



GENERIC POTENTIAL ADVERSE IMPACTS AND RISKS OF AQUACULTURE SUB-PROJECTS

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Geology/Hydrogeology:</p> <ul style="list-style-type: none"> • Interruption or disruption of surface and groundwater flows from construction, excavation and ground clearance. • Reduced flows or lowering of water table due to abstraction, possibly resulting in salinization. 	<ul style="list-style-type: none"> • Design to take account of local hydrological conditions (e.g., avoid crossing permanent waterways, do not hamper drainage of surface water, avoid works in areas prone to flooding especially during rainy season). • Limit sealed or compacted areas as much as possible, to maintain natural recharge of the water table. • Water study prior to any abstraction, to inform a Sustainable Water Management Plan.
<ul style="list-style-type: none"> • Disruption of coastal processes (e.g., wave, tidal and current regime, sediment transport, flood and storm protection) due to inadequate siting of project. • Saline intrusion into groundwater due to excessive abstraction of groundwater during operation. 	<ul style="list-style-type: none"> • Siting and design to take account of shore configuration, currents, groundwater flows, and existing habitats. • Design and construction of compensatory shore protection and other measures to maintain coastal processes. • Monitoring of groundwater salinity; where necessary further mitigation may include control/diversion structures for saltwater, installation of cut off wells, sourcing of alternative water supply.
<ul style="list-style-type: none"> • Pollution of groundwater from discharges and accidental releases during construction and maintenance, and from wastewater during operation. 	<p>See Pollution of Soils and Water below</p>
<p>Soils, Run-off and Flooding:</p> <ul style="list-style-type: none"> • Loss, damage or disruption of soil/sediments during construction and maintenance. • Introduction of sediments to coastal waters or inland watercourses, or interruption of drainage patterns, as a result of ground clearance, earthworks and operational maintenance of systems. 	<ul style="list-style-type: none"> • Minimization of cleared areas and soil disturbance, with revegetation as soon as feasible (with native species). • Early installation and regular maintenance of drainage and diversion structures, silt traps, etc; drainage outlets to discharge into vegetated areas if possible; vegetation along watercourses and drainage lines to be retained if possible. • Retention of topsoil for restoration (including tilling and revegetation) as soon as practicable. • Careful consideration of timing of works (overall duration and seasonality).
<p>Pollution of Soils and Water:</p> <ul style="list-style-type: none"> • Pollution of coastal waters or inland watercourses from operational wastewater (e.g., nutrients, pesticides, fertilizers, treatments), as well as from fish processing and workforce sewage. 	<ul style="list-style-type: none"> • Reduce nutrient and chemical inputs to water, e.g., through use of biological pest control methods. • Ensure that waste and drainage water complies with discharge standards and treat accordingly. • Implementation of standard good wastewater management and disposal procedures. • Installation of sewage treatment to meet required standards; hygiene training for workforce.

