

Annex D

Framework Environmental
and Social Management Plan
(ESMP)

Impact	Objective	Project Phase	Mitigation/ Enhancement Measures	Monitoring	Respor
Biophysical Impacts					
Impact of Dredging and Spoil Deposition on the Zambezi delta and Ramsar wetland.	To ensure that the dredging does not result in significant changes to flood patterns and water levels in the wet season	Construction and Operation	Should the dimensions (length, width or depth) of the navigable channel change significantly from that proposed by RML, the EF study should be amended accordingly	Monitor dimensions of navigable channel to ensure it does not change significantly over time.	RML Pushbo
Impact of dredging and spoil deposition on benthic habitat	To minimise disturbance to benthic habitat through minimising maintenance dredging.	Construction and Operation	Where possible, deposit spoils in lee of islands and sand bars. Spoils must not be deposited in or near the entrances of distributaries.	Ad hoc visual monitoring of distributaries during dredging operations to ensure no build up of spoil at entrances occur.	Dredgi Contra
Impact of Routine Coal Spillage on Freshwater Aquatic Invertebrates	To reduce the likelihood and spatial extent of coal spillage.	Operational, Decommissioning and Closure	Procedures for loading and transferring coal must be clearly defined, communicated and enforced. The sacrificial zone around the loading and transfer areas must be clearly demarcated. An Environmental Management Plan will be prepared that includes reporting of any coal spillages, regular testing of the river bottom both within the sacrificial zone and areas nearby areas of interest. Should coal be found outside the sacrificial zone, procedures will be incorporated of modified to avoid future spillages.	Sample points outside the sacrificial areas every 6 months.	RML
Impact of accidental fuel spills on aquatic invertebrates	To reduce the likelihood of accidental fuel spills.	Construction and Operational	Procedures for refuelling and other potentially hazardous activities, must be clearly defined, communicated and enforced. Refuelling must only occur at designated sites at Benga and Chinde Follow a Spill Response Plan Training of Personnel		RML Site Ma at Beng Chinde Pushbo
Impact of bank collapse on aquatic invertebrates	To ensure that river bank instability is not aggravated by barging and associated activities.	Construction and Operation	Down river speeds should not exceed 9 knots speed through water and up river speeds should not exceed 7 knots speed through water.	Monitor length of navigable channel to ensure it does not shorten significantly	RML Pushbo

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			The length of the navigable channel should remain fairly constant to ensure that the present-day sinuosity of the river is maintained.	over time.	
Impact of Dredging on Turbidity and Fish	To minimize impacts on fish due to dredging associated activities.	Construction and Operation	Limit the dredge area and depth to that strictly necessary to maintain the navigable channel.		RML Dredging Contract
Impact of Accidental Fuel Spills on Fish	To minimize impacts on fish species due to diesel spills.	Construction and Operation	Develop and implement procedures for spill prevention and emergency spill clean up. Crews should be trained for emergency response and oil spill clean ups. Ensure that pipes and hoses are properly connected, closed and in good condition when bunkering. Ensure that transfer hoses are of sufficient length and strength to manoeuvre vessels according to the river flow conditions. Incorporate automatic shut off valves.	Perform 6 monthly audits to ensure spill remediation measures are being undertaken and that the necessary equipment and training are being available.	Pushbo Dredge contract
Impact of accidental Coal Spills on Fish	To minimize impacts on fish species by minimising coal spills	Operation	Develop and implement procedures for coal spill prevention and clean-up should there be a significant spill outside designated "sacrificial" areas around coal loading areas.		RML
Impact of Changes in the Hydrology and Flooding Pattern on Fish	To ensure that the dimensions of the navigable channel don't change significantly from that proposed by Riversdale	Construction and Operation	Should the dimensions (length, width or depth) of the navigable channel change significantly from that proposed by RML, the EF study should be amended accordingly Spoil should not deposited so as to block tributaries or distributaries.	Monitor dimensions of navigable channel to ensure it does not change significantly over time.	RML Pushbo
Impact of Dredging on Injuries to Fish	To minimize dredging.	Construction and Operation	Limit the dredge area and depth to that strictly necessary to maintain the navigable channel.		RML Dredge Contract
Impact on Depth Classes due to Dredging	To minimize the potential impacts on depth classes due to dredging.	Construction and Operation	Where possible, plan dredging activities out of the breeding season which occurs during the rainy season		RML Dredge

