Integrated Rurban Development and Climate Resilience Project (IRDCRP).

Ministry of Agriculture, Livestock, Lands and Irrigation



Environmental Screening Report & Environmental Management Plan
For

Rehabilitation of Wali Wewa

Package Number: MoALLI/IRDCRP/PMU/NCB/Works/Weli Wewa /2025/04
IRDCRP Component No: 2.1

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1. General Description

Located in the Trincomalee District, east of Sri Lanka (the Weli Wewa is a minor irrigation tank under the Department of Agrarian Development (DAD), Gomarankadawala division. To solve the issue of irregular and unequal water distribution, the DAD has responded to a request from the local farmers. Their proposed intervention aims to strengthen the tank bund, stabilize the tank's water flow and guarantee that water is delivered equally to all adjacent paddy fields.

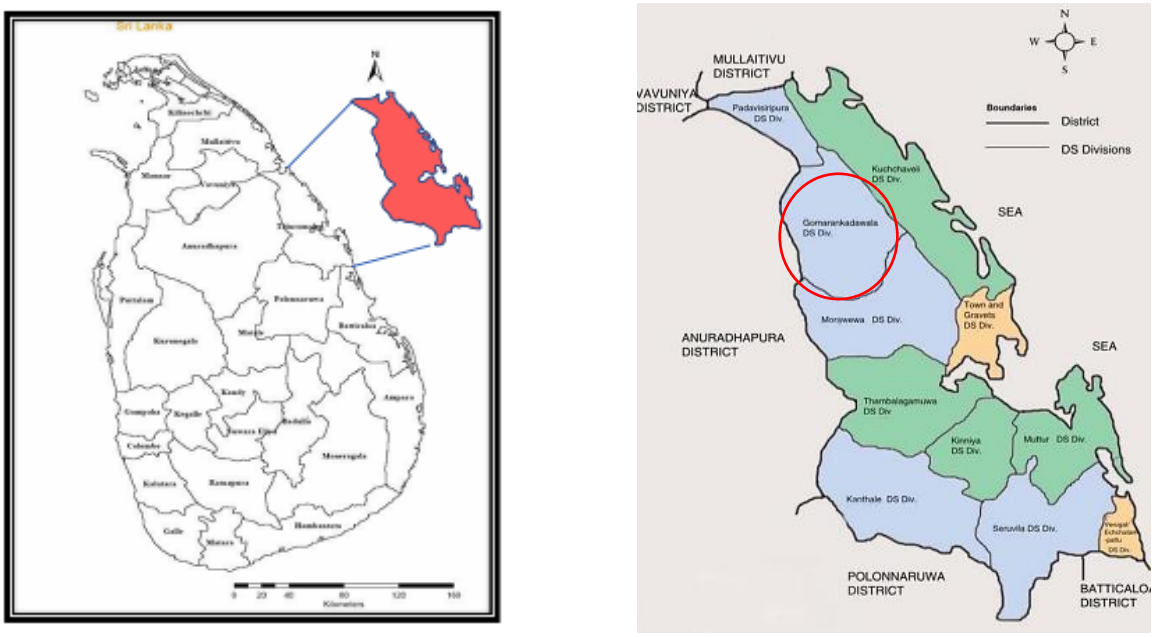


Figure 1: The red colour circle illustrate the location of project area in the Gomaramkadawala Divisional secretariat division of Trincomalee district.

1.1. Physical Environment

Physical environment of the Gomarankadawala area is not differ from the Trincomalee district, features a tropical wet and dry climate under the Koppen climate classification[1]. The area features a dry season from March through June and wet season for the reminder of the year. Average temperatures in Trincomalee range from around 22 ^{0}C (72.50 F) in December and January to approximately 35 ^{0}C (96.44 F) during the warmest months of the year from April through September.[2]

The most widely distributed soil group in the Trincomalee district is alluvial soils, especially in the Mahaweli delta and on the flood plain. Regosol is firmly established in the coastal area and, in particular, the beach area in long, narrow belts. The radish-brown earths are really as abundant. This soil group contains red-brown soil with low humic glay, solodized solonates, and non-calcic brown soils. Topographically, the Trincomalee District consists of undulating terrains and flat to nearly flat areas,

[1] Reference source: http://trincomalee.dist.gov.lk/images/pdfs/Resource-Profile-2018-2019-.pdf (referred on 2025.10.07)
[2] Reference source: http://trincomalee.dist.gov.lk/images/pdfs/Resource-Profile-2018-2019-.pdf (referred on 2025.10.07)

including coastal plains and natural floodplains.[3] The Gomarankadawala area is characterized by nearly flat to undulating terrain. The landscape is predominantly covered by forests and features a dense distribution of small-scale water tanks (minor irrigation tanks) and paddy fields.

