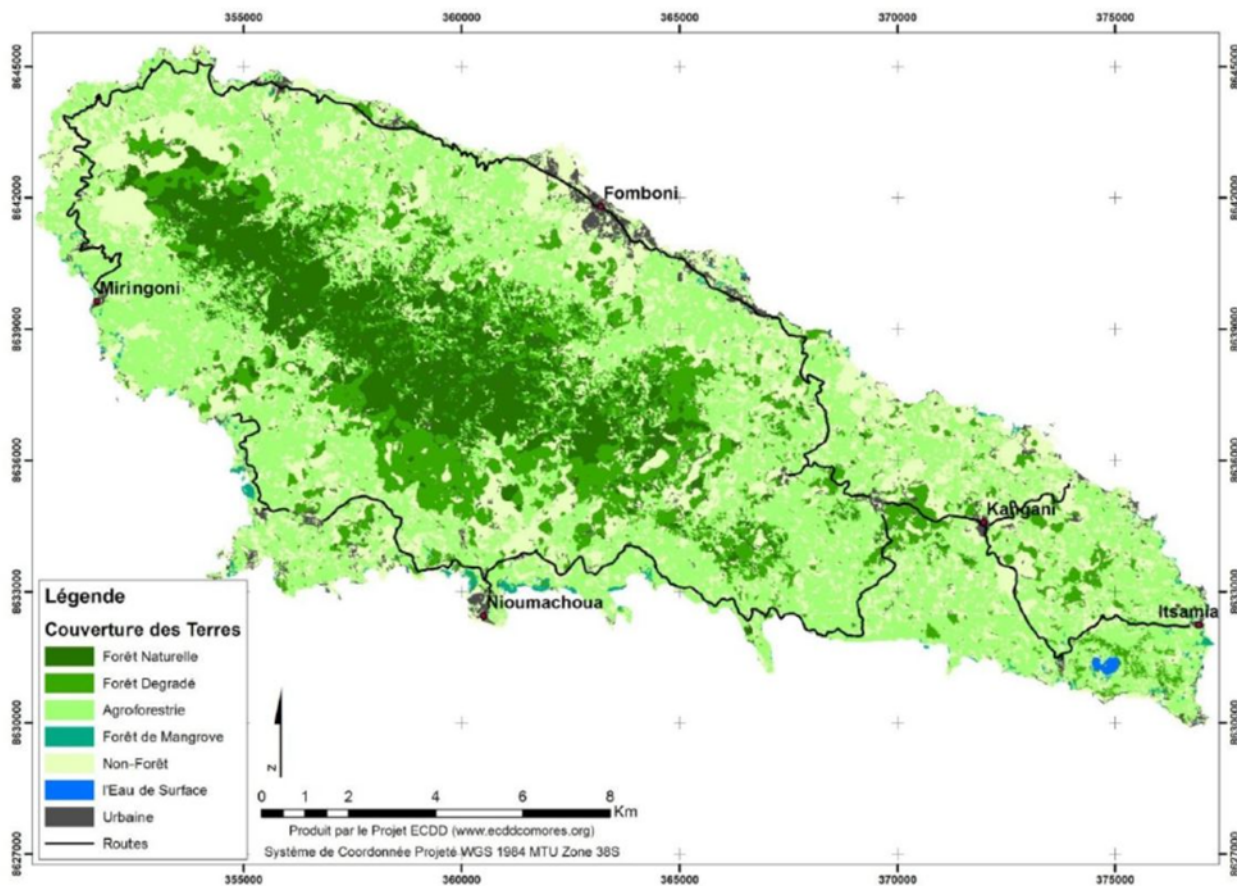


Figure 12 Land cover for Moheli

Table 12 Land classes for Anjouan

Anjouan	Area (km2)
Natural Forest	29.56
Degraded Forest	59.13
Agroforestry	138.25
Non-Forest	173.56
Urban	20.36
All classes	420.86

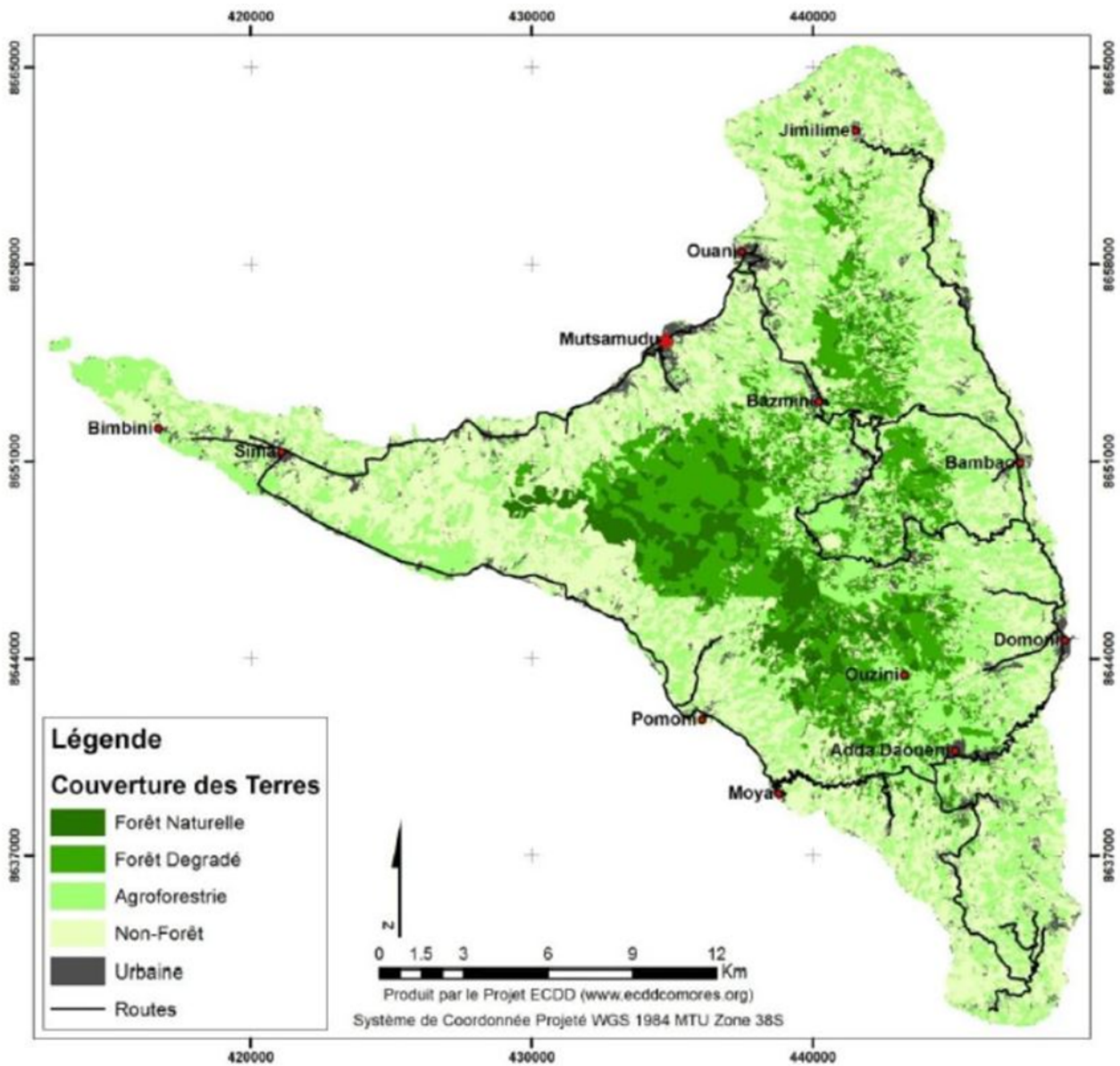


Figure 13 Land cover on Anjouan

Figures 14-19 provide maps of endemic species occurrence (based on models) and threatened species for the three islands. Any activities in these areas need to consider the potential presence of endemic and threatened species. The mitigation measures outlined in this ESMF will assist in reducing potential impacts.