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			<p>and possibly three months after the end of the rainy season, to allow for the juveniles to grow.</p> <p>Limit the dredging activities to that required to maintain the navigable channel.</p>		Contract
Impact of Benga land based facilities on terrestrial ecology and habitat	To reduce potential impacts on habitats and tree cover, especially at the riparian zone at Benga.	Construction, Operation, Decommissioning and Closure	<p>Do not remove baobab trees.</p> <p>For every tree removed with Diameter Breast Height > 5cm the contractor should plant at least 2 replacement trees.</p> <p>Clearly demarcate no-go areas (including at the riparian areas) beyond which personnel and equipment are not allowed to go.</p> <p>Rehabilitate and revegetate disturbed areas after construction.</p> <p>Develop and implement spill prevention and emergency spill clean up measures.</p> <p>Undertake regular maintenance of machinery and vehicles Maintenance of equipment or vehicles to be carried out at Benga Mine.</p> <p>Any soil contaminated with diesel or oil must be remediated.</p> <p>Storage areas for fuel and other chemicals must be located at least 50m from the bank of the Zambezi River.</p> <p>Storage areas for chemicals must have appropriate signs in English and Portuguese</p> <p>Fuel tanks must be placed on flat land, on an impermeable surface and bunded so that the volume in the bund equals at 110 percent of the total storage capacity. The tanks should be located on dry land 50m</p>	<p>Re-vegetated areas should be visually inspected on a weekly basis to ensure growth and adequate cover. Areas with poor cover need to be attended to by re-seeding and possibly fertilising soils.</p> <p>Maintain maintenance records for machinery and equipment.</p> <p>Perform 6 monthly audits to ensure spill remediation measures are being undertaken and that the necessary equipment and training are being available.</p> <p>Ad hoc and regular visual inspection of fuel storage areas.</p>	RML Site Ma

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			<p>away from the Zambezi River or any other watercourse.</p> <p>A system for collecting and appropriately treating or disposing of any spills must be implemented.</p> <p>The area where the work is under way must be kept clean and waste must not be burnt, buried or discarded indiscriminately.</p> <p>Scrap metal must be removed from the area and disposed of appropriately.</p> <p>Waste containers with monkey-proof lids must be provided and emptied regularly. Waste must be disposed of appropriately at a waste site.</p> <p>Biodegradable material can be used for making compost to assist the re-vegetation of any disturbed areas or deposited in waste pits and then covered in soil.</p> <p>Employees working with chemical products must receive appropriate instructions and personal protection equipment.</p>		
Impact of Chinde land based facilities on mangroves	To minimise the impacts on land and adjacent mangroves during construction of land-based facilities at Chinde.	Construction, Operational and Decommissioning and Closure	<p>Clearly demarcate a no-go area beyond which personnel and equipment are not allowed to go.</p> <p>The removal of mangrove trees by workers or for construction purposes must be prohibited.</p> <p>No excavation within the mangrove for laying down the pumpout pipeline should be permitted.</p> <p>Develop and implement spill prevention and emergency spill clean up procedures.</p> <p>Regularly maintain machinery and vehicles</p> <p>Maintenance of equipment or vehicles to be carried out</p>	<p>Maintain maintenance records for machinery and equipment.</p> <p>Perform 6 monthly audits to ensure spill remediation measures are being undertaken and that the necessary equipment and training are being available.</p>	RML Site Ma

