

Annex F. Social and Environmental Screening Template

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the [Social and Environmental Screening Procedure](#) and [Toolkit](#) for guidance on how to answer the 6 questions.

Project Information

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1. Project Title	Sustainable development of Comoros Islands by promoting the geothermal energy resources.
2. Project Number	PIMS 5484; Atlas Award ID 10629
3. Location (Global/Region/Country)	Union of Comoros

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

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

The project fully endorses the human rights-based approach and will not lead to any adverse impacts on enjoyment of human rights (civil, political, economic, environmental, social or cultural) of any key or potential stakeholders, communities involved or the population at large.

The project will focus on the provision of base-load on-grid electricity generated from geothermal resources on Grande Comore, in replacement of imported diesel fuel that is presently used. In the process, it will demonstrate the benefits that geothermal technology can provide to improve the quality of life and livelihoods for the population on Grande Comore. These relate to social and economic benefits in terms of a healthier environment for the population, opportunities for income-generating activities through a reliable and efficient electricity supply and improved natural resource management. In addition, the utilisation of geothermal resources for electricity generation, in lieu of imported diesel fuel, will reduce the country's GHG emissions and contribute to a safer environment for the population in the Comoros Islands.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

Gender is an important aspect of national plans as women and men have different access to resources and opportunities and are affected differently by energy programmes and policies. The aim of gender mainstreaming is to ensure that the needs of both women and men are taken into account. Gender experts will be included in implementation and coordination mechanisms and stakeholder consultations will purposefully include women and men. As part of the national action planning process for geothermal resource development for grid-based electricity generation, the project will encourage capacity development activities to be undertaken on gender analysis and mainstreaming tools.

Moreover, baseline data collection under the PPG already took into consideration gender-disaggregated baseline information and this will continue during implementation of project activities.

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

Comoros will draw upon all its strategies for addressing climate change to systematically mainstream climate change considerations in geothermal resource development. This will aid decision-making on energy infrastructure and service delivery options to take into account the uncertainty associated with climate change predictions and to assess the climate resilience of different options. For instance, decisions to invest in geothermal resource development should take into account possible issues related to air pollution from waste gases, brine disposal, noise reduction and impacts on flora and fauna during construction and operation of the station. The project will ensure that the agencies tasked with the country’s climate change portfolio are actively engaged in the project coordination mechanism so as to promote an integrated approach.

The project will have a direct positive effect on environmental sustainability, as the primary objective of the project is to accelerate utilisation of geothermal resources and technology for the global good of the population. This will be beneficial to both the country’s economy and to the global environment, through the reduction of greenhouse gas emissions.

The estimated direct total reduction of CO₂ emissions resulting from project activities without replication is estimated at 1,882,125 tonnes by the equipment lifetime, while the estimated post-project CO₂ emissions reduction over the next 10 years of project influence, 30-year equipment life and 80% causality factor is estimated at 43,200,000 tonnes.

Part B. Identifying and Managing Social and Environmental Risks

<p>QUESTION 2: What are the Potential Social and Environmental Risks?</p> <p><i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i></p>	<p>QUESTION 3: What is the level of significance of the potential social and environmental risks?</p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p>			<p>QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?</p>
<p>Risk Description</p>	<p>Impact and Probability (1-5)</p>	<p>Significance (Low, Moderate, High)</p>	<p>Comments</p>	<p>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</p>
<p>Risk 1: Climate change may tend to cause changes in and increase the variability of Comoros rain patterns. This may cause floods or mud flows at Mount Karthala that hosts the volcano and that will be the site for the power station.</p> <p>Standard 2 Climate Change, question 2.2</p>	<p>I = 4 P = 3</p>	<p>High</p>	<p>Environmental Risk</p>	<p>These risks are being and will continue to be addressed through capacity development of Government staff on the key aspects to address national challenges associated with weather, climate and climate change. This risk will be further assessed during the</p>

				ESIA, as documented in the ESMF in Annex J, and will be managed during project implementation in line with the ESMP that is developed in accordance with UNDP's SES.
<p>Risk 2: Land degradation: The building of roads for transportation of geothermal drilling and power station equipment will necessitate clearance of forest that, if not addressed, can lead to soil erosion/land degradation at these locations.</p> <p>Standard 2 Climate Change, question 2.3</p>	<p>I = 4 P = 4</p>	High	Environmental Risk	<p>This risk will be managed through ensuring that the geothermal developers re-forest those locations that had to be cleared during construction, but that do not require to remain cleared once construction has been completed. Moreover, geothermal developers will be required to ensure that no deforestation creeps into their area of operations and, in case it happens, they will need to take immediate action to remedy the situation.</p>
<p>Risk 3: Adverse impacts to habitats (e.g. modified, natural, and critical habitats)</p> <p>Standard 1 Biodiversity, question 1.1</p>	<p>I=2 P=3</p>	Moderate	Environmental Risk	<p>There will be some habitat loss where birds nest. Upon project completion, appropriate reforestation activities will need to be implemented to minimise this risk.</p>
<p>Risk 4: Development of activities which could lead to adverse social and environmental effects such using built road to accelerate deforestation.</p> <p>Standard 1 Biodiversity, question 1.11</p>	<p>I=4 P=2</p>	Moderate	Environmental and Social Risks	<p>A new road will have to be built to transport equipment during construction and this road will have to stay for the duration the power station will be operational. However, this road will follow the route of the existing dirt road to the site presently used by wood cutters and banana growers. In fact, the new road will provide them with better access to their banana plantations, but also accelerate deforestation. As a mitigation measure, it will be recommended to the Government to ban cutting of trees.</p>