IMPACTS AND RISKS	MITIGATION MEASURES
<ul style="list-style-type: none"> Release of hazardous substances during construction or maintenance (e.g., accidental spills and leaks) leading to soil, surface or groundwater contamination. 	<ul style="list-style-type: none"> Materials handling and control procedures, use of storage and containment equipment meeting international standards. Control of construction vehicle movements and prohibition of vehicle washing in watercourses, and similar practices. Emergency response plans during construction (contractors and local authorities) and operation (local authorities).
<p>Air Quality:</p> <ul style="list-style-type: none"> Dust and emissions from construction and maintenance activities, could affect human health, vegetation and wildlife. 	<ul style="list-style-type: none"> Sensitive site selection and siting of construction and processing facilities. Use of modern equipment meeting appropriate emissions standards, and regular preventive maintenance. Dust control and suppression measures, such as dampening, use of vegetation hedges.
<ul style="list-style-type: none"> Odors associated with preparation facilities may have nuisance value for nearby receptors. 	<ul style="list-style-type: none"> No use of ozone depleting substances during construction. Use of appropriate solid waste disposal facilities.
<p>Noise and Vibration:</p> <ul style="list-style-type: none"> Noise and vibration from construction and maintenance equipment, traffic and activities may disturb sensitive noise receptors (human, fauna, including underwater noise impacts on fish and marine mammals, e.g., from piling during construction). 	<ul style="list-style-type: none"> Sensitive local route selection and siting of facilities, accompanied where necessary by noise attenuation measures. Use of modern, well maintained equipment fitted with abatement devices (e.g., mufflers, noise enclosures). Use of sensitive construction methods, e.g., “soft start” or “slow start” piling. Strict controls of timing of activities, e.g., blasting and other high noise emissions; prohibition on night working. Observance of seasonal sensitivities (e.g., breeding seasons), and alteration of activity to reduce noise levels at that time.
<p>Resources and Waste:</p> <ul style="list-style-type: none"> Abstraction of significant volume of water from surface or ground water sources for supply to aquaculture system may affect supply for human communities and ecosystems. 	<ul style="list-style-type: none"> Abstraction to take place with approval of relevant authorities at all locations. Water study prior to any abstraction, to inform a Sustainable Water Management Plan. Regular preventative maintenance of all system components to ensure that water wastage is as far as possible limited. Promotion of water efficiency (including leak detection) and water recycling.
<ul style="list-style-type: none"> Inefficient waste management during construction, operation and maintenance leading to excess consumption of materials, generation of wastes/emissions, pollution of soils and water; in particular, impacts of wastewater contaminated with nutrients and chemicals. 	<ul style="list-style-type: none"> Preparation of Waste Management Plan following the waste hierarchy, supported by staff training Earthworks to be designed to achieve a balance between cut and fill wherever possible Use of authorized contractors for hazardous and any other wastes which the project cannot dispose of safely. <p>See Pollution of Soils and Water above</p>

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Loss, fragmentation and degradation of habitat, and severance of animal migration routes and pathways:</p> <ul style="list-style-type: none"> Site footprint and earthworks during construction or maintenance causing loss, degradation or fragmentation of protected or ecologically sensitive areas (e.g., wetlands, migration routes), and other areas of conservation interest; and degradation following poorly managed rehabilitation. Impacts on habitats and species from habitat alteration and degradation (e.g., from reduction in downstream water supply, changes in water flow and drainage, soil erosion, pollution of water, soils or air, introduction of invasive species). 	<ul style="list-style-type: none"> Careful siting of all project components, with advice from biodiversity authorities/wildlife specialists, to avoid those which are most sensitive and provide priority ecosystem services (e.g., mangroves for coastal aquaculture). Wherever feasible, establishment of buffer zones around conservation areas, watercourses, and other locations identified as ecologically sensitive and avoidance or minimization of activity within these zones. Use of design and operational measures to maintain fish migration routes wherever possible. Rehabilitation of cleared areas with native species, and ecosystem restoration in habitats of conservation value, using specialist advice and input so as to maintain the integrity of the habitat, backed up by a long-term monitoring program and corrective actions as necessary. <p>Where development in sensitive areas cannot be avoided, mitigation may include:</p> <ul style="list-style-type: none"> Minimization of area impacted, clear demarcation of remaining intact areas of habitat, and prohibition of activity into those areas for any purpose; prohibit or minimize activities in vicinity of sensitive areas, e.g., fragile coastal habitats, upstream of these intact areas of habitat. Habitat rehabilitation and ecosystem restoration of areas no longer required to occur as soon as possible after construction. If loss of Critical Habitat is inevitable, development/implementation of an Offsets Programme. See relevant sections re: control of impacts from pollution, invasive species, and induced access.
<p>Impacts from Induced Access:</p> <ul style="list-style-type: none"> Development of aquaculture projects in previously undeveloped areas can lead to further development, increased disturbance and pressure on natural resources. 	<ul style="list-style-type: none"> Careful site selection and siting of all project components, with advice from biodiversity authorities/wildlife specialists to avoid previously undeveloped areas where possible. Restrictions on access to all temporary access roads, and their removal after construction. Access controls on permanent access roads.
<p>Direct Impacts on Flora and Fauna:</p> <ul style="list-style-type: none"> Earthworks and clearance may lead to loss of plant species and habitats of conservation interest. Development could displace animals and disturb their habitats, by direct disturbance during construction and operation (e.g., from noise, light disturbance at night, general human presence). Degradation of native populations due to spread of diseases from cultured species. 	<ul style="list-style-type: none"> Careful site selection and siting of all project components, with advice from biodiversity authorities/wildlife specialists. Careful planning of phasing and timing of construction activities. Demarcation and avoidance of areas of conservation interest (high value species, feeding or breeding sites, migration routes, etc.) where possible, and wildlife rescue and translocation where appropriate, under expert supervision. Monitoring of diseases in cultured stock and appropriate actions to eliminate these diseases. <p>Also see measures under soils, run-off and flooding, pollution of soils and water, noise/vibration and induced access above, and invasive species below.</p>