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			<p>in designated areas with an impermeable surface and adequate oil and water separation.</p> <p>Any soil contaminated with diesel or oil must be remediated.</p> <p>Storage areas for fuel and other chemicals must be located at least 50m from the bank of the Zambezi River or Maria River.</p> <p>Fuel tanks must be placed on flat land, on an impermeable surface and bunded so that the volume in the bund equals at 110 percent of the total storage capacity. A system for collecting and appropriately treating or disposing of any spills must be implemented.</p> <p>The area where the work is under way must be kept clean and waste must not be burnt, buried or discarded indiscriminately.</p> <p>Scrap metal must be removed from the area and disposed of appropriately.</p> <p>Waste containers with monkey-proof lids must be provided and emptied regularly. Waste must be disposed of appropriately at a waste site.</p> <p>Biodegradable material can be used for making compost to assist the re-vegetation of any disturbed areas or deposited in waste pits and then covered in soil.</p>	Ad hoc and regular visual inspection of fuel storage areas.	
Disturbance to riparian habitats due to dredging and spoil deposition	To minimize impacts on riparian habitats due to dredging associated activities.	Construction and Operation	<p>Discharge pipelines should not be laid across islands.</p> <p>Sandy and vegetation islands should be considered no-go zone for any activities due to their importance as bird restore, resting and feeding areas.</p>		Dredgi Contra
Impact of accidental fuel spills	To minimize impacts on riparian habitats	Construction and Operation	Develop and implement spill prevention and	Perform 6 monthly	Pushbo

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on riparian habitats	due to diesel spills.		<p>emergency spill clean up measures.</p> <p>Ensure adherence to all standard operating procedures.</p> <p>Crews should be trained for emergency response and oil spill clean ups.</p> <p>Ensure that pipes and hoses are properly connected, closed and in good condition when bunkering.</p> <p>Ensure absorbent pads are available where they may be required.</p> <p>For major oil spills on water ensure that floating booms are available to contain spills.</p> <p>Ensure that transfer hoses are of sufficient length and strength to manoeuvre vessels according to the river flow conditions.</p> <p>Ensure refuelling sites are well lit.</p> <p>Desist from refuelling operations during bad weather.</p>	<p>audits to ensure spill remediation measures are being undertaken and that the necessary equipment and training are being available.</p>	Dredge contrac
Increase in rate of erosion of riparian habitats due to wakes from barges and push boats	To minimize potential erosion of riparian habitats arising from wakes and waves produced during barging operations.	Construction and Operation	<p>Barges moving upstream should not exceed 7 knots speed through water.</p> <p>Speed through water should not exceed 5 knots in the vicinity of the mangroves at Chinde.</p>	<p>Log vessel track and time to allow determination of vessel speed over land and, from measurements of river current speed, vessel speed through water.</p>	Pushbo
Changes to hippopotamus behaviour and an increase in human animal conflict	To minimise the impacts on submerged habitats for hippos and hence to minimise altering hippo behaviour.	Construction and Operation	<p>Where practicable, deposit dredged material in the lee of islands and sandbars.</p> <p>Convoys should not exceed speed limits</p>	<p>Monitor incidents involving hippos and local residents and undertake a trend analysis over time.</p> <p>Log vessel track and time to allow</p>	Pushbo Dredge contrac

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				determination of vessel speed over land and, from measurements of river current speed, vessel speed through water.	
Impact of human and vehicle traffic on salt marsh habitat	To minimise disturbance to salt marsh habitats.	Construction and Operation	Demarcates salt marsh areas as no-go areas. Ensure that care and attention is applied to reduce damage and assist recovery of damaged areas through sod replacement.	Ad hoc monitoring of no go areas.	RML
Impact of Noise on River and Estuarine Fauna	To minimise noise disturbance during the construction phase.	Construction	Use oscillatory /vibratory piling techniques as opposed to percussion piling where possible.		Contract
Impact of Anchoring of Transloaders and OGVs on the Sofala Bank Sea Bed	To minimise the area disturbed by the anchoring system.	Operation	Ensure that the transloader and ocean going vessel are always anchored within the same defined area.		RML OGV c
Impact of coal dust on vegetation and water quality in the estuary	To minimise the generation of coal dust.	Operation	Minimise the elevation from which coal is discharged into hoppers during transfers Ensure water sprays are installed and used	Use remote sensing and visual monitoring to track mangrove response (in terms of area) over 10 years of operation.	RML
Impact of operational coal spillage on the estuary environment	To minimise coal spillage.	Operation	Implement good housekeeping and implementation of procedures to minimise coal spillages. Modify procedures to improve where required. A sacrificial zone around the coal transfer areas must be clearly demarcated, and spillage of coal within this zone can be tolerated. Develop a Coal Transfer Management Plan Pick up coal should a spill be appreciable and does not disperse within specified times..	Monitor river mouth bathymetry	RML
Impact of coal dust and	To minimise the generation of coal dust	Operation	Minimise the elevation from which coal is discharged		RML

