Environmental and Social Impact Assessment

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

Project Information	
1. Project Title	Supporting vulnerable communities in Maldives to manage climate change-induced water shortages
2. Project Number	5705
3. Location (Global/Region/Country)	Maldives

For the purposes of this section, the three components of the project are assessed separately.

Integrated Water Harvesting

The project will have a number of environmental impacts which will be temporally restricted. During the installation of water tanks, it may be necessary to undertake small scale earth works to level areas where the tanks will be placed. The earth works will move sediment that, if not properly contained, may enter the marine environment. To ensure that the sediment is not mobilized through either wind or more specifically water movement, it will be necessary to prepare an erosion control sediment plan and install silt curtains to restrict sediment movement. The plan should contain aspects including but not limited to the installation of sediment curtains to reduce sediment movement and the covering of sediment where practicable.

There are limited social impacts associated with the project. Importantly, no people will be displaced or relocated. There will be a reduction in the availability of land through the placement of the water tanks; however carefully planning and stakeholder consultation will be undertaken prior to the determining the specific locations will ensure communities are not impacted.

Desalination Plants

Notwithstanding that the desalination plants are small scale in nature, there are a range of moderate environmental and less so, social impacts associated with the installation, commissioning and operation of the four desalination plants. The impacts include:

1. Impacts on the marine environment through the intake and outfalls with associated brine (salinity), increased temperature and density of brine water being released;
2. The potential release of chemicals used in the desalination process into the surrounding marine environment. Example chemicals used during the reverse osmosis process include but are not limited to chlorine, sodium hypochlorite, sodium bi-sulphate, heavy metals, anti-scalants; coagulants like ferric- or aluminum chloride; antifoaming agents like polyglycols; biocides; and cleaning chemicals. These chemicals can, if released incorrectly, have significant impacts on the environmental both spatially and temporally and over the medium term;
3. The impacts on marine and terrestrial systems as a result of increased pH (eg high alkalinity as a consequence of increasing the calcium carbonate, calcium sulfate and other elements in the brine water to almost double that of normal seawater;
4. Entrainment and impingement/entrapment of marine organisms;

5. Terrestrial and marine noise including through the use of high pressure pumps and turbines; and
6. The waste associated with used filters etc that are used in the process and the disposal of these filters.

Prior to final design and site selection of the four desalination plants, a number of environmental and social studies should be undertaken including:

1. Chemical, ecological and physical assessments (and associated modelling) that consider the adjacent marine ecosystems including but not limited to, marine water quality within the areas of influence, rates of discharge, potential contamination, disturbance to habitats through the placement of infrastructure, noise, and vibration impacts, impact on benthic, planktonic and pelagic biota, and entrainment and entrapment of marine organisms. All these studies should consider spatial and temporal characteristics;
2. Hydrodynamic and brine plume dispersion modelling to ensure the intake and outfall do not result in the entrapment and entrainment of marine species and that there is sufficient dilution to not create significant salinity differences within natural variables respectively. The study should evaluate various diffuser options/locations and methods and their indirect effects on turbidity;
3. An assessment of the location of any important fishing grounds to the local community that may be impacted by either the placement of intake and outfall infrastructure and any brine dispersion. This information will be gained from the hydrodynamic and plume dispersion modelling as above;
4. An assessment of the terrestrial habitat where the desalination plant is to be located; and
5. A terrestrial and marine noise assessment to ensure the operation of the desalination plants does not have an impact on marine fauna and human communities respectively.

Stakeholder consultation should be conducted to ensure appropriate land title is not impacted and that information is gained to feed into the environmental studies.

There are limited social impacts associated with the desalination project. Importantly, no people will be displaced or relocated. There will be a reduction in the availability of land through the placement of the desalination plants; however carefully planning and stakeholder consultation will be undertaken prior to the determining the specific locations will ensure communities are not impacted. There may potentially be an impact on fishers currently utilizing areas in proximity to in the take and outfall for the desalination plants. To ensure there is limited impact on people, community consultation will be undertaken to ensure the infrastructure is not located in important fisheries areas. Where available, local people will be employed to undertake construction, operation and maintenance of the desalination plants, thereby providing a social benefit to the community.

