



Section No: 10

Part: I - Environmental & Social Management Plan (ESMP)

Contractor's Responsibility for Mitigating Adverse Environmental Issues

Potential Environmental Impacts and Risk Level	Key project activities causing the impacts	Mitigation Measures proposed and action to be implemented by the Contractor	Mitigation Cost	Implementation	Compliance Monitoring
1. Public complaints and lack of community support for the project implementation	<ul style="list-style-type: none"> Information Disclosure among Stakeholders 	<ol style="list-style-type: none"> Discussions should be conducted with the project-affected persons. Residents in the area have to be briefed on the project, purpose, design, and outcomes via a documented community consultation session -This should be done immediately once the contractor is mobilized. The contractor should take note of all impacts, and safety hazards that will be of concern to the residents and take necessary measures as stipulated in the ESMP to mitigate them. 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO / GDO

		<ol style="list-style-type: none"> 4) The contractor will maintain a log of any grievances/complaints (suggestion box) and actions are taken to resolve them. 5) A copy of the ESMP should be available at all times at the project supervision office on site. 6) Contractor's Environment and Social Officer to review the construction schedule to manage and monitor restriction issues, and ensure that safeguards related mitigation measures are implemented effectively and on time. 			
<p>2. Exposing and damaging physical and cultural resources</p>	<ul style="list-style-type: none"> • Site preparatory work 	<ol style="list-style-type: none"> 1. Upon discovery of physical cultural materials of Archaeological importance during project implementation work, the following should be carried out; 2. Immediately stop construction activities. 3. With the approval of the resident engineer delineate the discovered site area. 4. Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remains, a night guard should be present until the responsible authority takes over. 5. Through the Resident Engineer, notify the responsible authorities, the Department of Archaeology, and local authorities within 24 hours. 6. Submit a brief chance to find the report, within a specified period, with the date and time of discovery, location of discovery, description of finding, estimated weight and dimension of PCR, and temporary protection implemented. 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO / GDO

		<p>7. Responsible authorities would be in charge of protecting and preserving the site before deciding on the proper procedures to be followed.</p> <p>8. An evaluation of the finding will be performed by the Department of Archaeology who may decide to either remove the Physical Cultural Resources (PCR) deemed to be of significance, further excavate within a specified distance of the discovery point and conserve on-site, and/or extend/reduce the areas demarcated by the contractor, etc. This should ideally take place within about 7 days.</p> <p>9. Construction work could resume only when permission is given from the Department of Archaeology after the decision concerning the safeguard of the heritage is fully executed. This clearance will be obtained in advance due to the prevalence of the old bathing steps though directly not impacted by the project.</p> <p>10. The contractor and all workers will be made aware of the old bathing steps and informed of the precautions that need to be adopted.</p>			
<p>3. Over extraction of natural resources</p>	<ul style="list-style-type: none"> • Material Sourcing 	<p>1) The contractor is required to ensure that sand, aggregates, and other quarry material are sourced from licensed sources or the instructions given by the tank ownership. The contractor is required to maintain the necessary licenses and environmental clearances for all burrow and quarry material they are sourcing –including soil, fine aggregate, and coarse aggregate.</p>	<p>Engineering Cost</p>	<p>Contractor</p>	<p>Provincial DPD Office ESO/ SSO</p>

		<p>2) Sourcing of any material from protected areas and/or designated natural areas is strictly prohibited.</p> <p>3) If the contractor uses a non-commercial borrow/quarry site, the sites should be remediated accordingly once material sourcing has been completed.</p> <p>4) The contractor should submit in writing all the relevant numbers and relevant details of all pre-requisite licenses etc. and report their status accordingly.</p> <p>5) Borrow pits need to finish with slant edges to reduce any possible accident and not pose a risk or humans or animals. Other suitable options for borrow pit rehabilitation will be considered depending on the nature and location of the borrow pits. Since it is an area accessed by wildlife, special attention will be given to the rehabilitation of borrow pits. Refer to Guidance Notes prepared by CSIAP.</p>			
<p>4. Loss of cultivation</p>	<ul style="list-style-type: none"> In case of construction extend beyond the dry season 	<p>1. Plan construction schedule in consultation with the community to complete construction during dry & and Yala season. If required advance cultivation season by requesting the irrigation department to issue water ahead of schedule.</p> <p>2. Provide compensation in case the farmers need to forgo a cultivation season due to construction extending beyond the dry season.</p>	<p>Compensation is to be calculated based on the EM. Compensation is to be paid from the</p>	<p>Contractor & PMU, Social Audit Committee (SAC) / Farmer Organization (FO)</p>	<p>Provincial DPD Office ESO/ SSO / GDO</p>