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operational coal spillage on the marine environment	and coal spillage.		<p>into hoppers during transfers.</p> <p>Utilise an efficient transfer system using trained personnel to minimise coal spillages.</p> <p>Install catch plates or similar to capture spillages.</p>		
Impact of Operational Discharges from OGVs on the Marine and Estuarine Environment	To minimise pollution and contamination from OGVs.	Operation	<p>Compliance with laws regulating routine operational discharges, emissions and waste disposal at sea.</p> <p>Compliance with Waste Management Plans</p> <p>Adequate maintenance of ship engines, motors and generators to minimise soot content in exhaust gases.</p> <p>Minimisation of waste production and adoption of a 'cradle to grave' responsibility for wastes.</p>		OGV cē
Impact of accidental fuel spills during fuel transfers	To minimise hydrocarbon spillages.	Operation	<p>Use double skin reinforced hose for fuel transfers.</p> <p>Ensure that automatic shut-off valves are used to limit losses to the volume in the pipeline should this rupture.</p> <p>Use a designated dock for refuelling with fully maintained fuel storage and pumping systems.</p> <p>Ensure refuelling stations are well lit and desist from refuelling during bd weather</p>		RML
Impact of ballast water discharges on the marine environment	To prevent alien invasive organisms from entering Mozambican coastal waters.	Operation	Apply the IMO (2004) recommended ballast water treatment procedures to bulk carriers loading off the Zambezi River and ensure that they are early adopters of new standards and treatment procedures accepted by IMO. More definitive data on the major trading ports will improve the understanding of the risk and determine whether more stringent procedures, such as, e.g., heat or biocide treatment of ballast water or other measures may be required.		OGV cē
Impact of groundings and/or	To prevent any accidents or collisions from	Construction, Operation,	Ensure experienced, certificated tug masters are	Record and	RML

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collisions of barges and/ or tugs in the River	occurring.	Decommissioning and Closure	employed. Implement traffic safety procedures and ensure that all operators are adequately trained. Ensure that spill prevention and spill remediation equipment is readily available and that personnel are adequately trained in their use.	investigate all incidents. Implement measures to address the cause of such accidents.	Pushbo
Impact of Salinity Intrusion on the Estuary due to Dredging of the Offshore Sandbar	To prevent erosion of the beaches at Chinde.	Construction and Operation	None required		Pushbo
Impact of collisions of barges and/ or tugs in the marine environment	To prevent any damage to tugs and spills in the marine environment.	Operation	Ensure experienced, certificated tug masters are employed. Implement traffic safety procedures and ensure that all operators are adequately trained. Ensure that spill prevention and spill remediation equipment is readily available and that personnel are adequately trained in their use. Ensure tugs have protected fuel tanks.	Record and investigate all incidents. Implement measures to address the cause of such accidents.	RML Tugboa Translo captain OGV ca
Impact of dredging the offshore sandbar on littoral drift sediment dynamics and beach erosion	To prevent erosion of the beaches at Chinde.	Construction and Operation	Deposit dredge spoil to the north of the channel and within the littoral zone, i.e. at a depth shallower than - 5m CD	Record site of spoil deposition.	RML Dredgi Contra
Impact of Land-based Facilities on Bird Habitat	To minimize the loss of and/or disturbance to bird habitats and land for infrastructures	Construction and Operation	A bird specialist or experience birder must visit the project impact sites in the delta region downstream of Dona Ana to confirm that the impact zones do not include any significant roosting or nesting sites. This confirmatory visit should be undertaken during the breeding season during April-May and should be early enough so that any significant findings can be used to modify the project footprint in mitigation of anticipated significant impacts. All construction workers must be informed of the need to preserve wherever possible natural tree cover fringing riparian trees along the Zambezi River and mangroves.		RML Site Managu