To mitigate environmental impacts, it is critical to ensure that the proposed intake is away from sensitive habitats and is designed to minimize entrapment and entrainment of marine species. Further, the outfall must ensure that immediately dilution avoids impacts on marine species and specifically important habitats such as coral reefs etc. The information from the studies will be used to inform the environmental management plan for the projects. The plan should ensure it includes water quality monitoring in the short to long term.

Groundwater recharge

The programme proposes to recharge groundwater through a number of methods including the use of harvested rainwater and greywater produced within the communities. There will be no significant impacts from increasing the level and quantity of the groundwater system through the injection

of rainwater. However a number of impacts will occur should there be no mitigation measures put in place with respect to the recharge using raw greywater.

The use of greywater can have a number of environmental and social impacts. Environmentally, greywater can change the biophysical and chemical properties of the groundwater to an extent that it is no longer usable for drinking water and other aspects such as irrigation. There are a number of social hygiene impacts associated with greywater reuse and the recharging of the groundwater which could, if not managed effectively, increase the transmission of disease.[1] The impacts include those resulting from increased pathogens, coliform bacteria as examples only.[2]

Prior to undertaking any work associated with groundwater recharge, it is necessary to understand the current groundwater conditions including water quality, quantity, biophysical and chemical characteristics, external inflows, sediment and geology, Further, an assessment of rubble and wick drains should be undertaken to assess the most effective groundwater recharge potential.[3]

A number of mitigation methods are proposed to reduce the impact of the greywater on groundwater ecosystems. There should be some form of primary treatment potentially through filtration. Previous work by one of the project contributors included the development of artificial wetlands as a sink for filtering greywater prior to groundwater recharge. It is recommended that investigations be undertaken into the design of a wetland and importantly, the use of rock riffles to oxygenate water and the use of natural plants and microorganisms that uptake nutrients, organic and inorganic chemicals etc from greywater prior to recharge. An additional approach that has been successful developed in Australia and subsequently internationally[4] is the use of large pool filters with sand and activated carbon to remove nutrients, organic and inorganic chemicals etc from greywater prior to recharge. If these mitigation measures are introduced, it is highly likely that the moderate environmental and social impacts associated with the project will be minimized to a low risk.

Gender Aspects

A gender analysis carried out in 2010 on three islands reports three findings with relevance to this investment. Data reveals that 73% of women control the household budget, and over 95 % of the respondents reported that women have a say on the expenditure of the household. Responsibilities for fetching water from public taps and wells is more or less evenly split between men and women, but with a slightly more responsibility falling on women. This has two implications: i) piped water system will profoundly improve women's and men's lives by removing the drudgery of collecting water from wells and taps. And freeing quality of time on education, children and other economic, social and cultural activities. This supports the investment proposal for a piped water supply as part of the IWRM solution and ii) women, who are largely responsible for bringing up children and would experience firsthand the impacts of ill health from polluted ground water supplies could be important agents for change to support a safe and affordable service delivery system and associated tariffs.

[1] Ottoson, J., & Stenström, T. A. (2003). Faecal contamination of greywater and associated microbial risks. *Water research*, *37*(3), 645-655
[2] Al-Jayyousi, Odeh R. "Greywater reuse: towards sustainable water management." *Desalination* 156.1 (2003): 181-192
[3] Dillon, P. J., Pavelic, P., Page, D., Beringen, H., & Ward, J. (2009). Managed aquifer recharge. *An introduction Waterlines Report Series*, (13)
[4] Li, Z., et al. "Greywater treatment by constructed wetlands in combination with TiO2-based photocatalytic oxidation for suburban and rural areas without sewer system." *Water Science & Technology* 48.11 (2004): 101-106

