

PALUKADAWALA SCHEME

Kurunagala - ID

ABSTRACT

Improvements to Rambawela Anicut Structure & D-10 – 4 Canal Lining in RB/MC of Palukadawala Scheme

IRDCRP

[Course title]

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1. Introduction

The Palukadawala Scheme is a significant agricultural irrigation infrastructure project centered around the Palukadawala Wewa in the Galgamuwa Irrigation Division of the Kurunegala District. Situated in the dry zone within the Mee Oya river basin network, the reservoir serves as an end tank of the Mi Oya Diversion Scheme, having historically undergone key improvements to receive diverted water flows originating from the Mi Oya River via Ambakola Wewa and Atharagalla Wewa. Maintained under major irrigation categorization by the Department of Irrigation (ID), the system plays a vital role in sustaining local farming communities by supporting regional paddy and agricultural cultivation. According to ID data, the scheme encompasses a catchment area of approximately 4,638 acres and an irrigable area spanning roughly 1,764 acres.

The Irrigation Department (ID), Kurunegala range proposes to rehabilitate an anicut namely Rambawela anicut structure and Improvements to Rambawela Anicut Structure & D-10 – 4 Canal Lining in RB/MC of Palukadawala Scheme as illustrate in Table 2.



Figure 1: location of the proposed anicuite



Figure 2: A section of the D-10 canal of the Palukadawela scheme is to be rehabilitated.



Figure 3: A section of the D-10 canal of the Palukadawela scheme is to be rehabilitated.



Figure 4: A section of the D-10 canal of the Palukadawela scheme is to be rehabilitated.



Figure 5: This tree needs to be removed for the canal rehabilitation works



Figure 6:Rambawela Anicut and the canal



Figure 7: The anicute structure to be rehabilitated.



Figure 8: Rambawela Anicut to be rehabilitated.

Table 1: List of trees to be removed for the rehabilitation works

No	Common Name of the tree	Scientific Name	DBH	Coordinates	Justification for Removing	Picture
01	Kumbuk Tree	*Terminalia arjuna*	The Kumbuk tree divides into two stems at DBH. The circumferences of the two stems are 3.0 ft and 3.5 ft.	7.98063 80.23767	The tree is located within the canal lining and requires removal to facilitate the proposed canal rehabilitation works	

Table 2: Proposed works

1. Construction of 192m long Canal lining in 0+000 to 0+192 in Rambawala anicut at Palukadawala scheme in Galgamuwa Division

S.I.No	Description	Unit	Qty
1.1	Clearing Rambawala canal path U/S & D/S at Palukadawala scheme, using PC 120 machine	hr.	16.00
1.2	Stripping topsoil on canal bund to receive new earth and spoil to be deposited as directed. (Cut and lift 0-5ft) haul 0.4km (by manually)	m^3	25.000
1.3	Earth excavation of foundation and spoil to waste as directed by manually.	m^3	68.750
1.4	Earth excavation in borrow and forming bund including watering and compaction by machinery as directed. Roots picking by manual.	m^3	65.000
1.5	Borrow Earth Placing & Compaction in forming canal bund including watering	m^3	23.000
1.6	Furnishing, transporting, cutting, bending Tor steel Reinforcement in Canal lining as directed.	kg	2833.150

2. Construction of 40 m long retaining wall at 0+000 Km To (-0+040 km) in Rambawala Anicut of Palukadawala Scheme

Sl No	Description	Unit	Qty
2.1	Felling trees, cutting branches and uprooting, including cutting 3m long logs and removing outside as directed. (Girth 1.53-1.83m) (by manual)	No	1.000
2.2	Earth excavation in foundation and spoil to waste or use as fill material (by manual)	m^3	34.20
2.3	Mixing, placing, compacting and curing 1.:3:6 (40) cement concrete work excluding formwork. (by machinery)	m^3	60.20
2.4	Backfilling around the structure including watering and compaction (by manual)	m^3	31.50
2.5	Burrow earth placing & compaction around the structure, including watering	m^3	11.50