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			<p>All work is to be limited to a designated work area.</p> <p>After the works have ended and the temporary infrastructure has been removed, degraded areas must be rehabilitated</p> <p>Construction materials and waste must not be disposed of on site.</p> <p>Limit the creation and dimensions of access roads in the mangrove area to that which is strictly necessary.</p>		
Impact of Noise on Birds	To minimize impacts of noise on bird breeding, feeding and resting behaviour during construction operations.	Construction	<p>Wherever possible the installation of mooring points by pile driving should be made outside the breeding seasons (i.e. during the winter period between April and September).</p> <p>Pile driving of mooring points should be carried only during daylight hours.</p> <p>Restrict other construction activities to daylight hours.</p> <p>Carry out routine maintenance of equipment and vehicles to ensure that they are in good working order.</p>		RML Site Manag
Impact of Disturbances on Island Bird Habitats due to Dredging	To minimize impacts on vegetated and non-vegetated islands and riparian habitats arising from operations associated with dredging.	Construction and Operation	<p>Laying of discharge pipelines across islands should be prohibited</p> <p>Sandy and vegetated islands should be considered no-go areas for any activities due to their importance as bird nesting, resting and feeding areas.</p> <p>Workers must be prohibited from setting up temporary camps or shelters on the islands, lighting fires on the islands for cooking and, in general landing on the islands.</p>		RML Dredgi Contra
Impact of Accidental Fuel Spills on Birds and Bird Habitats	To minimize diesel spills during dredging and barging operations.	Construction and Operation	<p>Implement good operating procedures.</p> <p>Develop and implement procedures for spill</p>		RML

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			<p>prevention and emergency spill clean up.</p> <p>Crews should be trained for emergency response and oil spill clean ups.</p> <p>Ensure that pipes and hoses are properly connected, closed and in good condition when bunkering.</p> <p>Ensure that transfer hoses are of sufficient length and strength to manoeuvre vessels according to the river flow conditions.</p> <p>Incorporate automatic shut off valves.</p> <p>Ensure the refuelling area is well lit during night operations.</p> <p>Develop a management plan that may include provision to desist from refuelling operations during inclement weather.</p>		
Impact of Bird Hunting by Workers during the Construction and Operational Phases	To eliminate hunting by RML employees and contractors	Construction and Operation	All workers must be informed of that hunting of any fauna species (including birds) is prohibited. Employment contracts should include clauses that prohibit workers from hunting wildlife and infringements to this prohibition will result in the application of penalties.		RML Site Managi RML Contra
Impact of Spoil Deposition on High Flow Distributaries and Bird Feeding and Breeding	To minimise blockage of high flow distributaries.	Construction and Operation	<p>No deposition of spoil materials must is permitted at the entrance to any distributary channel (these channels should be mapped using GPS coordinates).</p> <p>Ensure that dredging contractors are made aware of the importance of keeping the distributaries clear.</p> <p>Spoil deposition should be made in the in the lee of islands as opposed to spoil deposition along the dredged channels</p>		RML
Impact of Dredging on Bird	To minimize impacts on shallow water	Construction and Operation	Spoils should be deposited in lee of existing islands,		Dredge

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Food Sources	habitats important for bird species due to dredging associated activities.		where this is possible. This should reduce the intensity of maintenance dredging, and reduce the area affected by spoils from 17% to between 11 and 15% of the active channel (Southern Waters 2010a).		Contact RML
Contribution to Mozambique's Greenhouse Gas emissions	To minimise Greenhouse Gas emissions	Construction and Operation	Quantify, monitor and report on Greenhouse Gas emissions annually. Investigate technically and financially feasible options to reduce or offset project-related Greenhouse Gas emissions.		Dredge Contact RML
Socio-economic Impacts					
Impact of the Project on Mozambican society (Cost Benefit Analysis)	To maximise the NPV..	Construction, Operation, Decommissioning and Closure	Where possible, ensure that operations proceed for as long as possible.		
Noise impact of barging on riverside communities	To minimise noise impacts on receptors.	Operation	Ensure that the pushboats are designed to achieve noise levels that are as low as practicable and the boats are serviced regularly.	Maintain maintenance records. Implement a Grievance Mechanism and respond to all complaints raised.	RML
Noise impact of dredging on riverside communities	To minimise noise impacts on receptors.	Construction and Operation	Ensure that the dredgers are serviced regularly. Notify potentially affected communities of impending dredging.	Maintain maintenance records. Implement a Grievance Mechanism and respond to all complaints raised.	RML Dredgi Contra