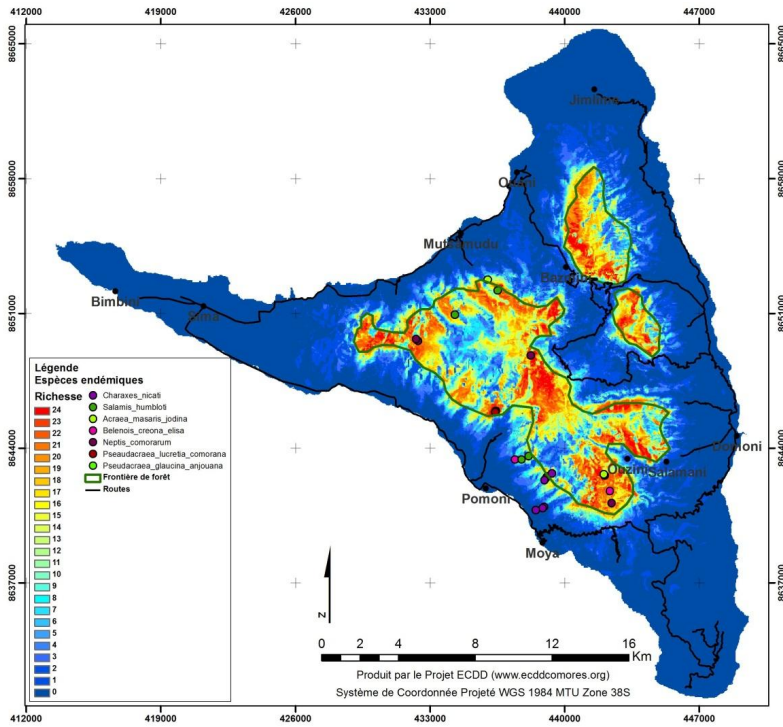


Figure 14 Endemic species occurrence based on models on Anjouan

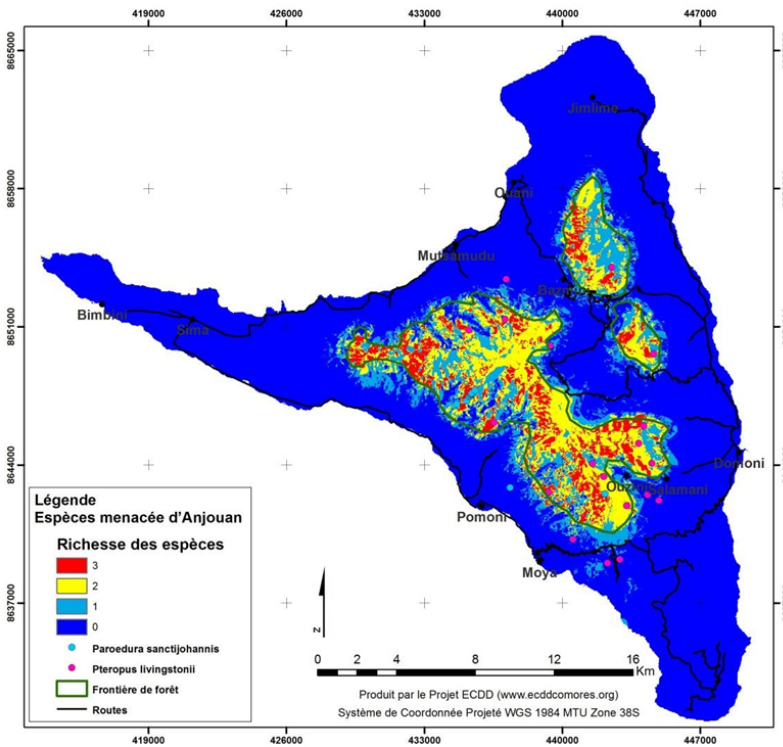


Figure 15 Threatened species occurrence/richness on Anjouan

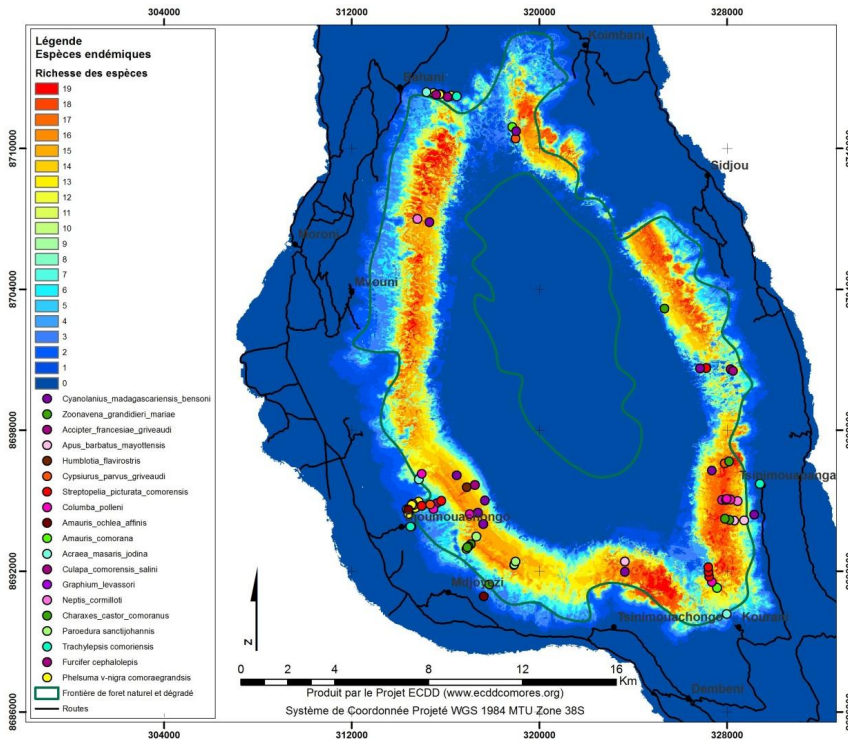


Figure 16 Endemic species occurrence based on models on Grand Comore

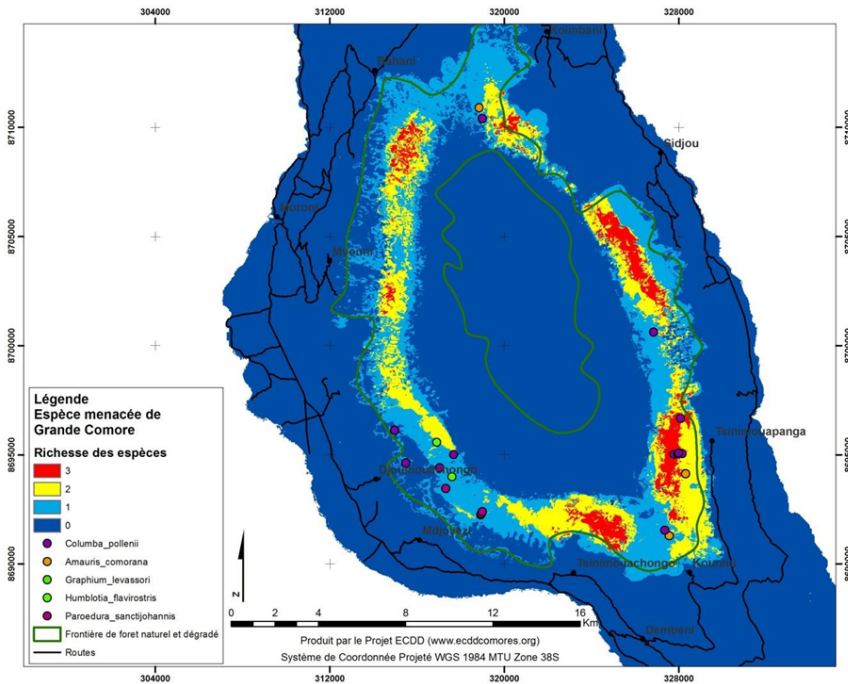


Figure 17 Occurrence of threatened species on Grande Comore

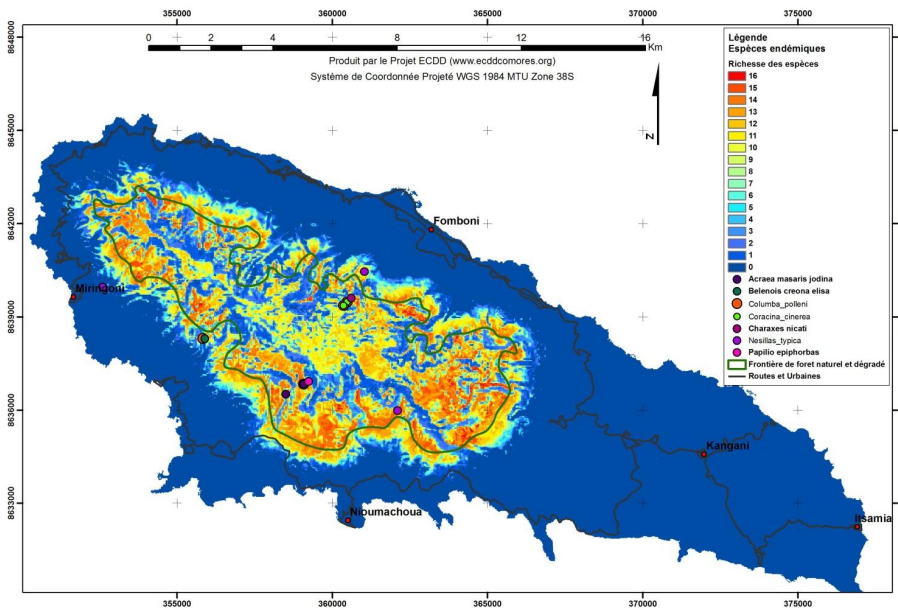


Figure 18 Endemic species occurrence based on models on Moheli

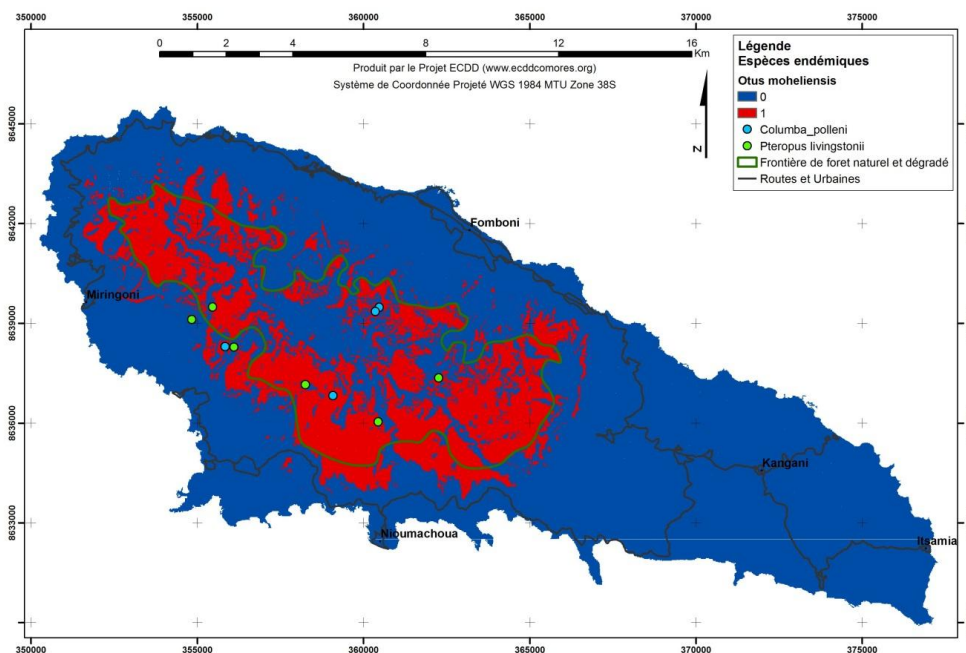


Figure 19 Threatened species occurrence on Moheli

5.4.1.2 Marine

167. The coastal marine environment in the Union of Comoros hosts a range of fauna ecosystems.
168. The geologically young volcanic shores of Grande Comore support coral communities and small fringing reefs, with development of more mature fringing reef systems to the north and south. More complex fringing/bank reef systems are found on Anjouan and Moheli, particularly on the south coast of Moheli, designated as a Marine Protected Area in 2004, and at Bimbini in Anjouan. Because of the simpler reef structures, the diversity of coral reefs in the Comoros is less than at Mayotte, though the more complex reefs of Moheli and Anjouan have not yet been studied. Banc Vailheu, rising to 10 m below the surface induces strong upwelling and high productivity, supporting a high abundance of sharks and whales.
169. The Comorian islands are best known for the largest populations of coelacanth in the world, with largest concentrations on the SW coast of Grand Comore, with notable numbers at Bimbini, Anjouan. In total, a population size of 500 has been estimated for the Comoros, which lies at the northern end

of the main known population of coelacanth along the shores of the Mozambique channel from KwaZulu-Natal in the south to southern Tanzania in the north, on the west side, and from Tulear in the south to northern Madagascar on the east side.