3. Construction of New box culvert at 0+195 Km in Rambawala at Palukadawala Scheme

Sl No.	Description	Qty	Unit
3.1	Construction of bypass canal path for water issues in the construction period using PC 70 Machine.	10.00	hr

3.2	Demolishing existing pipe culvert (by PC70)	5.00	hr
3.3	Excavation in foundation and spoil to waste or backfill manually	11.80	m^3
3.4	Mixing, placing, compacting & curing 1:3:6(40) Cement Concrete without formwork by machinery.	3.80	m^3
3.5	Mixing, placing, compacting & curing 1:11/2:3(20) Cement Concrete without formwork by machinery.	9.02	m^3
3.6	Backfilling around the structure by machinery.	10.00	m^3
3.7	Burrow earth placing & compaction including watering around the structure by machinery.	4.00	m^3
3.8	Dealing with water during the construction period using 50mm dia. Water pump	20.00	hr

4. Construction of F.T.O Structure at 0+090, 0+095

S.I.	Description	Qty	Unit
4.1	Dealing with water during construction period (Using 50 mm dia water pump)	2.0	hr
4.2	Earth excavation in foundation & spoil to waste or backfill (cut & lift 0-1.5m spread 30m) (by manual)	0.31	m^3
4.3	1:3:6 (40mm) cement concrete without formwork including mixing, placing, compacting & curing (by machinery)	0.09	m^3
4.4	Furnishing, laying and jointing 100 mm dia RCC spun pipes with collars including trenching & backfilling.	2.44	m
4.5	Burrow earth from stock piles and backfilling including watering and compaction haul 30 m (by manual)	0.61	m^3

5. Construction of Under Crossing structure at 0+192 in Rambawala anicut canal at Palukadawala

S.I	Description	Unit	Qty
5.1	Earth excavation in foundation and spoil to waste or use as fill material (by manual)	m^3	0.44

3. Impact Matrix Code

Table 3: Impact Matrix Code

Risk Level	Nature of Assessment/Impact-Based Criteria	Mitigation Based Criteria
High Risk	The subproject will be classified as 'High risk' if: The sub project is expected to cause significant, severe, long-lasting, or permanent damage to the natural, physical, or social environment, cannot be mitigated or; ○ Sub-projects that involve significant conversion or degradation of critical natural habitats such as sensitive ecosystems (e.g., wetlands, primary forests, protected areas). ○ The effects extend beyond the project site, potentially impacting entire regions or even neighboring provinces. ○ The risks of the sub project are novel, complex, or the project involves specialized or hazardous processes that are difficult to manage. ○ Sub projects involving large-scale use of hazardous materials, significant air emissions, or large volumes of untreated industrial waste. ○ Sub projects that significantly alter major hydrological systems, such as large dams or barrages, which can affect river flow, aquatic biodiversity, and downstream comm**Concrete Channel System Cum Agricultural Access Road in Sagamam Lower Basin in Ampara** ○ unities. ○ Sub projects requiring the physical displacement or economic displacement (loss of land, assets, or access to resources) of a large number of people. ○ Sub projects impact on Indigenous Peoples/Vulnerable Groups ○ Sub projects that negatively affect the land, natural resources, culture, or livelihoods of Indigenous Peoples or other significantly vulnerable populations, often requiring Free, Prior, and Informed Consent (FPIC). ○ Major construction activities or infrastructure that poses severe risks to the health, safety, and security of surrounding communities (e.g., large-scale labor influx, major traffic hazards, or structural risks). ○ Destruction or significant damage to nationally or internationally recognized physical cultural resources or heritage sites.	Mitigation necessitates meticulous planning and the implementation of high-tech, costly design solutions. Even with such measures, residual effects are likely to persist.
Substantial Risk	The Subproject will be classified as a substantial risk intervention if it will directly lead to the following; ○ Activities that could lead to invasion or spread of weeds and feral animals or the use of toxic chemicals, intensive use of pesticides.	Mitigation is feasible and effective, requiring only moderate