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Invasive Species</p> <ul style="list-style-type: none"> • Movement of plant and workforce into areas could introduce invasive species which adversely impact fauna, flora, ecosystems, and crops. • Accidental release of cultured species (especially non-native ones) may result in establishment of populations or genetic mixing with wild populations, leading to negative impacts on local flora and fauna. 	<ul style="list-style-type: none"> • Invasive Species Management Plan, developed and implemented in consultation with authorities, including appropriate eradication measures for different species/groups of species. • Staff training and awareness raising in communities on potential impacts of invasive species. • Encourage use of indigenous species in aquaculture systems. • No introduction of exotic species (e.g., for culture) without comprehensive study and government approval. • Where exotic species are cultured, monitor status of native species in surrounding area. • Where possible, clearance of invasive species during routine maintenance of water storage and distribution systems.
<p>Physical and Economic Displacement of People, Property, Assets and Resources:</p> <ul style="list-style-type: none"> • Development of aquaculture projects may physically displace people, or lead to loss of assets (e.g., fishing grounds, or land) or loss of income from other water based economic activities (e.g., navigation, tourism). • Changes in water flow reduction downstream of the aquaculture development (or down-current for coastal aquaculture), causing adverse effects on water availability or quality for other users. 	<p>While this project does not foresee large displacement, there may be cases where there may be temporary disturbances or lack of access due to civil works.</p> <ul style="list-style-type: none"> • Careful site selection and siting of all project components, avoid occupation of areas which are inhabited or regarded as of high value by communities where possible. • Put in place employment plan, giving preference to employment within local communities. • Early development and sensitive implementation of resettlement planning, in accordance with national regulations and international good practice to compensate for any losses (both physical and economic). • Develop compensation measures for affected parties, e.g., downstream water users, fishermen, coastal tourism.
<p>Economic Development and Employment:</p> <ul style="list-style-type: none"> • Direct employment of local population in workforce, and stimulation of local economy through export of and demand for goods and services to enhance livelihoods and economic activity in local communities; potential for adverse effects if expectations not met and community relations are not well managed. 	<ul style="list-style-type: none"> • Development of an Employment Plan, with clear employment requirements and procedures for the construction and operational/ maintenance workforce; fair and transparent hiring and staff management procedures. • Transparent and culturally appropriate communication with communities regarding employment opportunities. • Employment requirements and vocational training plan to be agreed with local institutions, so that local people can be trained to meet the project's needs in a timely fashion. • Development of measures to manage post-construction transition (e.g., SME development, ongoing opportunities for the workforce in aquaculture, reskilling and alternative employment).
<ul style="list-style-type: none"> • Procurement of local goods and services for development of aquaculture system and workforce could deplete resources available for local communities. 	<ul style="list-style-type: none"> • Procedures for sustainable local procurement, in consultation with local authorities and community leaders. • Local capacity building to foster community resilience. • Monitoring of local prices; exploration of corrective measures (e.g., alternative sourcing) if appropriate.