170. Dugong are reported from the Comoros, with the most important sites being on Moheli, and Mitsamiouli on Grande Comore. The islands also host the second largest nesting site for green turtle nesting in the WIO, at Itsamia (Moheli). In common with Mayotte, the Comoros are important for humpback whales from June to November, also with high ratios of mother-calf pairs.

5.4.2 Potential Impacts

171. Potential impacts on terrestrial flora and fauna include minor loss of habitat due to clearing for access and footprint of infrastructure. Impacts during construction will include clearing, sedimentation, noise and possible emissions from engines.
172. Some changes in hydrology will occur due to the installation of river intake structures in the upper reaches of creeks, however these structures are relatively small and designed as 'run of river' structures for the most part of the year. The weir pools created by the intake structures will provide year round aquatic habitat.
173. The project is unlikely to have significant impacts on the marine environment.

5.4.3 Performance Criteria

174. The following performance criteria are set for the construction of the projects:
- no clearance of vegetation outside of the designated clearing boundaries;
 - no death to native fauna as a result of clearing activities;
 - avoidance of Ramsar sites
 - no deleterious impacts on aquatic environments and terrestrial habitats;
 - no introduction of new weed species as a result of construction activities ; and
 - no increase in existing weed proliferation within or outside of any project footprint as a result of construction activities.

5.4.4 Monitoring

175. A flora and fauna monitoring program will be implemented (Table 13).
176. Weed monitoring will be undertaken and appropriate action taken in the event of alien or noxious species being identified.
177. The delivery organisation will when undertaking works, will compile a weekly report to DGEF outlining:
- any non-conformances to this EMSF;
 - the areas that have been rehabilitated during the preceding week; and
 - details of the corrective action undertaken.

5.4.5 Reporting

178. All flora and fauna monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The DGEF must be notified in the event of any suspected instances of death to native fauna and where vegetation is detrimentally impacted.