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Noise impact at the Loadout Point at Benga	To minimise noise impacts on receptors.	Construction and Operation	Undertake pile driving activities between 8am and 5pm only. If possible, use vibration pile driving instead of percussive pile driving. Notify potentially affected communities prior to pile driving Ensure all pushboats and tugboats are serviced regularly and maintained in good working order.	Construction manager to monitor operating times. Maintain maintenance records. Implement a Grievance Mechanism and respond to all complaints raised.	RML Contract
Noise impact at the Dona Ana Bridge	To minimise noise impacts on receptors.	Construction and Operation	Undertake pile driving activities between 8am and 5pm only. If possible, use vibration pile driving instead of percussive pile driving. Notify potentially affected communities prior to pile driving Ensure all pushboats and tugboats are serviced regularly and maintained in good working order.	Construction manager to monitor operating times. Maintain maintenance records. Implement a Grievance Mechanism and respond to all complaints raised.	RML Contract
Noise impact at Barge Mooring Chinde	To minimise noise impacts on receptors.	Construction and Operation	Undertake pile driving activities between 8am and 5pm only. If possible, use vibration pile driving instead of percussive pile driving. Notify potentially affected communities prior to pile driving Ensure all pushboats and tugboats are serviced regularly and maintained in good working order.	Construction manager to monitor operating times. Maintain maintenance records. Implement a Grievance Mechanism and respond to all complaints raised.	RML Contract
Impact of dredging on artisanal and semi-industrial fishing activities in the river	To minimise physical disruption to fishing activities.	Construction and Operation	Communicate dredging operations to potentially affected communities prior to commencing them.	Implement a Grievance Mechanism and	RML

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			Investigate and replace fishing equipment that have been damaged or destroyed as a result of dredging.	respond to all issues raised.	
Impact of barging operations on artisanal and semi-industrial fishing activities	To minimise physical disruption to fishing activities.	Operations	<p>A timetable indicating barge convoys travel schedule must be produced and distributed at each major riverine locality and updated regularly.</p> <p>Replace fishing equipment (lines, nets or even canoes) that can be demonstrated to have been damaged or destroyed as a result of barging.</p> <p>Implement and enforce speed limits. Loaded barges moving downstream should not exceed 5 knots through the water. Light barges moving upstream should not exceed 7 knots through the water.</p>	Implement a Grievance Mechanism and respond to all issues raised	RML
Impact of safety exclusion zones on artisanal fishing at Chinde	To minimise the total area of the exclusion zones.	Construction and Operation	During the operational phase, remove or reduce the exclusion zones whenever it is safe to do so (when no berthing is occurring).	Implement a Grievance Mechanism and respond to all issues raised.	RML
Impact of safety exclusion zone on offshore semi-industrial and industrial fishing	To minimise disruption of fishing.	Operation	Ensure adequate communications with fishermen so as to alert them to transloading activities	Implement a Grievance Mechanism and respond to all issues raised.	RML
Impact of barging on river safety	To prevent any injury or death to local communities as a result of the Project.	Operation	<p>A timetable indicating barge convoys travel schedule must be produced and distributed at each major riverine locality.</p> <p>Implement speed limits on convoys so as to limit wake effects and to allow people in canoes enough time to move to safety when they see the convoy approaching. Loaded barges moving downstream should not exceed 5 knots through the water. Light barges moving upstream should not exceed 7 knots through the water.</p> <p>Convoys must make their presence conspicuous through use of sound and light signals, in order to make river users aware of their approach.</p>		RML Pushbo