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 will ensure social equity and equality for those living on remote atolls of the Maldives in comparison to those living in Male. However, the project does not directly have a focus on human rights other than providing people with access to sustainable potable water year round, which directly contributes to the exercise of their constitutional right.
Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment
The project does not directly have a focus on gender sensitive planning and implementation, nor does it provide women's empowerment. However, many of the project beneficiaries will be women.
Briefly describe in the space below how the Project mainstreams environmental sustainability
The project is expected to have a number of significant environmental benefits. The primary benefits include 1. Reduced substantially, the levels of water insecurity, which will raise environmental and social wellbeing and economic productivity; 2. Increase the resilience of groundwater through recharge and reduce the reliance of these systems through alternative means of potable water supply; 3. Reduce carbon emissions through the use of renewable energy to power desalination plants that will provide portable water rather than the existing diesel generation units; 4. Reduced flood damages through improved rainfall capture and diversion capacity, including improved infiltration of flood water; and 5. Reduced costs of pumping assuming that recharge of ground water works effectively and that pumping rates (if relevant) are compatible with maximum sustainable yield of the aquifer.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Attachment 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
Risk 1: Sediment movement during the installation of water tanks	I = 1 P = 3	**Low**	During the installation of water tanks, it may be necessary to undertake small scale earth works to level areas where the tanks will be placed. The earth works will move sediment that, if not properly contained, may enter the marine environment.	To ensure that the sediment is not mobilized through either wind or more specifically water movement, it will be necessary to prepare an erosion control sediment plan and install silt curtains to restrict sediment movement. The plan should contain aspects including but not limited to the installation of sediment curtains to reduce sediment movement and the covering of sediment where practicable.
Risk 2: Impacts on the marine environment through the intake and outfalls with associated brine (salinity), increased temperature and density of brine water being released	I = 2 P = 5	**Moderate**	There are a range of moderate environmental associated with the installation, commissioning and operation of the four desalination plants. Risk Two include the impacts on the marine environment through the intake and outfalls with associated brine (salinity), increased	Prior to final design and site selection of the four desalination plants, a number of environmental and social studies should be undertaken including: 1. Chemical, ecological and physical assessments (and associated modelling) that consider the adjacent marine ecosystems including but not limited to, marine water quality within the areas of influence, rates of discharge, potential contamination, disturbance to habitats through the placement of infrastructure, noise, and vibration impacts,

			temperature and density of brine water being released. Water being released has double the level of salinity in comparison to natural seawater. Further, the water temperature is increased due to it being run though turbines and pumps.	impact on benthic, planktonic and pelagic biota, and entrainment and entrapment of marine organisms. All these studies should consider spatial and temporal characteristics; 2. Hydrodynamic and brine plume dispersion modelling to ensure the intake and outfall do not result in the entrapment and entrainment of marine species and that there is sufficient dilution to not create significant salinity differences within natural variables respectively. The study should evaluate various diffuser options/locations and methods and their indirect effects on turbidity; To mitigate environmental impacts, it is critical to ensure that the proposed intake is away from sensitive habitats and is designed to minimize entrapment and entrainment of marine species. Further, the outfall must ensure that immediately dilution avoids impacts on marine species and specifically important habitats such as coral reefs etc. The information from the studies will be used to inform the environmental management plan for the projects. The plan should ensure it includes water quality monitoring in the short to long term.
Risk 3: Release of chemicals used in desalination process	I = 3 P = 3	**Moderate**	The potential release of chemicals used in the desalination process into the surrounding marine environment. Example chemicals used during the reverse osmosis process include but are not limited to chlorine, sodium hypochlorite, sodium bisulphate, heavy metals, anti-scalants; coagulants	The above studies will provide input into the management of chemicals from the desalination process. A specific chemical management plan should be developed prior to construction and commissioning to ensure that chemicals are store appropriately within a bunded area and moreover that there are management measures for monitoring water quality to ensure there are no long term impacts.