	○ Activities that could dangerously lead to the exposure of sensitive/critical/vulnerable habitats. ○ Construction of large new infrastructure within or directly adjacent (in buffer zones) to protected areas. ○ Illegal Activities as defined specifically under the Forest Ordinance and Fauna and Flora Protection Ordinance. ○ Subprojects, those involve collection of seeds/farming materials from the wild. ○ Sub-projects that may impose changes in land use that restrict access to resources in legally designated parks or protected areas or other common property resources on which local people may depend for livelihood purposes. In addition, as per the screening the subproject will have a majority of large-scale E&S impacts that will cause irreversible damage to the environment and communities.	design-based and/or operational planning. Residual effects are expected to be nil, minor, or temporary in nature.
Moderate Risk	The subproject will be classified as 'Moderate risk' if: ○ The subproject will have a majority of reversible, small-medium scale E&S impacts, specifically limited to the civil works phase of the project that can be managed by site specific mitigation measures. ○ Require minor land acquisition or restrictions on land use, as a result of which there will be no significant impact on incomes or livelihoods. ○ Subprojects requiring adoption of Abbreviated Resettlement Action Plan (ARAP), Environmental and Social Management Plans (ESMPs) and or E&S Assessment and require further screening in line with the detailed technical designs of the respective subproject.	Mitigation is straightforward and low-cost, and it is expected to fully address the impact. No residual impacts shall remain.
Low Risk	A subproject will be classified as 'Low risk,' if: ○ The Subproject has low-negligible E&S impacts that can be managed via mitigatory codes of practice that will be defined as part of the contractual agreement/memorandums of understanding with project implementing contractors or operators. ○ The Subproject does not require any land acquisition or lead to any impact on incomes or livelihoods. ○ The Sub-project does not require formal E&S assessment, nor preparation of ESMPs and do not have identifiable negative E&S impacts.	No mitigation required or minimal preventive measures sufficient within O & M.

4. Screening

Table 4: Environmental Screening

No	Screening Questions	Yes/No	Scale of Impact	Remarks
1	Will the proposed project involve the **construction of new physical infrastructure or the rehabilitation of existing infrastructure**? Or; Will the project involve any of the following? (Select all that apply) **1.1.** Construction of new physical infrastructure (e.g., buildings, roads, anicuts, canals, sluice gates, pipelines *etc.*). **1.2.** Rehabilitation, expansion, or upgrade of existing physical infrastructure. **1.3.** Will the project activities involve changes to the original design levels of the headworks (Raise the height of tank bund? And/or raise the height or length of existing spill?) that could lead to the inundation of new areas within the catchment? **1.4.** Dredging of the tank bed and the subsequent disposal of dredged materials? **1.5.** If yes, will the dredged material be disposed of on-site or off-site?? **1.6.** Solid waste management:	**1.1. No** **1.2. No** **1.3. No** **1.4. No** **1.5. ---** **1.6. Yes**	**Low Risk**	Improvements to Rambawela Anicut Structure & D-10 – 4 Canal Lining in RB/MC of Palukadawala Scheme has proposed. Solid waste generation will be minimal. The debris will consist of concrete which remove from the anicut, and a small amount of soil/mud that can be spread across the project area, empty cement bags, a few small demolished structures, and general solid waste generated by the workforce.