Table 13 Flora and Fauna Management Measures

Issue	Control Activity (and Source)	Action Timing	Responsibility	Monitoring and Reporting
FF1. Habitat loss and disturbance of fauna	FF1.1 Limit vegetation clearing and minimise habitat disturbance through adequate protection and management of retained vegetation.	During construction	Field officer	Daily and maintain records
	FF1.2: Minimise noise levels and lighting intrusion throughout construction and operation in the vicinity of any sensitive locations.	During construction	Field officer	Daily and maintain records
	FF1.3: Ensure that all site personnel are made aware of sensitive fauna/habitat areas and the requirements for the protection of these areas.	During construction	Contractor	Daily and maintain records
	FF1.4 Minimise disturbance to on-site fauna and recover and rescue any injured or orphaned fauna during construction and operation.	During construction	Contractor	Daily and maintain records, report
FF2. Introduced flora and weed species	FF2.1: Implement an ESCP to reduce the spread of weeds through erosion and sediment entering any waterways and therefore spreading.	Pre and during construction	Contractor	Maintain records
	FF2.2: Revegetate disturbed areas using native and locally endemic species that have high habitat value.	During construction	Field officer	As required and maintain records
	FF2.3: Minimise disturbance to mature remnant vegetation, particularly canopy trees.	During construction	Field officer	Daily and maintain records
	FF2.4: Seed is to be weed free	Operation	Field officer	Maintain records

Issue	Control Activity (and Source)	Action Timing	Responsibility	Monitoring and Reporting
	FF2.5: Environmental weeds and noxious weeds within the project footprints shall be controlled.	During and post construction	Field officer	Weekly and maintain records

5.5 EROSION, DRAINAGE AND SEDIMENT CONTROL

5.5.1 Background

5.5.1.1 Topography and Soils

179. Topographically the islands are quite different:
- Grande Comore is the largest and youngest of the Comoros islands. Two volcanoes form the island's most prominent topographic features: La Grille in the north, with an elevation of 1,000 meters, is extinct and largely eroded; Kartala in the south, rising to a height of 2,361 meters, last erupted in 1977. A plateau averaging 600 to 700 meters high connects the two mountains. Because Grande Comore is geologically a relatively new island, its soil is thin and rocky and cannot hold water. There are no perennial streams.
 - Anjouan has very rugged terrain with rugged ridges and attenuated (north) coastal plains. The hilly areas are very steep and cut by deep valleys occupied by ground cover. The soil of the area is fertile basalt and clay loam origin. Three mountain chains — Sima, Nioumakele, and Jimilime—emanate from a central peak, Mtingui (1,575 m), giving the island its distinctive shape. Older than Grande Comore, Anjouan has deeper soil cover, but overcultivation has caused serious erosion.
 - Mohéli is thirty kilometers long and twelve kilometers wide, with an area of 290 km² is composed largely of a plateau that averages about 300 m in elevation. . It is the smallest of the islands and it's central mountain chain reaching 860 meters at its highest. The valleys are generally fertile, and the hillsides are covered with thick forests.
180. The soils of Comoros are fragile and their distribution is related to their volcanic origin and the techniques used to exploit them. There are three main categories of soil: 1) ferralitic; 2) brown; and 3) andosols. Soil degradation is a major concern, affecting approximately 60% of farmland.⁷
181. Once heavily forested, Comoros' denuded slopes and fragile soils are now prone to severe soil erosion and desertification.

5.5.2 Erosion risk

182. Soil erosion depends on several parameters such as type of soil, slope, vegetation, the nature of topography and rainfall intensity. The loss of soil stability and soil erosion can take place due to the removal of vegetation cover, and numerous construction activities. It can cause the loss of soil fertility and induce slope instability.
183. Land preparation for the project could result in blockage or alteration of natural flow paths causing changes in the drainage patterns in the area. Effective and efficient mitigation measures can not only reduce, but could improve the conditions over the existing conditions.
184. As discussed in Section 5.1 Climate and 5.2 Surface Water, rainfall occurs mostly in the wet season which runs from November to April (and particularly in January). Rainfall can have a significant impact on the ability to manage environmental impacts, particularly in terms of managing drainage, erosion and sedimentation. Therefore activities which involve significant disturbance of soil or operating with drainage lines and waterways should be planned to be undertaken during the driest months. It is also important to ensure that all required erosion and sediment control mechanisms are in place before the onset of the wet season.
185. Activities that have the potential to cause erosion should be undertaken with the likely weather conditions in mind.

5.5.3 Performance Criteria

186. The following performance criteria are set for the projects:
- no build-up of sediment in the aquatic environments and/or surface and/or groundwater as a result of construction and operation activities;

⁷ IMF (2016) Union of the Comoros : Interim Poverty Reduction Strategy Paper

- no degradation of water quality on or off site of all projects;
- all water exiting the project site and/or into groundwater systems is to have passed through best practice erosion, drainage and sediment controls; and
- effective implementation of site-specific Erosion Drainage and Sediment Control Plan (EDSCP).

187. By following the management measures set out in the EMSF, construction and operation activities of the projects will not have a significant impact as a result of sedimentation across the broader area.

5.5.4 Monitoring

188. Table 14 outlines the mitigation measures and monitoring that should be undertaken as part of the project. The program is subject to review and update (if required) at least every two months from the date of issue. The Field Officer will be required to:

- conduct site inspections on a weekly basis or after rainfall events exceeding 20 mm in a 24 hour period;
- develop a site-specific checklist to document non-conformances to this EMSF or any applicable EDSCPs; and
- communicate the results of inspections and/or water quality testing and ensure that any issues associated with control failures are rapidly rectified and processes are put in place to ensure that similar failures are not repeated.

5.5.5 Reporting

189. All sediment and erosion control monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The DGEF must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to erosion and sediment control is exceeded.

Table 14 Erosion, Drainage and Sediment Control Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities	E1.1: Develop and implement an EDSCP for any surface works, embankments and excavation work, water crossings and stormwater pathways.	Construction phase	All Personnel	Review and update bimonthly. Maintain records
	E1.2: Ensure that erosion and sediment control devices are installed, inspected and maintained as required.	Construction phase	All Personnel	Maintain records
	E1.3: Schedule/stage works to minimise cleared areas and exposed soils at all times.	Pre and during construction	Field officer	Maintain records
	E1.4: Incorporate the design and location of temporary and permanent EDSC measures for all exposed areas and drainage lines. These shall be implemented prior to pre-construction activities and shall remain onsite during work	Pre and during construction	Field officer	Maintain records
	E1.5: Schedule/stage proposed works to ensure that major vegetation disturbance and earthworks are carried out during periods of lower rainfall and wind speeds.	Pre and during construction	Field officer	Maintain records
	E1.6: Strip and stockpile topsoil for use during revegetation and/or place removed soils back on to agricultural lands.	Pre and during construction	Field officer	Maintain records
	E1.7: Schedule/stage works to minimise the duration of stockpiling topsoil material.	During construction	All Personnel	Maintain records
	E1.8: Locate stockpile areas away from drainage pathways, waterways and sensitive locations.	Pre and during construction	Field officer	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities	E1.9: Design stormwater management measures to reduce flow velocities and avoid concentrating runoff.	Pre and during construction	Field officer	Maintain records
	E1.10: Include check dams in drainage lines where necessary to reduce flow velocities and provide some filtration of sediment. Regularly inspect and maintain check dams.	Pre and during construction	Field officer	Maintain records
	E1.11: Mulching shall be used as a form of erosion and sediment control and where used on any slopes (dependent on site selection), include extra sediment fencing during high rainfall.	During construction	All Personnel	Maintain records
	E1.12: Bunding shall be used either within watercourses or around sensitive/dangerous goods as necessary.	During construction	All Personnel	Maintain records
	E1.13: Grassed/vegetated buffer strips shall be incorporated where necessary during construction to reduce water velocity.	During construction	Field officer	Maintain records
	E1.14: Silt fences or similar structures to be installed to protect from increased sediment loads.	During construction	Contractors	Maintain records
	E1.15: Excess sediment in all erosion and sediment control structures (eg. sediment basins, check dams) shall be removed when necessary to allow for adequate holding capacity.	During construction	Contractors	Maintain records
E2: Soil Contamination	E2.1: If contamination is uncovered or suspected (outside of the project footprints), undertake a Stage 1 preliminary site contamination investigation. The contractor should cease work if previously unidentified contamination is encountered and activate management procedures and obtain advice/permits/approval (as required).	Construction phase	All Personnel	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E2: Soil Contamination	E2.3: Drainage control measures to ensure runoff does not contact contaminated areas (including contaminated material within the project footprints) and is directed/diverted to stable areas for release.	Construction phase	All Personnel	Daily and maintain records
	E2.4: Avoid importing fill that may result in site contamination and lacks accompanying certification/documentation. Where fill is not available through on-site cut, it must be tested.	Construction phase	All Personnel	Daily and maintain records