			like ferric- or aluminum chloride; antifoaming agents like polyglycols; biocides; and cleaning chemicals. These chemicals can, if released incorrectly, have significant impacts on the environmental both spatially and temporally and over the short to long term	
Risk 4: Uncontrolled release of chemicals	I = 4 P = 1	**Low**	As above, there are a number of chemicals that are used in the desalination process. Should an uncontrolled release occur, it could have severe impacts on the marine environment.	As above and all chemicals should be stored in an appropriate location to ensure that there cannot be an uncontrolled release during normal routine desalination management and/or during any other time.
Risk 5: Impact on high pH on the marine environment	I = 3 P = 3	**Moderate**	The impacts on marine and terrestrial systems as a result of increased pH (eg high alkalinity as a consequence of increasing the calcium carbonate, calcium sulfate and other elements in the brine water to almost double that of normal seawater	Based on the studies above, the location of the outfall should be designed to allow maximum dilution in the shortest period. Moreover, the location of the outfall should not be within 1km of a sensitive receptor.
Risk 6: Entrainment and impingement/entrapment of marine organisms	I = 2 P = 3	**Moderate**	At the intake, depending on the intake pressure, marine organisms can be entrainment and impingement/entrapment. This can result in the death of the specific marine organisms.	Desalination plants are known to impact on lower order marine organisms including phytoplankton, zooplankton and marine invertebrates. They can also impact on juvenile fishes and turtles if place in an inappropriate location. To avoid impacts, the placement of the intake will rely on the studies identified above. Further, mesh

				should be placed over the intake to mitigate the risk of capture of important species.
Risk 7: Impact on important fishing grounds	I = 2 P = 2	**Low**	There is the potential, if not managed correctly, that important fishing grounds could be impacted as a result of ill-informed positioning of the intake and especially the outfall.	An assessment of the location of any important fishing grounds will be undertaken including consultation with local community that may be impacted by either the placement of intake and outfall infrastructure and any brine dispersion.
Risk 8: Terrestrial and Marine Noise	I = 3 P = 3	**Moderate**	Terrestrial and marine noise including through the use of high pressure pumps and turbines will occur as a result of the desalination projects. This can impact on local communities and marine and terrestrial fauna using the adjacent area.	An assessment of the terrestrial habitat where the desalination plant is to be located should consider any sensitive receptors including communities. Preferable, the desalination plants should be placed downwind from these communities. Further, noise shields should be constructed to reduce the potential for noise to reach these communities. With respect to the marine environment, the studies that will be undertaken will provide input into the final location to ensure underwater noise does not impact marine organisms and sensitive receptors.
Risk 9: Production of waste	I = 2 P = 2	**Low**	The waste associated with used filters etc that are used in the process and the disposal of these filters will have a limited impact on the environment.	All sued filters and fluids etc should be managed and placed in an appropriate waste facility.
Risk 10: Contamination of groundwater	I = 3 P = 3	**Moderate**	The programme proposes to recharge groundwater through a number of methods including the use of harvested rainwater and greywater produced within the communities. There will be no significant impacts from increasing the level and quantity of the groundwater system through the injection of	Prior to undertaking any work associated with groundwater recharge, it is necessary to understand the current groundwater conditions including water quality, quantity, biophysical and chemical characteristics, external inflows, sediment and geology. Further, an assessment of rubble and wick drains should be undertaken to assess the most effective groundwater recharge potential. A number of mitigation methods are proposed to reduce the impact of the greywater on groundwater ecosystems. There should be some form of primary

			rainwater. However a number of impacts will occur should there be no mitigation measures put in place with respect to the recharge using raw greywater. The use of greywater can have a number of environmental and social impacts. Environmentally, greywater can change the biophysical and chemical properties of the groundwater to an extent that it is no longer usable for drinking water and other aspects such as irrigation. There are a number of social hygiene impacts associated with greywater reuse and the recharging of the groundwater which could, if not managed effectively, increase the transmission of disease. The impacts include those resulting from increased pathogens, coliform bacteria as examples only.	treatment potentially through filtration. Previous work by one of the project contributors included the development of artificial wetlands as a sink for filtering greywater prior to groundwater recharge. It is recommended that investigations be undertaken into the design of a wetland and importantly, the use of rock riffles to oxygenate water and the use of natural plants and microorganisms that uptake nutrients, organic and inorganic chemicals etc from greywater prior to recharge. Further, the use of large pool filters with sand and activated carbon to remove nutrients, organic and inorganic chemicals etc from greywater prior to recharge is a cheap adaptation. If these mitigation measures are introduced, it is highly likely that the moderate environmental and social impacts associated with the project will be minimized to a low risk.