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			Establish a grievance process with the local communities and develop and management plan to address issues.		
Impact of convoy wakes on river margin activities (washing, bathing, water collecting)	To minimise wake effects.	Construction and Operation	<p>Appropriate barge design measures should be in place to limit wake generation.</p> <p>A timetable indicating barge convoys travel schedule must be produced. This time table should have information on expected sail-through time by each major riverine locality, and must be distributed for public knowledge.</p> <p>Implement speed limits on convoys so as to limit wake effects and to allow people in canoes enough time to move to safety when they see the convoy approaching. Loaded barges moving downstream should not exceed 5 knots through the water. Light barges moving upstream should not exceed 7 knots through the water.</p> <p>Convoys must make their presence conspicuous through use of sound and light signals, in order to make river users aware of their approach.</p> <p>Establish a grievance process with the local communities and develop and management plan to address issues.</p>		RML
Impact of accidental fuel spills on river margin activities (washing, bathing, water collecting)	To avoid spilling any coal or fuel in the river during routine barging operations.	Construction and Operation	<p>Ensure all barges, transloaders, pushboats and tugboats are serviced regularly and maintained in good working condition;</p> <p>Adequate spillage prevention procedures must be applied during loading and transport;</p> <p>Water quality sampling should be undertaken in the event of a major fuel spill to inform remediation measures</p>	<p>Maintain maintenance records.</p> <p>Implement a Grievance Mechanism and respond to all complaints raised.</p>	RML
Impact on community health	To minimise the spread of disease and	Construction and Operation	Undertake AIDS and STD awareness campaigns within	Keep record of	RML

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	particularly STDs.		<p>communities at the Benga loadout point, at Mutarara and Sena and at Chinde. Such campaigns should be undertaken in partnership with local authorities.</p> <p>Project personnel should also undergo periodic health training.</p> <p>Free distribution of condoms must be available for Project personnel</p>	community training provided, including attendee list.	
Increase in social ills (crime, prostitution) on Chinde population	To minimise the spread of social ills.	Construction and Operation	<p>In order to avoid excessive expectations that can fuel the influx of people to Chinde, the project should disseminate realistic information about labour requirements and about the project's recruitment policy.</p> <p>Where possible the Project should support local police in addressing such challenges.</p>		RML
Impact of the project on social infrastructure in Chinde	To minimise the pressure on existing social infrastructure.	Construction and Operation	<p>In order to avoid excessive expectations that can fuel the influx of people to Chinde, the project should disseminate realistic information about labour requirements and about the project's recruiting policy.</p> <p>The project proponent should meet with local authorities to discuss the best ways to support local offer on social services under the projects Social Responsibility programme.</p>		RML

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Potential loss of Property in Benga and in Chinde North bank	To minimise the impact of land take.	Construction	Replacement land should be provided and/or compensation should be paid to owners. Local authorities must be involved in negotiation process. In case of loss of agricultural land, replacement land of same or superior quality must be provided, according to World Bank and IFC recommendations		RML
Impact of the Project on river-centered tourism	To facilitate potential future river-based tourism.	Construction and Operation	Establish a grievance process with the local communities and develop and management plan to address issues		RML
Impact of barging operations on sense of place	To minimise the Project's intrusive impact on sense of place.	Operation	Establish a grievance process with the local communities and develop and management plan to address issues		RML
Impact of the project on direct job creation	To maximise job creation.	Construction and Operation	Priority should be given to the hiring and training of local labour. In order to spread the benefits through riverine communities, a system of quotas can be considered. Develop human resource policies that provide the strategy and procedures for preferential procurement. This human resource policy must also note commitments to not using child or forced labour. Involve local authorities in the recruiting process. Where use local companies and/or subcontractors Ensure that the company has a retrenchment policy. RML must practice non-discrimination. Ensure that employees have a grievance mechanism via which they can raise concerns.	Keep Human Resource records that record training provided and source of labour.	RML

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Impact of skills transfer on local Mozambicans	To maximise skills transfer.	Operation	Develop and implement a skills transfer programme.	Keep Human Resource records that record training provided and source of labour.	RML
Impact of local procurement at Benga, Mutarara and Chinde	To maximise local benefits.	Operation	As far as possible, source goods and services locally. Social responsibility initiatives aimed at benefiting local population in key project locations (e.g. maintenance or repair of small peers or ramps for community use) can be implemented.	Record all social responsibility initiatives.	RML