			Government budget.		
5. Construction and rehabilitation work on a tank during high water levels could provide a serious threat to the safety and functioning of the bund.	<ul style="list-style-type: none"> • De-silting, dredging Work • Removal of vegetation especially those with deep roots • Repair the sluice and tank bund 	<ol style="list-style-type: none"> 1) Carry out rehabilitation work during low water levels in the tank. The timing of rehabilitation works to avoid the rainy season. 2) Vegetation removal is to be carried out carefully and completely to prevent decomposing roots, etc. from being left behind. 3) Proper compaction is to be followed after such removal. 4) Carry out all activities on the tank bund under a site Supervisor's supervision. 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO
6. Impact on existing habitats, trees	<ul style="list-style-type: none"> • Tree removal tank bund renovation /Vehicle movement and machinery movements 	<ol style="list-style-type: none"> 1) To remove the trees, the Engineer together with the environment Officer and Social Safeguard shall be informed in advance to verify and report on the technical justification for the trees that will be required to be removed and the lack of technical alternatives. 2) The following steps are to be followed if trees are identified for removal during the rehabilitation of the tank sluice and supply canal. 3) Identify and document the number of trees that will be affected by girth size & species type. 4) Trees shall be removed from the construction sites before the commencement of construction with 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO

		<p>prior permission from the concerned department or Local Authority (LA).</p> <p>5) Compensatory plantation by way of Re-plantation of at least twice the number of trees cut should be carried out in the project area.</p> <p>6) The contractor shall adhere to the guidelines and recommendations made by the Central Environmental Authority (CEA) if any about the felling of trees and removal of vegetation.</p> <p>7) 7. Removed trees of economic value must be handed over to the State Timber Corporation.</p>			
<p>7. Spreading of Invasive species</p>	<ul style="list-style-type: none"> • Vegetation clearing • Material transportation 	<p>1. Vehicles should be covered during transportation of cleared vegetation to and from the construction site.</p> <p>2. Borrow material to be brought from properly identified borrow pits and quarry sites, the sites should be inspected to ensure that no invasive plant species are being carried with the burrowing material. As much as possible locate borrow sites within a radius of 10Km to the site.</p> <p>3. Washing the vehicles should be conducted periodically to prevent carrying any invasive species. This however should not be conducted within the project site.</p> <p>4. The construction site should be inspected periodically to ensure that no invasive species are established themselves at the site.</p>	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO
<p>8. Air Pollution includes dust generation that can</p>	<ul style="list-style-type: none"> • Setting up of material storage yards, 	<p>1) In the construction method statement, the contractor should designate areas for maintaining material stockpiles, waste stockpiles, labor camps, and vehicle maintenance yards.</p>	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO

<p>affect nearby vegetation and households</p>	<p>and removal of vegetation</p> <ul style="list-style-type: none"> • Transport of construction material and storage on site • Improvements to sluice, spill, and bund • Setting up of material storage yards, and removal of vegetation • Transport of construction material and storage on site 	<ol style="list-style-type: none"> 2) These dust-emitting sources should be located away from human activity and natural drainage paths as much as possible. Park heavy machinery upstream where possible. 3) All heavy equipment and machinery shall be fitted in full compliance with the national and local regulations. 4) Stockpiled soil and sand shall be slightly wetted before loading, particularly in windy conditions. 5) The site should be wetted at least 2/3 times a day during dry weather to keep dust levels low. 6) Vehicles transporting soil, sand, and other construction materials shall be covered. Limitations to the speeds of such vehicles are necessary. Transport through the densely populated area should be avoided. 7) Regular and proper maintenance of construction vehicles and machinery to avoid air emissions. 8) There should be no burning of wastes on-site. 9) Until removal to arranged disposal sites, waste from demolition shall be held stockpiled in a place with minimal interference with local drainage paths and obstruction to traffic, and residents. 10) If there are any locations with human activity (residences, schools, etc) a dust barrier should be used in the immediate vicinity. 			
<p>9. High Noise & Vibration levels can affect nearby</p>	<ul style="list-style-type: none"> • Operation of equipment and machinery. 	<ol style="list-style-type: none"> 1) Working time for noise/vibration generation activities should be restricted and carried out only from 6.00 am to 6.00 pm. 	<p>Engineering Cost</p>	<p>Contractor</p>	<p>Provincial DPD Office ESO/ SSO</p>