No	Screening Questions	Yes/No	Scale of Impact	Remarks
2	Will any of the planned improvements necessitate an artificial lowering of the reservoir's water level? * If the water level will be artificially lowered, please specify the anticipated duration and magnitude of the drawdown.	No	--	No reservoir/tank will involve with the proposed civil works. Only a section of a D- canal and rehabilitation and a works are proposed.
3	If the water level will be artificially drawn down, please assess the potential impacts on: **16.1. Surface Water:** Will the draw down alter water flows in nearby streams, rivers, or canals, particularly during the dry season? **16.2. Groundwater:** Will the draw down affect the groundwater table or flow in local wells, especially during the dry season? **16.3. Ecology:** Is there a risk that this activity will affect the ecology of the tank bed or other important wetlands around and canal systems that depend on it? **16.4**. If a risk is identified, please describe the specific potential impacts on the ecosystem (e.g., impact on aquatic life, changes to vegetation, effects on migratory birds and other fauna).	**No**	--	
4	Will the project cause localized flooding and/or poor drainage during construction?	**No**	--	No such impact is expected.
5	Will the construction and operation of the Project involve actions which will cause physical changes in the locality (topography, land use, changes in water bodies, *etc*.)	**No**	**--**	No such an impact is possible.

No	Screening Questions	Yes/No	Scale of Impact	Remarks
6	Will construction of the project cause soil erosion within the site due to steep grade or soil content?	**No**	--	The proposed **canal rehabilitation** work involves earthworks. However, the risk of soil erosion is considered minimal.
7	Will the Project release pollutants or any hazardous, toxic or noxious substances to **7.1.** Air? **7.2**. Nearby surface or groundwater sources? **20.3**. Soil?	**7.1. Yes** **7.2. No** **7.3. No**	Low Risk	The project will generate temporary, localized emissions from the combustion of fossil fuels by construction equipment and project-related vehicles. However, these emissions will not be on a considerable scale. There are no groundwater sources along the project impact zone; no human settlements around the proposed sites. Only the paddy fields and the agri road.
8	Will the proposed activities cause **8.1**. Noise? **8.2**. Vibration? **8.3**. dust emission? **8.4.** Release of light? **8.5**. Heat energy? **8.6**. Electromagnetic radiation?	**8.1.** Yes **8.2**. Yes **8.3**. Yes **8.4.** No **8.5**. No **8.6**. No	Low Risk	Construction vehicle will generate noise and vibration, but impact on the local community will be negligible.
9	Does the proposed location fall within or border any gazetted protected areas (PAs) designated by the Forest Department (FD) or the Department of Wildlife Conservation (DWC), Department of Archaeology or any other?	**No**	--	There are no, forest, wildlife or archeological PAs within the impact zones of the proposed sites. However, the Gatadivula FR is located may be 700 m – 1 km away from the site.
10	Is the proposed project location known to contain any species protected under the Fauna and Flora	**Yes**	--	Elephants are frequent visitors of the paddy fields, and along the canals.

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	Protection Ordinance, or any other sensitive species of fauna or flora? If yes, please provide details on the species and why they are considered sensitive (e.g., critical for breeding, migration routes, *etc.).*"			Otherwise, no other protected/concerned fauna or flora within the project impact zone, since extended amount of paddy fields only.
11	Will the proposed project activities cause negative effects on wildlife habitats, populations, corridors or movement?	**Yes**	**Low**	If project activities are implemented during dusk and dawn, elephants may be disturbed, as they roam the area. Furthermore, the HEC remains a critical red zone where both humans and elephants have lost their lives.
12	Will the proposed project activities cause negative effects on impact on fish migration and navigation?	**No**	--	Such an impact is not expected.
13	Will the proposed project activities will cause increased risk of wildlife poaching and forest fires?	**No**	**---**	No such an impact is expected.
14	Will tree felling be required for the proposed project activities? If yes, please provide an estimate of the number of trees to be felled and their species.	**yes**	**low**	Only one Kumbuk tree needs to be removed.
15	Are there any areas or features of high landscape or scenic value on or around the location which could be affected by construction activity?	**No**		The project site is situated on a flat terrain, primarily characterized by paddy cultivation. no significant impacts on the natural environment or scenic value of the surrounding environment are anticipated or considered likely as a result of the proposed works.
16	Any invasive fauna or flora presents in the tank or surrounding area?	**No**		
17	**Details of headwork structures and reservoir** • Bund Height:			Not applicable for the proposed canal rehabilitation works