	QUESTION 4: What is the overall Project risk categorization?		
	Select one (see SESP for guidance)		**Comments**
	Low Risk	☐	
	Moderate Risk	**X**	**If the appropriate mitigation measures are put in place during the project, the project will have a low risk over the long term impacts.**
	High Risk	☐	

	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		**Comments**
	Principle 1: Human Rights	☐	The project has no impact on human rights.
	Principle 2: Gender Equality and Women's Empowerment	☐	The project is gender neutral.
	1. Biodiversity Conservation and Natural Resource Management	**X**	The project will have an overall benefit on natural resource management through the reduced reliance on groundwater and moreover groundwater recharge. There is the potential for the project to have negative impacts on biodiversity through the placement of the intake and outfall for the desalination plants. A number of studies are recommended prior to site selection and final design that will provide guidance to ensure the vast majority of negative impacts are mitigated. There will be a temporal impact through for example, the loss of marine invertebrate biodiversity; however these animals are known to be both resilience and moreover, quickly inhabit new ecosystems.
	2. Climate Change Mitigation and Adaptation	**X**	The project is designed to provide the community with potable water supply that will act as a buffer during dry season events that are exacerbated by climate change. Further, the project is designed to increase the resilience of groundwater to climate change.
	3. Community Health, Safety and Working Conditions	☐	The project has a positive benefit of increasing the communities' health and safety through increased water during dry season events. Further, if the appropriate mitigations are put in place, the community will be able to rely on groundwater in times of drought.
	4. Cultural Heritage	☐	The project has no impact on cultural heritage.
	5. Displacement and Resettlement	☐	The project will have no issues of displacement or resettlement.

	6. Indigenous Peoples	☐	The project has no impact on indigenous peoples.
	7. Pollution Prevention and Resource Efficiency	**X**	The project will improve groundwater ecosystems although it is critical that mitigation measures be undertaken to reduce the potential pollution of the groundwater.

Final Sign Off

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

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
Principles 1: Human Rights	Answer (Yes/No)
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	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? [5]	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? *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*	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below	
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management	
1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	Yes – only if mitigation measures we not included

[5] 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.

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?	No –if mitigation measures are included
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?	No
1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
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? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No –if mitigation measures are included with respect to recharge of the groundwater
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? *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.*	No
Standard 2: Climate Change Mitigation and Adaptation	
2.1 Will the proposed Project result in significant[6] greenhouse gas emissions or may exacerbate climate change?	No – desalinations plants will be operated using renewable energy
2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes – seawater ingress to groundwater over time or as a result of an extreme event

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

2.3 Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
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?	No –if mitigation measures are included
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 – potential impact from chemicals used in desalination process although impact will be limited unless there is an uncontrolled release
3.3 Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No – desalination plants are small in nature
3.4 Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No – if engineering design meets international good practice
3.5 Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
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 –if mitigation measures are included in relation to groundwater recharge
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?	No
3.8 Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	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:	No

Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	
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 – consultation will be undertaken prior to site selection to ensure no displacement
5.2 Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No – consultation will be undertaken prior to site selection with respect to fisheries to ensure no access restrictions due to intake and outfall of desalination plants
5.3 Is there a risk that the Project would lead to forced evictions?[7]	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?	No
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 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)? *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.*	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

[7] 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.

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)?	No – limited in quantity but negligible if material for construction is prefabricated
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 materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	Yes – potential impact from chemicals used in desalination process although impact will be limited unless there is an uncontrolled release
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 – not potable water