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Cultural Heritage:</p> <ul style="list-style-type: none"> Displacement or damage to cultural heritage sites by construction activities, harm to local setting, amenity value, etc. due to construction Change to intangible cultural heritage due to increased access, and interaction with workforce. 	<ul style="list-style-type: none"> Careful site selection and siting of all project components, taking account of community consultation/specialist surveys. Development of a Cultural Heritage Management Plan covering tangible and intangible (e.g., local traditions and practices) cultural heritage. Implementation of a “Chance Finds” procedure during construction.
<p>Community Health, Safety and Security:</p> <ul style="list-style-type: none"> Poor construction management practices may lead to adverse effects on safety, human health and wellbeing. 	<ul style="list-style-type: none"> Good construction site “housekeeping” and management procedures (including site access) Risk assessments and emergency response planning to consider impacts on local communities See also control of pollution under Physical Impacts heading.
<ul style="list-style-type: none"> Interaction between workforce and local communities may increase occurrence of communicable diseases, including HIV/AIDS and sexually transmitted diseases (STDs). 	<ul style="list-style-type: none"> Implementation of a health management system for the construction workforce, to ensure it is fit for work and that it will not introduce disease into local communities. Training and awareness raising for workforce and their dependents on HIV/AIDS and other STDs, and communicable diseases including malaria; health awareness raising campaigns for communities on similar topics.
<ul style="list-style-type: none"> Changes in exposure to water borne and water related diseases, especially those associated with water dwelling disease vectors (new areas of standing water created) or poor sanitary conditions. 	<ul style="list-style-type: none"> Provide information, education and communication about safe uses of water and occupational safety. Facilitate programs/measures to ensure appropriate sanitary and medical facilities are available. Implement environmental management measures for vector control: e.g., monitoring for key vectors; contact avoidance via site selection; focal insecticide and molluscicide application; other vector control measures (e.g., changes in water levels and flow rates).
<p>Workforce-Community Interactions:</p> <ul style="list-style-type: none"> Real or perceived disruption to normal community life, through the physical presence of a workforce. 	<ul style="list-style-type: none"> Adoption of a Stakeholder Engagement Plan, as a framework for early and ongoing community consultation. Implementation of a Grievance Procedure (see Grievance Procedure and Redress Mechanisms guidance note). Works procedures, defining a Code of Appropriate Conduct for all workers, including acceptable behavior with respect to community interactions.
<p>In-migration:</p> <ul style="list-style-type: none"> Individuals are likely to migrate into the area which may cause conflict with resident communities, and put pressure on resources and infrastructure. 	<ul style="list-style-type: none"> Careful site selection and siting of all project components, after consultation with communities and local authorities. Preparation and implementation of an Influx/In-migration Management Plan, in consultation with local authorities. <p>See also Economic Development and Employment, and Induced Access above</p>

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Labor and Working Conditions:</p> <ul style="list-style-type: none"> • Poor management of occupational health and safety leading to accidents, injuries and illnesses among workers (e.g., risks of working close to water); mental health issues due to remote or enclosed living. • Differences in nationality, ethnicity, religion, etc. may lead to discrimination and harassment, and differences (perceived or real) in working conditions between workers may lead to resentment. 	<ul style="list-style-type: none"> • Employment practices and working conditions should conform to International Labor Organization (ILO) Standards and national regulations. • Rest and recreational facilities and time should be provided, and rules on alcohol and drugs defined and clearly communicated to workers. • The basis for differences in the standard of accommodation should be non-discriminatory; it should be documented and communicated transparently to the workforce. • Clear and comprehensive health and safety reporting and grievance procedure system should be established, and be freely available to all of the workforce. <p>See also Employment and Economic Development and Human Rights</p>