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	• Tank storage volume: Year of last rehabilitation:			
18	**Structural Integrity of Bund and Structures** 18.1. Has a structural assessment been done prior to the proposed rehabilitation? 18.2. Is the spill and tail canal large enough and clear of debris, trees, and sediment? 18.3. Are the spillway and the bund protected against erosion? Is there enough height between the normal water level and the top of the dam to handle unexpected rainfall?			Not applicable for the proposed canal rehabilitation works
19	**Potential Losses of a Bund Failure** 19.1. Are there any houses and community buildings within the potential flood path downstream? If yes, please define. • Would a bund failure wash out roads, bridges, culverts? • Are there other tanks downstream that could fail in a cascade effect? Would a bund failure result in significant environmental or severe economic loss (e.g., to farmland, houses, roads, culverts)?			Not applicable for the proposed canal rehabilitation works.

5. Screening Decision & Recommendation

The proposed rehabilitation works along the D – 10 canal and Rambawela anicut structure of the Palukadawala scheme is located within established paddy farming areas. The environmental screening process confirms that the project scope is primarily limited to this downstream irrigation rehabilitation activities. Based on the environmental screening, the findings are categorized and summarized below:

- **Standard Construction Risks:** The project involves standard construction-related occupational health and safety (OHS) risks, which must be managed through standard safety protocols.
- **Welfare Facilities:** Because the project sites are located away from human settlements, shops, and markets, adequate provisions for clean food, safe drinking water, and basic sanitary facilities must be provided for the workforce.
- **Wildlife Hazards:** There is information on HEC in the proposed project areas, with human and elephant deaths are reported, hence, safety measures—must be implemented.
- **Flora Impact:** No aquatic or terrestrial Invasive Alien Species were observed in the proposed projects' impact areas.
- **Fauna Impact:** General wildlife presence in the project area is low/minimal.
- **Agricultural Continuity:** To prevent disruptions to local farming activities, all civil works will be strictly scheduled during the dry season (post-Yala season) or during the fallow period between cultivation cycles.
- **Community Support:** The interest and support of local farmers toward the proposed activities remain high.

Conclusion and Recommendation: The activities proposed are expected to cause only minor, temporary environmental impacts limited to the construction phase. Consequently, the project is recommended for implementation, subject to adherence to the mitigation measures outlined in the Environmental Management Plan (EMP).

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6.: Environmental Management Plan

Table 5: Environmental Management Plan for the Proposed D canal Rehabilitation Works the ID[1] – Kurunagala

No	Potential Environmental Impacts	Key project activities causing the impacts	Mitigation Measures proposed and action to be implemented by the Contractor	Mitigation Cost	Implementation	Compliance Monitoring
1	Occupational Health and Safety: Risks to workers, particularly the potential for snake attacks during material transport, site access, and construction activities. Dehydration for workers.	**During the site access** **Material transport** **During the work**	○ Environment, Occupational Health and Safety Officer (EOHS Officer) shall be employed by the contractor covering the entire work program under this contract. He or she will be responsible for the daily implementation of EMP and SMP[2] (ESMP[3]). ○ Implement measures to prevent heat stroke and dehydration during the hot sunny days. Mandatory provision of **safe, clean drinking water accessible at all times**. It may schedule heavy work for cooler parts of the day (e.g., early morning). **Clean food shall be provided** for the workers at all times.	Engineering cost[5]	Contractor	ID PMU[6]

[1] Irrigation Department
[2] Social Management Plan
[3] Environment and Social Management Plan
[5] Please quote the cost required to implement the necessary mitigation measures.
[6] Project Management Unit - IRDCRP