5.6 SOCIAL MANAGEMENT

5.6.1 Background

5.6.1.1 Population

190. The islanders reflect a diversity of origins. Malay immigrants and Arab and Persian traders have mixed with peoples from Madagascar and with various African peoples. Most Comorians are Sunni Muslims, and Islam is the state religion.
191. Most of the islands' inhabitants (almost 97%) speak island-specific varieties of Comorian (Shikomoro), a Bantu language related to Swahili and written in Arabic script. Comorian, Arabic, and French are the official languages; French is the language of administration.
192. Some 75% of the people live in rural areas, and most of the population is centred on the two larger islands; Grande Comore contains about half of the country's population, Anjouan about 40%, and Moheli less than 10%. The capital, Moroni, is the country's most populous urban area. The birth and death rates are both high in Comoros, and, although infant mortality is a major problem, the population growth rate is about twice the world average⁸.
193. Based on data from the last national census (2003), the Comorian population was estimated at 794,678 inhabitants in 2016. The population density is among the highest in Africa, with approximately 394.90 people per km² in 2013 and population growth rate 1.71 % estimated in 2016.⁹ With almost 60% of the population under the age of 25 and median age less than 20 (Table 15), the Comorian population is very young (ranked 196 out of 229). The potentially active population aged 15 to 64 accounted for 55% of the total population in 2012, with women accounting for 50.05% of the Comorian population.

Table 15 Structure by age and sex of the Comorian population in 2012 (estimates based on data from RGPH 2003)

Age groups	Men	Women	Total
0-4 years	55984	53316	109300
5-9 years	47756	45492	93248
10-14 years	48285	44961	93246
15-19 years	45522	42624	88146
20-24 years	38658	36546	75204
25-29 years	28229	31354	59583
30-34 years	20081	22646	42728
35-39 years	14211	17433	31645
40-44 years	13422	14286	27708
45-49 years	12553	13347	25900
50-54 years	10073	10901	20974
55-59 years	7179	8229	15408
60-64 years	6396	7149	13545
65-69 years	4210	4274	8484
70-74 years	4166	4348	8514
75-79 years	2066	2146	4212

⁸ <https://www.britannica.com/place/Comoros>

⁹ <http://www.tradingeconomics.com/>

80 + years	2943	3507	6449
Total	361734	362560	724294

194. By 2033, the population is expected to reach approximately 1,151,320 inhabitants.¹⁰ Despite increasing urbanization (27.9% in 2003 vs. 31.5% in 2008), the rural population is projected to continue to exceed the urban population in 2030 (55%).¹¹ In 2012, households averaged 5.9 members.

5.6.1.2 Employment

195. Classified as a Least Developed Country by the UN System, Comoros is one of the poorest countries in the world with an estimated 80% of the rural population considered poverty-stricken and 46% of the population living in absolute poverty (<\$1.25/person/day). At least 14.3% of the population is unemployed. The unemployment rate among those aged 15-24 is very high at 50.5%.¹² In the Comoros, only 13.7 per cent women are in paid employment. The labor force participation rate of women is 35.2 percent compared to 80.1 percent for men¹³.

196. Agriculture is the predominant activity in the Comoros. Between 70-80% of the Comorian population are small-scale farmers that are dependent on rain-fed water resources for subsistence agriculture. Currently, national agricultural production meets only 40% of food needs in the country. According to the Comoros' Institute of Statistics, Comoros is able to exploit only one-third of the total exploitable land available for agricultural purposes due to lack of ability to harness water resources. Poverty issues and limited employment opportunities are severely hindering the country from have self-sustaining economic growth.¹⁴

5.6.1.3 Gender Issues

197. Comoros is a Muslim country and culture is firmly anchored in religious traditions and customs. Religion has a strong influence on gender roles. According to a tradition of matrilineal rule in the Comoros, women can inherit and own land. However, in reality inheritance is shared between boys and girls with boys usually receiving more than girls by cultural tradition and Islamic law¹⁵.

198. The Constitution of the Union of the Comoros prohibits all forms of gender-based discrimination. In terms of human development, Comoros ranked 159 out of 188 countries on the Human Development Index, and, thus, belongs to the group of countries defined by the UN as having low human development.¹⁶ The Human Development Index for the Comoros is 0.503: 0.443 for women and 0.545 for men, indicating a net gender difference in health, education and standard of living.

199. Women are the primary food preparers and generally the collectors of water. The distance traveled by households, or more generally women to fetch water is an indicator of access to water. The 2003 census collected information on the approximate distance (in meters) that household members travel to get water. Nationally, half of the housing units draws water between 100 and 200 meters and just over 35% are supplied from sources located within 100 meters. Women walk an average of 195 m to obtain water in the Comoros. While the distance seems not too long, but we must consider that the woman or girl who draws water made the round trip at least 5 times a day in order to collect from 25 to 50 liters of water (minimum quantity essential to the day).

5.6.2 Potential Impacts

200. The project has been designed with the assistance of stakeholders and aims to provide benefits to the broader community. Notwithstanding, as with any project that involves construction, some dissatisfaction can occur and conflicts may arise. It is important that potential areas of tension are recognised early and appropriate actions taken to avoid or minimise conflict.

¹⁰ <https://www.cia.gov/library/publications/the-world-factbook/geos/cn.html>

¹¹ African Development Bank, Strategy and Programme of PEAPA in the Comoros, Annex 3: Socio-economic context

¹² Programme Pays pour le Travail Décent 2015-2019

¹³ Danida and the Ugandan Ministry of Water and Environment (2012). Faces of climate change: The gender perspective (video).

¹⁴ Comoros' Country Work Programme (2015-2019)

¹⁵ African Development Bank (2009). Gender Profile of the Union of the Comoros.

<https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Comoros%20-%20Country%20Gender%20Profile.pdf>.

¹⁶ Human Development Report (2015) (data from 2014). hdr.undp.org/sites/default/files/2015_human_development_report.pdf

201. The project does not require involuntary resettlement or acquisition of land. Land acquisition, where required, will be negotiated and purchased at fair market price. There may be some temporary impacts on private land during construction activities, however given the small scale of the infrastructure proposed, these are expected to be minor and not present a risk to livelihoods.
202. Where there may be potential for loss of income or adverse impact to landholders, contractors will, in consultation or negotiation with land owners, pay for temporary use of land, if required; for any harm to soil and crops; and any damaged crops or income loss during the temporary use of their lands. Contractors are also required to restore land to pre-subproject conditions before returning it to the affected households. These requirements will be stipulated in the bidding documents and civil work contracts.

5.6.3 Performance Criteria

203. The following performance criteria are set for the project:
- the community has been consulted and project elements have been designed with their informed consultation and participation throughout the project;
 - all stakeholders are appropriately represented;
 - avoid adverse impacts to local community during construction and operations and where not possible, minimise, restore or compensate for these impacts;
 - cultural heritage is not adversely impacted;
 - community health and safety is protected and overall well-being benefits derived from the project;
 - complaint and grievance mechanisms are put in place and proactively managed; and
 - long-term social benefits are achieved.
204. Local stakeholders and community members have a key role to play in the implementation and monitoring of the project.
205. Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying any issues as they arise.
206. DGEF will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of programme activities.

5.6.4 Reporting

207. Records of all consultations are to be kept and reported on monthly basis.
208. The DGEF must be notified in the event of any individual or community complaint or dissatisfaction and ensure the Grievance Redress Mechanism is complied with.