1.2. Habitat types

The immediate habitat types within a one-kilometer radius of the project site form a mosaic, encompassing: paddy fields located immediately downstream of the tank bund (Figure 2 and Figure 3), a reserved forest at the periphery of the tank (Figure 4), and patches of shrub forest (Figure 3). These forests, along with the tank ecosystem, provide numerous distinct habitat niches, supporting hundreds of faunal species and offering various vital ecosystem services. The nearest human habitation is situated more than one kilometer away from the site, with residents entering the area exclusively during the active paddy farming season.



Figure 2: Illustrating a portion of the tank bed where it meets the boundary of the reserved forest.



Figure 3: A view of the paddy fields situated directly below the tank bund, bordered by the reserved forest area.

[3] Land Use Plan Trincomalee District, Land Use Policy Planning Department, Ministry of Lands, 2016



Figure 4: Location of the paddy fields adjacent to the tan bund

1.3. Vegetation Structure and fauna

The vegetation on the tank bund is predominantly composed of invasive species (Figurer 10 and Figure 11), with a noticeable absence of mature trees. No endemic, rare, or threatened species of flora were recorded along the access roads or in the immediate vicinity of the tank bund. Direct observation of tree species at the peripheral area of the tank and the spill area was not possible due to restricted access. This specific area is designated as a reserved forest. However, the flora species should be consisting of low country evergreen forest species.



Figure 5: Shrub forest patches adjacent to the tank and paddy fields.



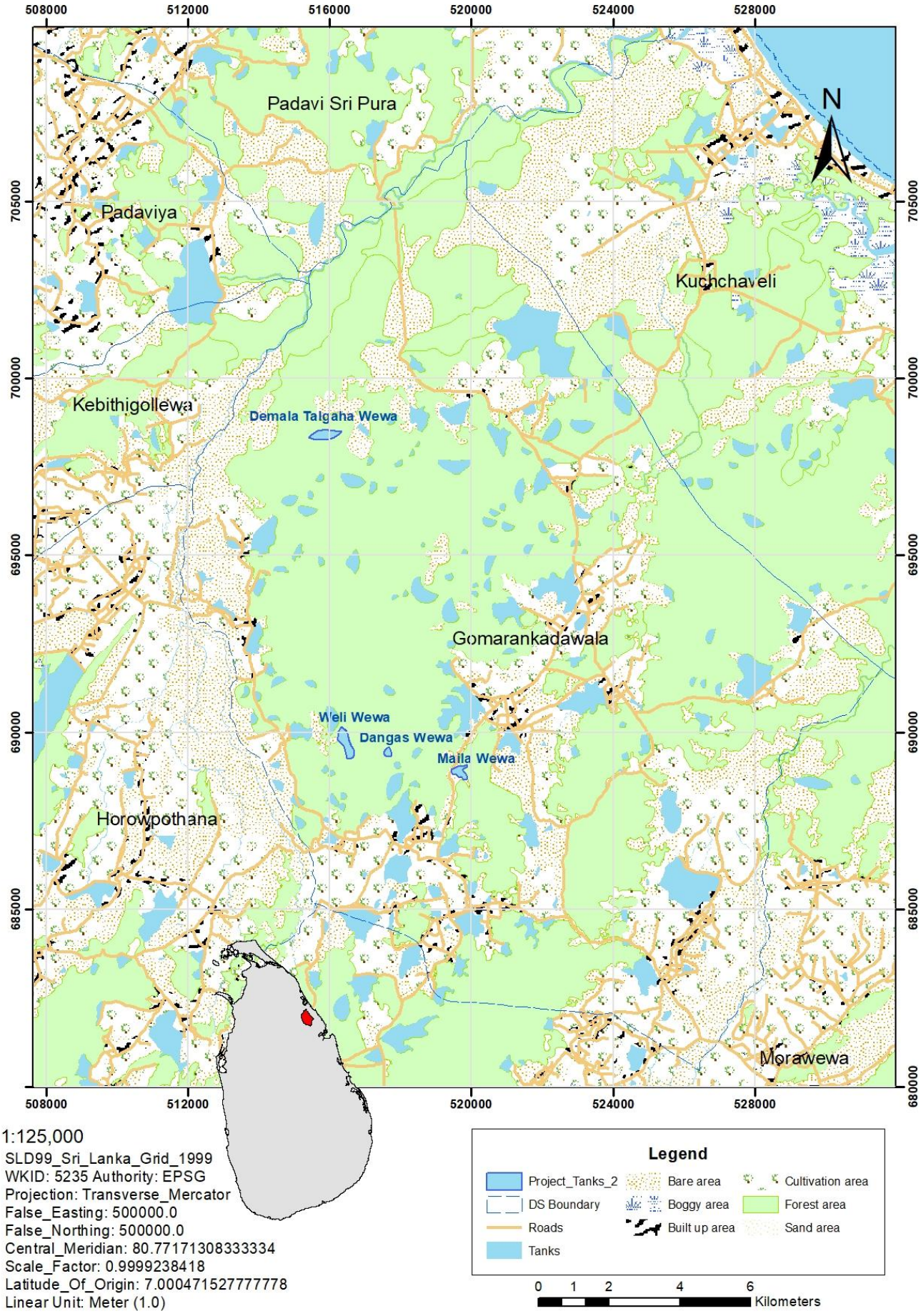
Figure 6: The Pamburugashinna Reserved Forest encircles the tank, serving as its essential catchment area.