GENERIC POTENTIAL ADVERSE IMPACTS AND RISKS OF FISHERIES AND FISHERIES-ASSOCIATED PROCESSING FACILITIES AND SERVICES SUB-PROJECTS

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Geology/Hydrogeology:</p> <ul style="list-style-type: none"> • Interruption or disruption of surface and groundwater flows from small-scale ground clearance and construction of landing, storage or processing facilities. 	<ul style="list-style-type: none"> • Design to take account of local hydrological conditions (e.g., taking extra care near permanent watercourses, do not hamper drainage of surface water, avoid works in areas prone to flooding especially during rainy season).
<ul style="list-style-type: none"> • Disruption of coastal processes (e.g., wave, tidal and current regime, sediment transport, flood and storm protection) from construction of landing and boat mooring facilities. 	<ul style="list-style-type: none"> • Siting and design to take account of shoreline configuration, near- shore currents, groundwater flows, and existing habitats. • Design and construction of compensatory shore protection and other measures to maintain coastal processes. • Monitoring of groundwater salinity; where necessary further mitigation may include control/diversion structures for saltwater, installation of cut off wells, sourcing of alternative water supply.
<p>Soils, Run-off and Flooding:</p> <ul style="list-style-type: none"> • Loss, damage or disruption of soil/sediments during small-scale construction works. 	<ul style="list-style-type: none"> • Minimization of cleared areas and soil disturbance, with revegetation as soon as feasible (with native species). • Early installation and regular maintenance of drainage and diversion structures, silt traps, etc; drainage outlets to discharge into vegetated areas if possible; vegetation along watercourses and drainage lines to be retained if possible. • Retention of topsoil for restoration (including tilling and revegetation) as soon as practicable. • Careful consideration of timing of works (overall duration and seasonality).
<ul style="list-style-type: none"> • Introduction of sediments to watercourses or interruption of drainage patterns, as a result of ground clearance and earthworks. 	
<p>Pollution of Soils and Water:</p> <ul style="list-style-type: none"> • Pollution of watercourses caused by wastewater from processing facilities, as well as small increases in sewage inputs due to workforce during construction works. 	<ul style="list-style-type: none"> • Ensure that waste and drainage water complies with discharge standards and treat accordingly. • Implementation of standard good wastewater management and disposal procedures. • Wastewater drainage outlets to discharge into vegetated areas if possible; vegetation along watercourses and drainage lines to be retained if possible. • Installation of sewage treatment to meet required standards; hygiene training for workforce.
<ul style="list-style-type: none"> • Release of hazardous substances associated with construction/maintenance activities or with transport of goods (e.g., accidental spills and leaks), leading to soil, surface or groundwater contamination. 	<ul style="list-style-type: none"> • Materials handling and control procedures, use of appropriate storage and containment equipment. • Control of vehicle movements and prohibition of vehicle washing in watercourses, and similar practices. • Emergency response plans during construction (contractors and local authorities).
<p>Air Quality:</p> <ul style="list-style-type: none"> • Dust and emissions from small-scale construction activities, and from vehicles and motorized vessels, could affect human health, vegetation and wildlife. 	<ul style="list-style-type: none"> • Sensitive site selection, and siting of construction works and access roads. • Use of modern equipment, meeting appropriate emissions standards, and regular preventative maintenance.