<p>structures and wildlife</p>	<ul style="list-style-type: none"> • Material storage and transport 	<p>2) All equipment and machinery should be operated of noise not to exceed 75 dB (during construction) as practical as possible. Regularly maintenance of all construction vehicles and machinery to meet noise control regulations stipulated by the CEA in 1996 (Gazette Extra Ordinary, No 924/12). If the construction activities happen during the nighttime, it is necessary to maintain the noise level below 50 dB Use of mechanically driven saw blades for tree felling will make the noise levels restricted to only a short period.</p> <p>3) Construction equipment and machinery should be maintained in good condition. The contractor shall submit the list of high noise/vibration generating machinery & equipment to the PE for approval.</p>			
<p>10. Blocking of surface drainage paths leads to localized flooding and ponding of water</p>	<ul style="list-style-type: none"> • Site Preparation includes the provision of access roads, • Material/waste piles • De-silting • Repair sluice, spill, and bund 	<p>1) Until transported out to arranged disposal sites, debris and waste from site preparation work and de-silting shall be stockpiled in a place with minimal interference with local drainage paths. The contractor shall identify areas for stockpiling material and waste.</p> <p>2) The stockpiles should be suitably covered to minimize wash-offs to nearby waterways.</p> <p>3) If impacts to surface drainage cannot be avoided leading to ponding of rainwater, the contractor must provide an adequate surface drainage system to safely remove water from the site to the canal to avoid on-site ponding or flooding.</p> <p>4) Proper planning to avoid construction during the rainy season.</p>	<p>Engineering Cost</p>	<p>Contractor</p>	<p>Provincial DPD Office ESO/ SSO</p>

		5) Preventing total blockage of streams/ providing alternative drainage paths during construction.			
11. Soil erosion, sedimentation of nearby water bodies and low lying areas	<ul style="list-style-type: none"> • Construction work including desilting, canal bund strengthening • Removal of topsoil 	<ol style="list-style-type: none"> 1. Soil stockpiles and other construction material should not be placed within the bed or banks of the tanks or canal. 2. Installing and maintaining permanent erosion and 3. sediment control measures such as silt traps to avoid sediment runoff into the tank and nearby waterways. All stockpiles should be covered so as not to be exposed to rain and wind. 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO
12. The de-silted matter may reduce the fertility of the native soil and productivity of the soil.	<ul style="list-style-type: none"> • Disposal of de-silted matter 	<ol style="list-style-type: none"> 1) The silt Disposal Plan should be made available to the contractor's representative well in advance. 2) Such a plan should spell the disposal sites with the quantum of de-silted matter to be disposed of. 3) If the de-silted matter is to be disposed of on-site, the consent of villagers and relevant authorities for disposal of de-silted matter onto their land is mandatory. If the de-silted matter is to be deposited on any agricultural lands, the de-silted matter needs to be tested and analyzed to assure the suitability of the material for agricultural lands. 4) If borrow pits are created close by for the project, desilted mater should be considered in the rehabilitation of these borrow sites. 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO
13. Damage to Flora and wildlife Specially impacts elephants	<ul style="list-style-type: none"> • Vegetation clearing 	<ol style="list-style-type: none"> 1. Speed limits and operating times for the construction vehicles should be imposed. 2. Due consideration should be given to carefully clearing vegetation avoiding the destruction of habitats of fauna. 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO

<p>roaming in the area</p>		<ol style="list-style-type: none"> 3. The removed vegetation matter shall immediately be disposed of at pre-decided disposal sites. 4. The contractor will take reasonable precautions to prevent workmen or any other persons from removing and damaging any flora (plant/vegetation) and fauna (animal) including fishing in any water body and hunting any animal. 5. If any wild animal is found near the construction site at any point in time, the contractor will immediately upon discovery thereof acquaint the Engineer and carry out the Engineer's instructions for dealing with the same. 6. The Engineer will report to the nearby Forest Department /Department of Wild Life Conservation (range office or divisional office) and will take appropriate steps/ measures if required in consultation with the forest officials. 7. It is recommended to do the project work in day time only. 8. The contractor should ensure elephant access to water is not blocked during construction. 9. The workers should be made aware of the conservation status of the area they are working in and any form of hunting or poaching is strictly prohibited. 10. No animals or plants of any nature shall be removed under any circumstances from the project site or surrounding areas without the consent of the Forest Department. 			
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<p>14. Impaired water quality</p>	<ul style="list-style-type: none"> • Spill out of fuels and lubricants • from machinery • Vegetation removal • Repair sluice, spill, and bund 	<ol style="list-style-type: none"> 1) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets 2) Prioritize re-use of excess spoils and materials in the construction works. 3) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; 4) Place storage areas for fuels and lubricants away from any drainage leading to water bodies; 5) Dispose of any wastes generated by construction activities in designated sites. 6) Irrigation works must be planned to be carried out during times of lowest flow. 	<p>Engineering Cost</p>	<p>Contractor</p>	<p>Provincial DPD Office ESO/ SSO</p>
<p>15. Solid Waste Disposal</p>	<ul style="list-style-type: none"> • Site clearing • Waste from labor camps 	<ol style="list-style-type: none"> 1. The contractor shall make a list of all types of waste resulting from the construction activity, and obtain direction from the LA on possible disposal sites for each waste type. 2. Any hazardous type of waste shall be dealt with with special care and instructions from the LA. 3. The contractor shall document all types and quantities of waste generated and removed from the site and the disposal locations. 4. The contractor shall remove waste from the site each day and dispose of the waste in the LA-approved area. All workers shall be educated on waste disposal within the area. Strict guidelines should be given on smoking and disposal of cigarette butts, campfires, etc. 	<p>Engineering Cost</p>	<p>Contractor</p>	<p>Provincial DPD Office ESO/ SSO</p>

<p>16. General (for all types of risks, issues, and disturbances)</p>		<ol style="list-style-type: none"> 1) A GRM will be established to receive and resolve complaints/grievances related to disturbances caused by construction including GBV-related issues. 2) Awareness will be created on the GRM among the community and will publicly display the contact details to report grievances in the community hall, GN office, etc. 3) Awareness will be created among the community on risks/issues including GBV issues due to labor influx arising from construction activities and safety/mitigation measures that will be in place. 	<p>Gender Development Officer/ Social/Environment safeguard officer – DPDO</p>	<p>Gender Dvt Officer/ Social/Environment safeguard officer – DPDO</p>	<p>Gender Dvt Officer/ Social/Environment safeguard officer</p>
<p>17. Labour Influx related issues (e.g. GBV)</p>		<ol style="list-style-type: none"> 1) Local labor will be hired where possible – The contractor will give priority to women when hiring. 2) Worker Code of Conduct will be included as part of the employment contract - this should define workers’ commitment to attitudes and behavior to preventing, combating, and responding to GBV. 3) Contractors will implement robust measures to prevent sexual harassment/GBV including training of the workforce and sanctions for non-compliance (e.g. termination). 	<p>Contractor</p>	<p>Gender Dvt Officer/ Social/Environment safeguard officer – DPDO</p>	<p>Gender Development officer</p>
<p>18. Public/occupational safety hazards - including labor Influx</p>	<ul style="list-style-type: none"> • Site clearing, storage of equipment, material, etc. • Increased traffic of 	<p>Training</p> <ol style="list-style-type: none"> 1) The contractor must ensure that all workers, including managers, are trained on occupational health and public safety risks and mitigation measures for the site, before the commencement of construction. 	<p>Engineering Cost</p>	<p>Contractor</p>	<p>Provincial DPD Office ESO/ SSO / GDO</p>