			○ Possible risks of snake bites, insect attacks. -safety shoes and/or boots shall be provided for all workers, and their use is mandatory on the worksite to protect against snake bites, sharp objects, and other ground hazards. No one shall remain on the site after working hours. ○ First Aid and Emergency Response: In the event of an incident (such as a snake bite, insect attack, or any other), a designated sentinel person trained in first aid and emergency response should be kept ready on site. Immediate Hospitalization Protocol: readily available facilities must be established on site for immediate hospitalization, ensuring rapid access to the necessary medical facilities. ○ Cooking shall not be allowed on the sites. However, if it is essential to make tea/coffee on site, the following procedure shall be followed. Select a location on bare soil, rock, or gravel, away from overhanging branches, dry grass, or fallen leaves. Create a fire buffer zone by clearing all flammable material (leaves, dry grass, twigs, *etc*.) down to the soil in a circle at least 10 feet (3 meters) in diameter around the fire site. Lay a ground cloth or large piece of foil/rock to protect the ground, then spread a layer of mineral soil, sand, or gravel at least 3-5 inches thick			

			on top. Build the fire on this mound. The fire should be kept small to boil the required amount of water. No kerosene, diesel, or petrol is used to ignite the fire. Use only dead and downed wood that can be easily broken by hand. Never cut wood from standing trees (dead or alive). Gather wood from a wide area to minimize impact or bring it from outside. Keep extra firewood and flammable items well away from the fire buffer zone. Keep a bucket of water (or a large pot of water) and a shovel nearby at all times to quickly extinguish any embers or spreading flames. Never leave the fire unattended, even for a moment. A responsible person must be responsible for supervising the fire until it is completely out. Finally, allow the fire to burn down to fine white ash and small embers. Pour lots of water onto the fire, ensuring all embers, coals, and wood fragments are thoroughly soaked. Do NOT use dirt to put out the fire, as it can smother the flames but insulate hot coals, allowing them to reignite later. Use a stick or shovel to stir the ashes and coals to ensure the water reaches the centre and bottom layers. Drown and stir repeatedly until the mixture is cool to the touch. (The ashes and pit must be cool to the touch before leave the site in the evening. Once completely cool, scatter the ashes and any unburned wood widely over the prepared area to further minimize impact. **1.7**. Ensure all equipment and vehicles are inspected, well-maintained, and operated only by certified and licensed operators.			

			1.8. To prevent accidental falls and vehicle-induced collapses, all sites must be clearly demarcated. **Physical Barriers:** Use rigid barricades (e.g., scaffolding pipes or heavy-duty plastic fencing) at a minimum height of **1.1 meters** around the perimeter of the cut, as appropriate. **Warning Signage:** Post high-visibility "Deep Excavation" and "Authorized Personnel Only" signs at 10-meter intervals, as appropriate/if required. **Night Visibility:** All delineation zones must be equipped with solar-powered amber flashing lights to ensure visibility during low-light conditions or heavy rain. **Surcharge Loading:** No heavy machinery, excavated spoil, or construction materials shall be placed within **1.5 meters** (or a distance equal to the depth of the cut) from the edge of the excavation. ○ **Traffic Management and Public Safety** **Site Access and Haulage** For the canal **rehabilitation works, c**onstruction materials will be transported and unloading along the agri road. Safety and the disturbance for the road users appear as a concern, hence, the following protocols must be strictly enforced: ▪ **Driver Briefings:** All drivers must be formally briefed on defensive driving techniques, strict adherence to national speed limits, and local traffic regulations. ▪ **Scheduling:** To minimize congestion and risk, material haulage should be scheduled during			