IMPACTS AND RISKS	MITIGATION MEASURES
<ul style="list-style-type: none"> Odors associated with preparation facilities may cause nuisance to nearby receptors. 	<ul style="list-style-type: none"> Encourage use of non-motorized vessels where appropriate; equip motorized vessels with well maintained, modern motors. Dust control and suppression measures, such as dampening and use of vegetation hedges. No use of ozone depleting substances during construction or operation. Implement appropriate solid waste disposal measures at processing sites.
<p>Noise and Vibration:</p> <ul style="list-style-type: none"> Noise and vibration from small-scale construction activities, and from vehicles and motorized vessels, may disturb sensitive noise receptors (human and fauna, including fish and marine mammals). 	<ul style="list-style-type: none"> Sensitive route selection for access roads, and siting of construction works and facilities, accompanied where necessary by noise attenuation measures. Use of modern, well maintained equipment fitted with abatement devices (e.g., mufflers, noise enclosures). Strict control of timing of activities (e.g., prohibition on night working where possible). Observance of seasonal sensitivities (e.g., breeding seasons), and alteration of activity to reduce noise levels at that time.
<p>Resources and Waste:</p> <ul style="list-style-type: none"> Excessive or unregulated capture of a small range of target species and accidental capture of other non-targeted species may deplete stocks and place pressure on local food resources. 	<ul style="list-style-type: none"> Institute measures to ensure sustainability of fisheries, through use of quotas, seasonal and 'sensitive area' closures, compulsory permitting etc.; encouraging sustainable traditional practices and restricting practices allowing large and non-specific catches (e.g., trawling, use of fish poisons or explosives); education and awareness-raising around overfishing. Include consideration of local resource needs within planning of quotas.
<ul style="list-style-type: none"> Inefficient waste management during construction, operation and maintenance leading to excess consumption of materials, generation of wastes/emissions, pollution of soils and water. 	<ul style="list-style-type: none"> Preparation of Waste Management Plan following the waste hierarchy, supported by training and awareness-raising around topic of waste for workforce and for local community. Use of authorized contractors for hazardous and any other wastes which the project cannot dispose of safely.
<p>Loss, fragmentation and degradation of habitat, and severance of animal migration routes and pathways:</p> <ul style="list-style-type: none"> Small-scale construction works causing loss, degradation or fragmentation of protected or ecologically sensitive areas (e.g., wetlands, migration routes), and other areas of conservation interest. 	<ul style="list-style-type: none"> Careful siting of all project components, with advice from biodiversity authorities/wildlife specialists. Wherever feasible, establishment of buffer zones around conservation areas, watercourses, and other locations identified as ecologically sensitive, and avoidance or minimization of activity within these zones.

IMPACTS AND RISKS	MITIGATION MEASURES
<ul style="list-style-type: none"> Impacts on habitats and species from habitat alteration and degradation during construction and operation (e.g., changes in water flow and drainage, soil erosion, pollution of water, soils or air). 	<ul style="list-style-type: none"> Rehabilitation of cleared areas with native species, and ecosystem restoration in habitats of conservation value, using specialist advice and input so as to maintain the integrity of the habitat, backed up by a long-term monitoring program and corrective actions as necessary. <p>Where development in sensitive areas cannot be avoided, mitigation may include:</p> <ul style="list-style-type: none"> Minimization of area impacted, clear demarcation of remaining intact areas of habitat, and prohibition of activity into those areas for any purpose; prohibit or minimize activities in the vicinity of sensitive areas. Habitat rehabilitation and ecosystem restoration of areas no longer required to occur as soon as possible after construction. If loss of Critical Habitat is inevitable, development/implementation of an Offsets Programme. Education of workforce and local communities as to the potential damage fisheries may cause to ecosystems, and on methods for avoiding damage (e.g., using buoys and designated anchoring locations). <p>See relevant sections re: control of impacts from pollution, invasive species, and induced access.</p>
<ul style="list-style-type: none"> Impacts on habitats and species from habitat alteration and degradation caused by fishing activities (e.g., anchor or net damage to subsurface habitats). 	<ul style="list-style-type: none"> Discourage use of destructive fishing practices, such as trawling; provide materials and training in support of sustainable and non-destructive fishing practices. Education and awareness-raising around potential impacts of different fishing methods on habitats and the importance of habitat conservation.
<p>Impacts from Induced Access:</p> <ul style="list-style-type: none"> Development of artisanal fisheries projects in remote or undeveloped areas leading to further development, increased disturbance and pressure on natural resources through bushmeat hunting, logging, fire, etc. 	<ul style="list-style-type: none"> Careful site selection, with advice from biodiversity authorities/ wildlife specialists to avoid remote and previously inaccessible areas where possible. Where possible, instate access controls on roads leading to project facilities (e.g., jetties, processing facilities) in otherwise undeveloped or remote areas.
<p>Direct Impacts on Flora and Fauna:</p> <ul style="list-style-type: none"> Small-scale ground clearance may lead to loss of plant species and habitats of conservation interest. Development may displace animals and disturb their habitats (e.g., increased vessel and vehicle presence, construction of landing areas and processing facilities). 	<ul style="list-style-type: none"> Careful site selection and siting of project facilities, with advice from biodiversity authorities/wildlife specialists. Careful planning of phasing and timing of construction activities. Demarcation and avoidance of areas of conservation interest (high value species, feeding or breeding sites, migration routes, etc.) where possible, and wildlife rescue and translocation where appropriate, under expert supervision. Also see measures under soils, run-off and flooding, pollution of soils and water, noise / vibration and induced access above, and invasive species below.
<ul style="list-style-type: none"> Direct mortality of target and non-target species, leading to depletion of their populations, including involuntary capture in lost nets. 	<ul style="list-style-type: none"> Institute measures to ensure sustainability of fisheries, through use of quotas, seasonal and 'sensitive area' closures, compulsory permitting etc.; encouraging sustainable traditional practices and restricting harmful practices (e.g., trawling, use of fish poisons or explosives); education and awareness-raising around overfishing, sensitive species and habitats.