Table 16: Social Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring reporting &
SM 1: Changes in land use	SM 1.1: Carry out community consultation on the purpose and benefits of making changes to land use	Pre-construction	DGEF	Maintain records
	SM 1.2: Get community buy-in on any change of land use	Pre-construction	DGEF	Maintain records
	SM 1.3: Ensure compliance with the Grievance Redress Mechanism process	Entire construction and operation phase	DGEF	Maintain records
	SM 1.4: Stipulate in bidding documents/contracts the requirement for Contractors to pay for temporary use of land, if required; for any harm to soil and crops; and any damaged crops or income loss during the temporary use of their lands. Contractors are also required to restore land to pre-subproject conditions before returning it to the affected households.	Construction Phase	DGEF	Procurement and implementation records
SM 2: Gender issues	SM 2.1: Ensure inclusion of at least 30%-50% women in Water Management Committees and IWRM committees (refer Gender Action Plan).	Throughout project	DGEF	Maintain records
	SM 2.2: All training will target 50% women in institutions (ministries, NGOs, Water User Associations) with the exception of the IWRM committees which will have a minimum of 30%. The IWRM Committees must represent all concerned sectors such as agriculture, manufacturing and distilleries that are generally led by men. Also, all training activities will aim to have at least 50% female trainers.	Throughout project	DGEF	Maintain records

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	SM 2.3: Water Security Plans and Watershed Management Plans to have sections that explicitly state how to consider women in planning and implementation of activities	Pre-construction	DGEF	Maintain records
	SM 2.4: Women to receive training on how to maintain local water management systems such as monitoring small water infrastructure and treatment systems, indicating when they are in need of repair and on preventing water use inefficiencies (e.g., leaks) (ensuring that some of the trainers are female).	Operation	DGEF	Maintain records
	SM 2.5: Improve the exchange of information and knowledge awareness of climate change amongst national and local actors and technical services implicated in water supply management, ensuring a gender inclusive approach in these exchanges.	Throughout project	DGEF	Maintain records
	SM 2.6: Ensure that women are included in information exchange through the help of women's associations and representatives.	Throughout project	DGEF	Maintain records
	SM 2.7: Socially-sensitive water tariffs that support climate-informed water management to be designed, standardized and introduced in each target area	Operation	DGEF	Maintain records
	SM 2.8: Include a gender component in awareness training, explaining how men and women are affected differently by impacts of climate change, water conservation and anti-pollution measures.	Pre-construction and Operation	DGEF	Maintain records
	SM 2.9: Consult with women in the design and planning for infrastructure to reduce time spent collecting water.	Pre-construction	DGEF	Maintain records
SM 3: Public nuisance caused by construction/operation	SM 3.1: Carry out community consultation prior to undertaking activities	Pre-construction	DGEF	Maintain records
	SM 3.2: Implement appropriate management plans (refer to Noise, Air, ESCP, and Waste sections of the ESMF)	Construction and operation	Site supervisor and DGEF	Daily and maintain records

activities (eg noise, dust etc)	SM 3.3: Ensure compliance with the Grievance Redress Mechanism process, in particular ensure that public is aware of and has access to the GRM.	All phases	DGEF	Maintain records
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5.7 WASTE MANAGEMENT

5.7.1 Background

209. Waste management is seriously lacking on Comoros. Street and ocean dumping is common practice and municipal waste pollution is common place. Waste production levels are relatively high compared to many African nations – 2.23kg/capita/day for Comoros, only nearby Seychelles is higher (2.98kg/capita/day).

210. As the implementing agency, the DGEF advocates good waste management practice. The preferred waste management hierarchy and principles for achieving good waste management are as follows:

- waste avoidance (avoid using unnecessary material on the projects);
- waste re-use (re-use material and reduce disposing);
- waste recycling (recycle material such as cans, bottles, etc.); and
- waste disposal (all petruscible and/or contaminated waste to be dumped at approved landfills).

211. The key waste streams generated during construction are likely to include:

- the excavation wastes unsuitable for reuse during earthworks;
- wastes from construction and drilling equipment maintenance. Various heavy vehicles and construction equipment will be utilised for the duration of the construction and drilling phase. Liquid hazardous wastes from cleaning, repairing and maintenance of this equipment may be generated. Likewise leakage or spillage of fuels/oils within the site needs to be managed and disposed of appropriately;
- non-hazardous liquid wastes will be generated through the use of workers' facilities such as toilets; and
- general wastes including scrap materials and biodegradable wastes.

212. Key waste streams generated during operations are likely to include:

- Water treatment chemical containers
- General waste
- Toilet waste from workers; and
- used oil and machinery parts.

213. Workers involved in construction and operational activities should be familiar with methods minimising the impacts of clearing vegetation to minimise the footprint to that essential for the works and rehabilitate disturbed areas. By doing these activities, the projects should minimise the impact of waste generated by the project.

5.7.2 Performance Criteria

214. The following performance criteria are set for the construction of the projects:

- waste generation is minimised through the implementation of the waste hierarchy (avoidance, reduce, reuse, recycle);
- no litter will be observed within the project area or surrounds as a result of activities by site personnel;
- no complaints received regarding waste generation and management;
- waste oils will be collected and disposed or recycled off-site, local oil companies or shipped for recycling.

5.7.3 Monitoring

215. A waste management monitoring program has been developed for the projects (Table 17). The program is subject to review and update at least every two months from the date of issue.

5.7.4 Reporting

216. The DGEF as implementing agency must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to waste is exceeded.

Table 17 Waste Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
WT1: Production of wastes and excessive use of resources	WT1.1: Preference shall be given to materials that can be used to construct the project that would reduce the direct and indirect waste generated.	Pre and during construction	Contractor	Maintain records
	WT1.2: Daily waste practices shall be carried out unless these are delegated to the activities of external waste management bodies.	During construction	Field officer	Daily and maintain records
	WT1.3: The use of construction materials shall be optimised and where possible a recycling policy adopted.	During construction	Field officer	Weekly and maintain records
	WT1.4: Separate waste streams shall be maintained at all times i.e. general domestic waste, construction and contaminated waste. Specific areas on site shall be designated for the temporary management of the various waste streams.	During construction	Field officer	Weekly and maintain records
	WT1.5: Any contaminated waste shall be disposed of at an approved facility.	During construction	Field officer	Weekly and maintain records
	WT1.6: Recyclable waste (including oil and some construction waste) shall be collected separately and disposed of correctly.	During construction	Field officer	Weekly and maintain records
	WT1.7: Waste sites shall be sufficiently covered to ensure that wildlife does not have access.	During construction	Field officer	Daily
	WT1.8: Disposal of waste shall be carried out in accordance with the Government of WHERE requirements.	During construction	Field officer	Weekly and maintain records
	WT1.9: Fuel and lubricant leakages from vehicles and plant shall be immediately rectified.	During construction	Field officer	Daily and maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
WT1: Production of wastes and excessive use of resources	WT1.10: Major maintenance and repairs shall be carried out off-site whenever practicable.	During construction	Field officer	Weekly and maintain records
	WT1.11: Where possible, fuel and chemical storage and handling shall be undertaken at central fuel and chemical storage facilities, such as petrol stations.	During Construction	Field officer	Daily and maintain records
	WT1.12: On-site storage of fuel and chemicals shall be kept to a minimum.	During Construction	Contractor	Daily, maintain records and report any incidents
	WT1.13: Any waste oils and lubricants are to be collected and transported to recyclers or designated disposal sites as soon as possible.	During Construction	Field officer	Daily and maintain records
	WT1.14: Any dangerous goods stored on site shall be stored in accordance with Comorian regulations.	During Construction	Contractor	Daily and maintain records

5.8 NOISE AND VIBRATION

5.8.1 Background

217. Due to the limited urban development and heavy industry, environmental noise is relatively low. Urban areas have higher levels of noise pollution. Sources of noise include: aircraft (limited flights), motor vehicles, ships and small boats operating in the nearshore environment, generators and general urban noise.
218. All construction and operation activities have the potential to cause noise nuisance. Vibration disturbance to nearby residents and sensitive habitats is likely to be caused through the use of vibrating equipment. Blasting is not required to be undertaken as part of this project.
219. The use of machinery or introduction of noise generating facilities could have an adverse effect on the environment and residents if not appropriately managed.
220. Contractors involved in construction activities should be familiar with methods of controlling noisy machines and alternative construction procedures as contained within specific Comorian legislation or in its absence, international good practice may be used if the legislation has not been enacted.
221. The detail, typical equipment sound power levels, provides advice on project supervision and gives guidance noise reduction. Potential noise sources during construction may include:
- heavy construction machinery;
 - power tools and compressors;
 - delivery vehicles.