			off-peak hours (low traffic periods) whenever possible. ▪ **Signage and Awareness**: Clear, high-visibility warning signs (e.g., "Construction in Progress," "Caution: Deep Excavation") must be installed at least 50 meters ahead of the work zone from both approach directions. ▪ **Night Safety and Perimeter Control:** Any excavations remaining open overnight must be securely cordoned off using high-visibility reflective tape, orange safety cones, or barricades equipped with amber flashing lights to ensure visibility in low-light conditions. ○ **Construction Material Management:** ▪ No stockpiling of excavated silt or construction materials on the road surface. Ensure the road remains clear for the passage of vehicles or people at all times. ▪ Identify a suitable area for temporary material storage near the canals where sufficient space is available, subject to the authority and approval of the ID[4] . **1.9. Elephant Sentinel:** A dedicated **elephant sentinel** (or lookout person) with local knowledge of elephant behavior and movement patterns must be hired. This person's sole responsibility is to monitor for approaching elephants and alert the workers.			

[4] Irrigation Department

			Early Warning System: The sentinel should be equipped with a communication device (e.g., a horn, whistle, or mobile phone) to provide a clear and immediate warning to all on-site personnel. **All operations and work schedules will be strictly restricted to the hours between 8:00 AM and 5:00 PM.** **Emergency Supplies:** A supply of **firecrackers** should be obtained from the DWC regional office under the recommendation of the Department of Agricultural Development (DAD). These are to be used only in **emergency situations** to deter elephants and should be deployed by trained personnel. **No Harm Principle:** Under no circumstances shall any elephant be harmed, injured, or killed as a result of project activities. All personnel must be briefed on this non-negotiable principle.			
2	Biological Invasion: The risk of spreading invasive terrestrial and aquatic plant species.	Heavy vehicle/machinery movements cleaning/rehabilitation of canals. Material transportation.	2.1. All tools and machinery (machetes, shovels, vehicle tires, and boots) shall be cleaned before starting to use on the site.	----	Contractor	ID PMU
3.	Accumulation and disposal of solid waste due	Removal of vegetation.	3.1. Disposal should be coordinated with the Department of the ID and the local Farmer Organization (Govi Sanvidhana).	------	Contractor	ID

	to proposed activities.	Solid waste from construction staff.	3.2. Always consider surrounding paddy fields. Ad-hoc dumping in one area can cause rapid pollution in the canal segments. 3.3. Reusable waste, shall be either resold or reused. 3.4. Any hazardous waste must be handled with special care and according to instructions from the local authority. 3.5. The contractor shall document all types and quantities of waste generated, including their removal from the site and their disposal locations, under the supervision of the technical officer and/or Engineer - ID. 3.6. **Food waste must not be discarded** into the surrounding environment under any circumstances. All organic and food-related waste shall be collected in containers and **removed from the site daily**. Strict adherence to this protocol is mandatory. 3.7. There should be no burning of wastes on site. 3.8. Workforce-related solid waste shall be removed from the site on a daily basis. 3.9. Any cleared vegetation shall be removed from the construction sites under the supervision of the ID before the commencement of proposed interventions. No debris shall be burned on the site. 3.10. All excess material should be moved immediately to a pre-identified disposal site away from the road or drainage system.			
4	Air and Noise Pollution: Impacts related	**Operation of equipment**	1.1. Working time for noise/vibration generation activities should be restricted and carried out only from 7.00 am to 5.00 pm.	----	Contractor	ID

	to dust, noise, and vibration.	**and machinery. Material storage and transport.**	1.2. All equipment and machinery should be operated of noise not to exceed 75 dB (during construction) as practically possible. Regular maintenance of all construction vehicles and machinery to meet noise control regulations stipulated by the CEA in 1996 (Gazette Extraordinary, No 924/12). Due to urgent or unavoidable reasons, if the construction activities happen during the nighttime, it is necessary to maintain the noise level below 50 dB.			
5	**Extraction of natural resources**	**Material (soil/earth/gravel) Sourcing**	The proposed activities do not require the sourcing of soil or gravel; however, if any requirement arises; 5.1. Sourcing or purchasing of any material that is sourced from any protected areas and/or designated natural areas, is strictly prohibited. 5.2. Materials cannot be extracted from within the statutory reservations of rivers, streams, or the tanks themselves (usually defined as 60m from a river bank and specific limits from the high-flood level of a tank) unless specifically approved for desilting. 5.3. The contractor is required to ensure that sand, aggregates (if required for this contracts), and other quarry material is sourced from licensed sources or the instructions given by the pond ownership (The Department of Agrarian Services). 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. 5.4. If the contractor uses a non-commercial burrow/quarry site or tank bed, the site should be	-----	Contractor	PID PMU