<p>related issues (e.g. GBV)</p>	<p>heavy vehicles for material transportation</p> <ul style="list-style-type: none"> • Noise and vibration of construction machinery 	<p>Personal Protective Equipment (PPE)</p> <ol style="list-style-type: none"> 1. All workers will be provided with necessary PPEs (basic should include a safety helmet, protective footwear, and high visibility jackets). Any visitors to the worksite also need to be provided with PPE 2. Gloves, ear muffs, goggles, dust masks, safety harnesses, and any other equipment considered necessary should be maintained in stock at the site office. 3. A safety inspection checklist should be prepared to take into consideration what the workers are supposed to be wearing and monitoring. <p>Safety from wildlife</p> <ol style="list-style-type: none"> 1. The contractor will educate his staff about possible attacks from wildlife such as elephants and snakes. Protocols to be adopted should be shared with all workers. 2. Strict instructions and monitoring to be done on worker activities after 6 pm, they should not roam into the wild. Workers should not work in isolation at any time within the project site. 3. PPEs are essential in a land clearing as snakes are present. <p>Site Delineation and Warning Signs</p> <ol style="list-style-type: none"> 1. The entire construction site should be delineated using devices such as cones, lights, tubular markers, orange and white stripes, and barricades to inform oncoming vehicular traffic and pedestrians in the area about work zones. 			
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		<ol style="list-style-type: none">2. Dangerous warning signs should be raised to inform the public of particular dangers and to keep the public away from such hazards.3. Overloading of vehicles with materials should be controlled.4. Construction wastes should be removed as much as possible within 24 hours from the site to ensure public safety.5. The safety inspection checklist must look to see that the delineation devices are used, whether they are appropriately positioned if they are easily identifiable, and whether they are reflective. <p>Equipment safety</p> <ol style="list-style-type: none">1. Work zone workers use tools, equipment, and machinery that could be dangerous if used incorrectly or if the equipment malfunctions. Inspections must be carried out to test the equipment before it is used so that worker safety can be secured. Inspections should look for evidence of wear and tear, frays, missing parts, and mechanical or electrical problems. Also, only such trained persons will have access to such machinery. <p>Emergency Procedures</p> <ol style="list-style-type: none">2. An emergency aid service must be in place at the work site.3. During health and safety training, site staff should be properly briefed as to what to do in the event of an emergency, such as who to notify and where to assemble in an emergency. This information must be			
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		<p>conveyed to employees by the site manager on the first occasion a worker visits the site.</p> <p>4. The contractor shall always maintain a first aid kit on site.</p> <p>Information management</p> <ol style="list-style-type: none"> 1. Develop and establish the contractor’s procedure for receiving, documenting, and addressing complaints from the affected public and nearby communities, including those that relate to GBV. 2. Provide advance notice to local communities by way of information boards or leaflets, during village committees about the schedule of construction activities, interruption to services and access, etc. <p>Managing Labour Influx related issues (e.g. GBV)</p> <ol style="list-style-type: none"> 1. Hire local labor as possible to minimize labor influx – Contractors to give priority to women when hiring. 2. Include Worker Code of Conduct as part of the employment contract – this should define workers’ commitment in attitudes and behavior to preventing, combating, and responding to GBV. 3. Contractors to implement robust measures to prevent sexual harassment/GBV including training of workforce and sanctions for non-compliance (e.g. termination). 			
19. Health & safety of Campsite management	<ul style="list-style-type: none"> • Prevention of any disease spread 	<p>Construction camps</p> <ol style="list-style-type: none"> 1) Construction camps should have adequate sanitation facilities for construction workers to control the transmission of infectious diseases. Sanitation waste should be managed appropriately 	Engineering Cost	Contractor	Provincial DPD Office ESO/ SSO / GDO

		<p>so that it does not lead to any form of pollution of the habitat.</p> <ol style="list-style-type: none">2) Avoid housing workers in camps and provide socio-economic benefits locally by employing local people. If there is no alternative to employing workers from elsewhere,3) Locate accommodation camps away from communities on land acquired from willing sellers. Provide labor camps with adequate sanitation, waste disposal, and health facilities according to labor laws. Clear work camp sites after use and reinstate vegetation.4) Clear work camp sites after use and reinstate vegetation.5) Conduct programs to raise worker awareness of HIV/AIDS.6) Follow health & safety Guidelines to prevent any epidemics, or communicable diseases (COVID guidelines)			
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