5.8.2 Performance Criteria

222. The following performance criteria are set for the construction of the projects:
- noise from construction and operational activities must not cause an environmental nuisance at any noise sensitive place;
 - undertake measures at all times to assist in minimising the noise associated with construction activities;
 - no damage to off-site property caused by vibration from construction and operation activities; and
 - corrective action to respond to complaints is to occur within 48 hours.

5.8.3 Monitoring

223. A standardised noise monitoring program has been developed for the projects (Table 18). The program is subject to review and update at least every two months from the date of issue. Importantly, the Contractor will:
- ensure equipment and machinery is regularly maintained and appropriately operated; and
 - carry out potentially noisy construction activities during 'daytime' hours only.

5.8.4 Reporting

All noise monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The DGEF must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to noise is exceeded

Table 18 Noise and Vibration Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
N1: Increased noise levels	N1.1: Select plant and equipment and specific design work practices to ensure that noise emissions are minimised during construction and operation including all pumping equipment.	All phases	Contractor	Maintain records
	N1.2: Specific noise reduction devices such as silencers and mufflers shall be installed as appropriate to site plant and equipment.	Pre and during construction	Contractor	Maintain records
	N1.3 Minimise the need for and limit the emissions as far as practicable if noise generating construction works are to be carried out outside of the hours: 7am-5.30pm	Construction phase	All Personnel	Daily and maintain records
	N1.4: Consultation with nearby residents in advance of construction activities particularly if noise generating construction activities are to be carried out outside of 'daytime' hours: 7am-5.30pm.	Construction phase	All Personnel	Daily and maintain records
	N1.5 The use of substitution control strategies shall be implemented, whereby excessive noise generating equipment items onsite are replaced with other alternatives.	Construction phase	All Personnel	Daily and maintain records
	N1.6 Provide temporary construction noise barriers in the form of solid hoardings where there may be an impact on specific residents.	Construction phase	Field officer	Daily and maintain records
	N1.7 All incidents complaints and non-compliances related to noise shall be reported in accordance with the site incident reporting procedures and summarised in the register.	Construction phase	Field officer	Maintain records
	N1.8 The contractor should conduct employee and operator training to improve awareness of the need to minimise excessive noise in work practices through implementation of measures.	Pre and during construction	Contractor	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
N2. Vibration due to construction	N2.1: Identify properties, structures and habitat locations that will be sensitive to vibration impacts resulting from construction and operation of the project.	Pre and during construction	Contractor	Maintain records
	N2.2: Design to give due regard to temporary and permanent mitigation measures for noise and vibration from construction and operational vibration impacts.	Pre-construction	Contractor	Maintain records
	N2.3: All incidents, complaints and con-compliances related to vibration shall be reported in accordance with the site incident reporting procedures and summarised in the register.	Construction phase	Field officer	Maintain records
	N2.4: During construction, standard measure shall be taken to locate and protect underground services from construction and operational vibration impacts.	Construction phase	Field officer	Maintain records

5.9 AIR QUALITY

5.9.1 Background

224. Air quality on Comoros islands varies with location and proximity to urbanisation. The project areas are predominantly village or rural in character. Existing air quality reflects those environments, with the main air quality nuisance being motor vehicles, generators, fuel depots and service stations, burning waste, industrial fires eg ylang ylang distilleries, and household cooking fires. As such, pollution sources are generally attributable to point sources and rapidly dissipated by sea breezes.
225. All construction activities have the potential to cause air quality nuisance.
226. Workers involved in construction and operation activities should be familiar with methods minimising the impacts of deleterious air quality and alternative construction procedures as contained in Comorian legislation or international good practice.

5.9.2 Performance Criteria

227. The following performance criteria are set for the construction of the projects:
- release of dust/particle matter must not cause an environmental nuisance;
 - undertake measures at all times to assist in minimising the air quality impacts associated with construction and operation activities; and
 - corrective action to respond to complaints is to occur within 48 hours.

5.9.3 Monitoring

228. A standardised air monitoring program has been developed for the projects (Table 19). The program is subject to review and update at least every two months from the date of issue. Importantly:
- the requirement for dust suppression will be visually observed by site personnel daily and by DGEF and UNDP staff when undertaking routine site inspections; and
 - Vehicles and machinery emissions – visual monitoring and measured when deemed excessive.

5.9.4 Reporting

229. All air quality monitoring results and/or incidents will be tabulated and reported as outlined in the EMSF. The DGEF must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to air quality is exceeded.

Table 19 Air Quality Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
A.1 Increase in dust levels at sensitive receptors	A1.1: Implement effective dust management measures in all areas during design, construction and operation.	Pre and during construction	All Personnel	Daily and maintain records
	A1.2: Restrict speeds on roads and access tracks.	During construction	Field officer	Daily and maintain records
	A1.3: Manage dust/particulate matter generating activities to ensure that emissions do not cause an environmental nuisance at any sensitive locations	During construction	Field officer	Daily and maintain records
	A1.4: Construction activities should minimise risks associated with climatic events (check forecasts).	During construction	Field officer	Daily and maintain records
	A1.5: Implement scheduling/staging of proposed works to ensure major vegetation disturbance and earthworks are minimised.	Entire construction	Contractor	Daily and maintain records
	A1.6: Locate material stockpile areas as far as practicable from sensitive receptors. Cover if appropriate.	During construction	Field officer	Daily and maintain records
	A1.7: Source sufficient water of a suitable quality for dust suppression activities complying with any water restrictions.	During construction	Field officer	Daily and maintain records
	A1.8: Schedule revegetation activities to ensure optimum survival of vegetation species.	During construction	Field officer	Maintain records
	A1.9: Rubbish receptacles should be covered and located as far as practicable from sensitive locations	During construction	Field officer	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
A2. Increase in vehicle / machinery emissions	A2.1 Ensure vehicles/machines are switched off when not in use.	During construction	Field officer	Daily and maintain records
	A2.2 Ensure only vehicles required to undertake works are operated onsite.	During construction	Field officer	Daily and maintain records
	A2.3 Ensure all construction vehicles, plant and machinery are maintained and operated in accordance with design standards and specifications.	During construction	Field officer	Daily and maintain records
	A2.4 Develop and implement an induction program for all site personnel, which includes as a minimum an outline of the minimum requirements for environmental management relating to the site.	Pre and during construction	Contractor	Daily and maintain records
	A2.5 Locate construction vehicle/plant/equipment storage areas as far as practicable from sensitive locations.	During construction	Field officer	Daily and maintain records
	A2.6 Direct exhaust emissions of mobile plant away from the ground.	During construction	Field officer	Daily and maintain records
		During construction	Field officer	Daily and maintain records

5.10 EMERGENCY MANAGEMENT MEASURES

230. In the event of actions occurring, which may result in serious health, safety and environmental (catastrophic) damage, emergency response or contingency actions will be implemented as soon as possible to limit the extent of environmental damage.
231. The delivery organisation will need to incorporate emergency responses into the project complying with the requirements under the Occupational, Health and Safety Policy of the delivery organisation and the relevant Comorian legislation.

5.10.1 Performance Criteria

232. The following performance criteria are set for the construction of the projects:
- no incident of fire outbreak;
 - no failure of water retaining structures;
 - no major chemical or fuel spills;
 - no preventable industrial or work related accidents;
 - provide an immediate and effective response to incidents that represent a risk to public health, safety or the environment; and
 - minimise environmental harm due to unforeseen incidents.