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Invasive Species:</p> <ul style="list-style-type: none"> • Movement of a workforce into the project area, or introduction of non-native species during rehabilitation, could introduce invasive species which adversely impact fauna, flora, ecosystems, and crops. 	<ul style="list-style-type: none"> • Invasive Species Management Plan, which should be developed and implemented in consultation with authorities, including appropriate eradication measures for different species/groups of species. • Staff training and awareness-raising in communities. • No introduction of exotic species (e.g., for site rehabilitation) without specialist vetting and government approval.
<p>Physical and Economic Displacement of People, Property, Assets and Resources:</p> <ul style="list-style-type: none"> • Construction of associated facilities may physically displace people, or lead to loss of assets (e.g., loss of land of agricultural importance). • Potential for economic displacement of specific individuals or groups with existing income from fisheries if they are excluded from sub-projects, or of other water based economic activities (e.g., navigation, tourism). 	<ul style="list-style-type: none"> • Careful site selection and siting of project facilities, avoiding occupation of areas which are inhabited or regarded as having high value by communities where possible. • Early development and sensitive implementation of resettlement planning, in accordance with national regulations and international good practice to compensate for any losses (both physical and economic). • Put in place employment plan, giving preference to employment within local communities. • Develop detailed baseline of existing reliance on fishery resources in the project area, both within the local community and outside of the community of focus; from this, identify specific groups that may not benefit from the project and adopt corrective measures as required. • Develop compensation measures for affected parties (e.g., excluded fishermen).
<p>Economic Development and Employment:</p> <ul style="list-style-type: none"> • Direct employment of local population in the construction workforce. • Stimulation of local economy through export of produce to market, and increased demand for goods and services to enhance livelihoods and economic activity in local communities; potential for adverse effects if expectations not met and community relations are not well managed. 	<ul style="list-style-type: none"> • For artisanal fisheries projects, a community-based approach is encouraged: the small construction workforce should be sourced in the local or regional area; further skills required for fishing, processing or maintenance activities to be included in local training programs and developed within the community, in order to retain value within that local community. • Development of an Employment Plan, with clear employment requirements and procedures for the construction workforce. • Transparent and culturally appropriate communication with communities regarding employment opportunities.
<ul style="list-style-type: none"> • Procurement of local goods and services for development of related facilities and equipment, and for the workforce could deplete resources available for local communities. 	<ul style="list-style-type: none"> • Procedures for sustainable local procurement, in consultation with local authorities and community leaders.
<p>Cultural Heritage:</p> <ul style="list-style-type: none"> • Displacement or disturbance to cultural heritage sites caused by construction or fishing activities, harm to local setting, amenity value, etc. due to construction. • Change to intangible cultural heritage due to increased access, and interaction with non-local workforce. 	<ul style="list-style-type: none"> • Careful site selection and siting of all project facilities, taking account of community consultation/specialist surveys. • Development of a Cultural Heritage Management Plan covering tangible and intangible (e.g., local traditions and practices) cultural heritage. • Implementation of a “Chance Finds” procedure during construction.