			remediated accordingly once material sourcing has been completed. Prior approval shall be taken from the Engineer – ID. For new borrow pits, under recommendation and approval of the ID, a **Restoration Plan** must be submitted to the PMU (or else should inform to the PMU for restoration plan). This includes plans for backfilling, slope stabilization, and replanting to prevent the pits from becoming breeding grounds for mosquitoes or safety hazards. 5.5. When there is a requirement, the contractor must submit in writing all relevant numbers and details of prerequisite licenses and their current status to the ID and/or the PMU. 5.6. To prevent accidents, borrow pits must be finished with slanted edges. This will reduce the danger to both humans and animals.			
6	**Exposing and damaging physical and cultural resources**	**Site preparatory work**	Upon discovery of physical cultural materials of Archaeological importance during construction work, the following shall be carried out; 6.1. Immediately stop the performing activity. (With the approval of the resident engineer, delineate the discovered site area. 6.2. 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. 6.3. Through the responsible officer of ID, notify the responsible authorities, the Department of Archaeology, and local authorities within as soon as possible.	Engineering Cost	Contractor	PID PMU

			6.4. Submit a brief chance find report under the supervision of the ID officer, within a specified time period, with date and time of discovery, location of discovery, description of finding, estimated weight and dimension of PCR, and temporary protection implemented. 6.5. Responsible authorities would be in charge of protecting and preserving the site before deciding on the proper procedures to be followed. 6.6. 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. 6.7. Construction work could resume only when permission is given by the Department of Archaeology after the decision concerning the safeguard of the heritage is fully executed.			
7	**Soil erosion, sedimentation of paddy fields.**	**Construction work including, clearing surface vegetation** **Removal of top soil along**	7.1. Installing and maintaining erosion and sediment control measures, such as silt traps, to avoid sediment runoff into the tank and nearby lands and paddy fields, shall be done. 7.2. For any activity related to the construction, the excessive clearing of ground vegetation, or the removal of trees shall not be done. 7.3. Avoid stockpiling disposed material such as removed earth from canal rehabilitation works. Those	Engineering Cost	Contractor	PID

		the canal segments.	shall be reused or disposed of appropriately as guided by the engineer or Technical Officer-ID. 7.4. All exposed soil areas shall be stabilized and re-vegetated as soon as possible on completion of works to prevent potential future erosion.			
8	Water Quality Degradation: water pollution stemming from construction materials and runoff.	**From the machinery, vehicles, and stores. Cement/concrete works.**	8.1. Fuel or lubricants shall not be stored anywhere on the site. 8.2. Store all oil and lubricant containers (including drums, tanks, and static plant equipment like generators) in a larger container. 8.3. Regularly inspect equipment, hoses, and storage containers for leaks, drips, or signs of wear. 8.4. Designate and use a safe area for vehicle and equipment fueling and maintenance that is away from the water body and surrounding forest patches. 8.5. If a contamination happens, use absorbent socks, granular absorbents, or temporary barriers to immediately surround the spill and prevent its spread. 8.6. Clean up the spilled area in an appropriate manner, and dispose of it appropriately under consultation with the Local Government Authority (LA - Pradeshiya Sabha). 8.7. Reporting to the ID and the PMU on the event should be performed.	Engineering Cost	Contractor	ID PMU