5.10.2 Monitoring

233. An emergency response monitoring program has been developed for the projects (Table 20). The program is subject to review and update at least every two months from the date of issue. Importantly, visual inspections will be conducted by Field officer daily with reporting to DGEF and UNDP staff on a weekly basis (minimum) noting any non-conformances to this EMSF.

5.10.3 Reporting

234. The DGEF and UNDP staff must be notified immediately in the event of any emergency, including fire or health related matter including those that have resulted in serious environmental harm.

Table 20 Emergency Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E1. Fire and Emergency management and prevention strategies implemented	E1.1: Flammable and combustible liquids bunding/storage areas to be designed in accordance with appropriate international standards	Pre and during construction	Contractor	Daily and maintain records
	E1.2: Fire extinguishers are to be available on site	During construction	Contractor	Daily and maintain records
	E1.3: No open fires are permitted within the project area	During construction	Field officer	Daily and maintain records
	E1.4: Communication equipment and emergency protocols to be established prior to commencement of construction activities.			
	E1.6: Train all staff in emergency preparedness and response (cover health and safety at the work site). Coordinate with NDMO.	During construction	Field officer	Daily and maintain records
	E1.7: Check and replenish First Aid Kits	During construction	Field officer	Daily and maintain records
	E1.8: Use of Personal Protection Equipment	During construction	All Personnel	Daily and maintain records

6 BUDGET FOR ESMF IMPLEMENTATION

235. A budget estimate has been prepared for the implementation of the ESMF as follows:

Item	Allowance
ESMF Updating and Auditing	\$20,000
General ESMF Expenses	\$20,000
Ecological Monitoring	\$80,000
Water Quality Monitoring	30,000\$
Water Quality Sample Laboratory Analysis	50,000\$
Sediment Sample Field Testing	\$10,000
Erosion, Drainage and Sediment Control	\$200,000
Stakeholder Engagement	\$100,000
Training	\$100,000
Grievance Redress Mechanism	\$50,000
Total	\$580,000

Appendices



*Empowered lives.
Resilient nations.*

Guidance for Submitting a Request to the Social and Environmental Compliance Unit (SECU) and/or the Stakeholder Response Mechanism (SRM)

Purpose of this form

- **If you use this form, please put your answers in bold writing to distinguish text**
- **The use of this form is recommended, but not required. It can also serve as a guide when drafting a request.**

This form is intended to assist in:

- (1) Submitting a request when you believe UNDP is not complying with its social or environmental policies or commitments and you believe you are being harmed as a result. This request could initiate a 'compliance review', which is an independent investigation conducted by the Social and Environmental Compliance Unit (SECU), within UNDP's Office of Audit and Investigations, to determine if UNDP policies or commitments have been violated and to identify measures to address these violations. SECU would interact with you during the compliance review to determine the facts of the situation. You would be kept informed about the results of the compliance review.

and/or

- (2) Submitting a request for UNDP "Stakeholder Response" when you believe a UNDP project is having or may have an adverse social or environmental impact on you and you would like to initiate a process that brings together affected communities and other stakeholders (e.g., government representatives, UNDP, etc.) to jointly address your concerns. This Stakeholder Response process would be led by the UNDP Country Office or facilitated through UNDP headquarters. UNDP staff would communicate and interact with you as part of the response, both for fact-finding and for developing solutions. Other project stakeholders may also be involved if needed.

Please note that if you have not already made an effort to resolve your concern by communicating directly with the government representatives and UNDP staff responsible for this project, you should do so before making a request to UNDP's Stakeholder Response Mechanism.

Confidentiality If you choose the Compliance Review process, you may keep your identity confidential (known only to the Compliance Review team). If you choose the Stakeholder Response Mechanism, you can choose to keep your identity confidential during the initial eligibility screening and assessment of your case. If your request is eligible and the assessment indicates that a response is appropriate, UNDP staff will discuss the proposed response with you, and will also discuss whether and how to maintain confidentiality of your identity.

Guidance

When submitting a request please provide as much information as possible. If you accidentally email an incomplete form, or have additional information you would like to provide, simply send a follow-up email explaining any changes.

Information about You

Are you...

1. A person affected by a UNDP-supported project?

Mark "X" next to the answer that applies to you: Yes: No:

2. An authorized representative of an affected person or group?

Mark "X" next to the answer that applies to you: Yes: No:

If you are an authorized representative, please provide the names of all the people whom you are representing, and documentation of their authorization for you to act on their behalf, by attaching one or more files to this form.

3. First name:
4. Last name:
5. Any other identifying information:
6. Mailing address:
7. Email address:
8. Telephone Number (with country code):
9. Your address/location:
10. Nearest city or town:
11. Any additional instructions on how to contact you:
12. Country:

What you are seeking from UNDP: Compliance Review and/or Stakeholder Response

You have four options:

- Submit a request for a Compliance Review;
 - Submit a request for a Stakeholder Response;
 - Submit a request for both a Compliance Review and a Stakeholder Response;
 - State that you are unsure whether you would like Compliance Review or Stakeholder Response and that you desire both entities to review your case.
13. Are you concerned that UNDP's failure to meet a UNDP social and/or environmental policy or commitment is haWHEREng, or could harm, you or your community? Mark "X" next to the answer that applies to you: Yes: No:
 14. Would you like your name(s) to remain confidential throughout the Compliance Review process?

Mark "X" next to the answer that applies to you: Yes: No:

If confidentiality is requested, please state why:

15. Would you like to work with other stakeholders, e.g., the government, UNDP, etc. to jointly resolve a concern about social or environmental impacts or risks you believe you are experiencing because of a UNDP project?

Mark "X" next to the answer that applies to you: Yes: No:

16. Would you like your name(s) to remain confidential during the initial assessment of your request for a response?

Mark "X" next to the answer that applies to you: Yes: No:

If confidentiality is requested, please state why:

17. Requests for Stakeholder Response will be handled through UNDP Country Offices unless you indicate that you would like your request to be handled through UNDP Headquarters. Would you like UNDP Headquarters to handle your request?

Mark "X" next to the answer that applies to you: Yes: No:

If you have indicated yes, please indicate why your request should be handled through UNDP Headquarters:

18. Are you seeking both Compliance Review and Stakeholder Response?

Mark "X" next to the answer that applies to you: Yes: No:

19. Are you unsure whether you would like to request a Compliance Review or a Stakeholder Response?
Mark "X" next to the answer that applies to you: Yes: No:

Information about the UNDP Project you are concerned about, and the nature of your concern:

20. Which UNDP-supported project are you concerned about? (if known):

21. Project name (if known):

22. Please provide a short description of your concerns about the project. If you have concerns about UNDP's failure to comply with its social or environmental policies and commitments, and can identify these policies and commitments, please do (not required). Please describe, as well, the types of environmental and social impacts that may occur, or have occurred, as a result. If more space is required, please attach any documents. You may write in any language you choose

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23. Have you discussed your concerns with the government representatives and UNDP staff responsible for this project? Non-governmental organisations?

Mark "X" next to the answer that applies to you: Yes: No:

If you answered yes, please provide the name(s) of those you have discussed your concerns with

Name of Officials You have Already Contacted Regarding this Issue:

First Name	Last Name	Title/Affiliation	Estimated Date of Contact	Response of Individual	from the
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24. Are there other individuals or groups that are adversely affected by the project?

Mark "X" next to the answer that applies to you: Yes: No:

25. Please provide the names and/or description of other individuals or groups that support the request:

First Name	Last Name	Title/Affiliation	Contact Information
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Please attach to your email any documents you wish to send to SECU and/or the SRM. If all of your attachments do not fit in one email, please feel free to send multiple emails.

Submission and Support

To submit your request, or if you need assistance please email: project.concerns@undp.org