<p>Risk 5: There may be chemicals used during the construction process.</p> <p>Standard 3, Community Health, question 3.2</p>	<p>I=3 P=2</p>	<p>Moderate</p>	<p>Environmental and Social Risks</p>	<p>All necessary precautions will be taken to prevent them from leaching into the ground and they will be disposed of in an environmentally safe manner.</p>
<p>Risk 6: The project involves large-scale infrastructure development such as roads and pipeline.</p> <p>Standard 3, Community Health, question 3.3</p>	<p>I=4 P=4</p>	<p>High</p>	<p>Environmental Risk</p>	<p>A road will have to be built to the project site and it will follow the present dirt road. In addition, buildings will be erected to house the power station, piping will have to be put in place to carry the geothermal fluid and power lines will have to be built to transport the electricity generated to the load centres. All these will be done with great attention to the environment and appropriate remedial measures will be implemented once construction has been completed. This risk will be further assessed during the ESIA, as documented in the ESMF in Annex J, and will be managed during project implementation in line with the ESMP that is developed in accordance with UNDP's SES.</p>
<p>Risk 7: Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?</p> <p>Standard 3, Community Health, question 3.5</p>	<p>I=3 P=3</p>	<p>Moderate</p>	<p>Environmental Risk</p>	<p>The drilling process may trigger minor earthquakes, as evidenced elsewhere in the world. However, these tremors hardly ever register above a magnitude of 3 and most go unnoticed by the public. This risk will be further assessed during the ESIA, as documented in the ESMF in Annex J, and will be managed during project implementation in line with the ESMP that is developed in accordance with UNDP's SES.</p>
<p>Risk 8: Would the proposed Project potentially result in the generation of</p>	<p>I=3</p>	<p>Moderate</p>	<p>Environmental Risk</p>	<p>Any brine produced during operation of the power</p>

waste (both hazardous and non-hazardous)? Standard 7 Pollution Prevention, question 7.2	P=3			station will be recycled by being injected back through separate wells.
Risk 9: The drilling process will necessitate a large amount of water to be carried up the mountain to the project site. Standard 7 Pollution Prevention, question 7.5	I=2 P=4	Moderate	Environmental Risk	The project will ensure that the amount of water needed will be extracted from the nearby ocean and pumped towards the mountain through a motorized pump and pipe system.
QUESTION 4: What is the overall Project risk categorization?				
Select one (see SESP for guidance)			Comments	
<i>Low Risk</i>			<input type="checkbox"/>	
<i>Moderate Risk</i>			<input type="checkbox"/>	
<i>High Risk</i>			<input checked="" type="checkbox"/>	Geothermal power plants may have an unintended and potentially dangerous side effect: earthquakes, as some experts actually believe that drilling into the rocks around a fault line could trigger quakes, e.g. in Switzerland in 2006, Germany in 2009. However, so far, none of these quakes has registered above a magnitude of 3; most go unnoticed by the public.
QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?				
Check all that apply			Comments	
<i>Principle 1: Human Rights</i>			<input type="checkbox"/>	
<i>Principle 2: Gender Equality and Women's Empowerment</i>			<input type="checkbox"/>	
<i>1. Biodiversity Conservation and Natural Resource Management</i>			<input checked="" type="checkbox"/>	The project will conduct a ESIA and put in place a ESMP that will ensure adequate biodiversity conservation and natural resource management.
<i>2. Climate Change and Adaptation</i>			<input checked="" type="checkbox"/>	The project will substantially reduce GHG emissions that would have otherwise been emitted if

			diesel generators were instead used to produce and supply electricity in Grande Comore.
	3. Community Health, Safety and Working Conditions	<input checked="" type="checkbox"/>	The project will conduct a ESIA and put in place a ESMP that will ensure community health, safety and working conditions are adequate.
	4. Cultural Heritage	<input type="checkbox"/>	
	5. Displacement and Resettlement	<input type="checkbox"/>	
	6. Indigenous Peoples	<input type="checkbox"/>	
	7. Pollution Prevention and Resource Efficiency	<input checked="" type="checkbox"/>	Operation of a geothermal power station does not generate that level of noise pollution that is generated by a diesel power station that is normally located “in town”, close to the load centres. In addition, there are no villages close to the geothermal site nor it is expected that there will be any in the future, as the site is up in the mountains. In addition, it is efficient use of a locally-available and non-polluting resource that eliminates the need for imported fossil fuel.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

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

¹ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	Yes
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	Yes
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	Yes
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	Yes
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	Yes
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	Yes
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant ² greenhouse gas emissions or may exacerbate climate change?	No

² In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tonnes per year (from both direct and consequential sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	Yes
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	Yes
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	Yes
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	Yes
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	Yes
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	Yes
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labour standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of	Yes

	physical relocation)?	
5.3	Is there a risk that the Project would lead to forced evictions? ³	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	Yes
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	<p>Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?</p> <p><i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i></p>	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or	No

³ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

	<p>materials subject to international bans or phase-outs?</p> <p><i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i></p>	
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	Yes