IMPACTS AND RISKS	MITIGATION MEASURES
<p>Community Health, Safety and Security:</p> <ul style="list-style-type: none"> Poor construction management practices may lead to adverse effects on safety, human health and wellbeing. 	<ul style="list-style-type: none"> Good construction site “housekeeping” and management procedures (including site access). Risk assessments and emergency response planning to consider impacts on local communities. See also control of pollution under Physical Impacts heading.
<ul style="list-style-type: none"> Changes to local food availability, due to export of increased proportion of captured fish, may lead to malnutrition. 	<ul style="list-style-type: none"> Provision of community support and development mechanisms for subsistence fisheries/aquaculture.
<ul style="list-style-type: none"> Interaction between any non-local construction workers and local communities may increase occurrence of communicable diseases, including HIV/AIDS and sexually transmitted diseases (STDs). 	<ul style="list-style-type: none"> Implementation of a health management system for the workforce, to ensure it is fit for work and that it will not introduce disease into local communities. Training and awareness raising for workforce and their dependents on HIV/AIDS and other STDs, and communicable diseases including malaria; health awareness raising campaigns for communities on similar topics.
<p>Workforce-Community Interactions:</p> <ul style="list-style-type: none"> Real or perceived disruption to normal community life, through the physical presence of a non-local workforce. 	<ul style="list-style-type: none"> Adoption of a Stakeholder Engagement Plan, as a framework for early and ongoing community consultation Implementation of a Grievance Procedure (see Grievance Procedure and Redress Mechanisms guidance note). Works procedures, defining a Code of Appropriate Conduct for all workers, including acceptable behavior with respect to community interactions.
<p>Labor and Working Conditions:</p> <ul style="list-style-type: none"> Poor management of occupational health and safety leading to accidents, injuries and illnesses among workers. Differences (perceived or real) in working conditions between workers may lead to resentment. 	<ul style="list-style-type: none"> Construction employment practices, working conditions and workforce living conditions should conform to International Labor Organization (ILO) Standards and national regulations. Clear and comprehensive health and safety reporting and a grievance procedure system should be established, and be freely available to all of the workforce. <p>See also Employment and Economic Development.</p>

Source: AfDB, 2015, pp. 125-127.

Small- to medium-scale enterprises for agencies providing vessels services (e.g. stevedoring, chandlery). Focus on integration of logistical services to include ice, bait, and gear for the demersal and semi-industrial fisheries	<ul style="list-style-type: none"> Positives results from “the value-chain and feasibility study to guide investments in the processing and services sector” 	<ul style="list-style-type: none"> SWIOFish3 PPA: “value-chain and feasibility study to guide investments in the processing and services sector” 	<ul style="list-style-type: none"> Approval by the Fishing Port Development Committee, if relevant Land allocated
Small- to medium-scale enterprises for logistical services to the aquaculture sector, including security services for onshore and offshore installations	<ul style="list-style-type: none"> Mariculture master plan in place 		<ul style="list-style-type: none"> Land allocated
5.2. Scientific support services			
Fisheries observer companies	N/A		
Environmental monitoring consultancy firms	N/A		
Fisheries science and management consultancy companies	N/A		