The Asian Elephant (*Elephas maximus maximus*) is the most notable faunal species in the area, as reported by local farmers. Despite this presence, the region currently does not experience significant human-elephant conflict.

According to farmer accounts, other species such as the Wild Boar (*Sus scrofa cristatus*); Barking Deer (*Muntiacus muntjak*); Axis Deer (*Axis axis ceylonensis*); Peafowl (*Pavo cristatus*); Black-naped Hare (*Lepus nigricollis*); and Common Palm Civet (*Paradoxurus hermaphroditus*) are present within the adjacent forest patches, contributing substantially to the region's overall biodiversity. Local residents/farmers told that few of them have also observed protected species, including the Sri Lankan Leopard (*Panthera pardus kotiya*) and the Sri Lankan Sloth Bear (*Melursus ursinus inornatus*), around the tank margin bordering the reserved forest. Furthermore, a recent field survey of the project site and its surrounding area revealed a high concentration of diverse spoor on the tank bund and tank bed, which strongly indicates that various animals, including elephants, frequently utilize this area.

1.4. Natural and Geological Hazards

The project area exhibits a low risk profile for natural disasters. The region is not prone to events such as floods, prolonged droughts, or cyclones. Furthermore, the area is not susceptible to geological hazards, including landslides or rock falls.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Horowpothana
Morawewa
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False_Northing: 500000.0
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Latitude_Of_Origin: 7.000471527777778
Linear Unit: Meter (1.0)
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Tanks
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Boggy area
Built up area
Cultivation area
Forest area
Sand area
0 1 2 4 6
Kilometers

2. Brief Description of the Proposed Project Activities

2.1. Headwork Development

2.1.1. Improvements on the tank bund.

The project proposes the rehabilitation of the tank bund. While no breached sections remain, certain segments have become thin, possibly due to erosion.



Figure 7: The current state of the tank bund.

Light jungle clearing along the tank bund reservation and spill area by machinery (0.39 ha)
Furnishing earth from borrow area and forming bund, including benching, spreading, watering and compaction. (8,621 m^3)
Furnishing, placing, watering spreading and compaction of gravel (318 m^3)
Cutting and planting of turf on the slope of bund including watering (1,554 m^2)
Removing of any hills (04 numbers)



Figure 8: Termite hills are formed on the tank bund.



Figure 9: Invasion of *Lantana camara* on a tank bund and downstream area.



Figure 10: *Chromolaena odorata* Infestation along Tank Bund and Downstream

2.1.2. Rehabilitation of 19 m long head wall type sluice

A key focus of the rehabilitation is the repair or replacement of the sluice gates, which are currently damaged and non-functional.

- Demolishing existing damage sluice
- Cut opening the bind and spoil to the dumped at D/S and use after construction for filling same including watering and compaction (250 m^3).
- Earth excavation in foundation (9.6 m^3)
- placing of cement concrete (29.46 m^3)

2.1.3. Construction of headwall sluices for left Bank

- Demolishing existing damaged sluice including removing outside reservation

- Cut opening the bund and spoil to the dumped at D/S and use after construction for filling same including watering and compaction (250 m^3).
- Earth excavation in foundation and part filling (9.6 m^3))
- Placing Cement concrete (29.46.00 m^3)

2.2. Downstream development

Improvement in the spill and spill canal

The height of the spill will **not** be raised; instead, weakened sections of the bund will be rehabilitated, and the spill canal will be cleaned to properly divert the spill water towards the Kambulapatiya Wewa, which is the next tank in the *ellanga* system.

Improvement of Main canal (LBMC)

150 mm thick stripping top soil (234 m^3)

Earth excavation in canal (35 m^3)

Cutting and planting of turf on the slope of bund (717 m^2)

04 numbers of one way farm turnouts RB station (0+010, 0+075,0+325, & 0+375)

One number of Drop structures (0.3 m) at station (0+103)

One number of Drop Structure (0.6 m) at station (0+128)

F.T.O. T2 (end regulator) at station (0+402)

Over crossing at station (0+012)

Drain inlet at station (0+012)

Improvements of main channel RBMC

07 numbers of one way farm turnouts (LB) Stn. (0+050, 0+150, 0+225,0+400,0+450,0+500,&0+550)

02 numbers of drop structures

Drain inlet at station (0+015)

F.T.O. [end regulator at station (0+600)]

The water surface or the tank bed has no invasive plants. However, along the tank bund which is proposed to rehabilitated, contain invasive such as *Lantana camara,* and *Chromolaena odorata.*

Table 1: Environmental Screening Format for Weli Wewa Tank Rehabilitation Works – IRDCRP

No	Screening Question	Yes No	Scale of Impact	Remarks
1.	Will the proposed project involve the **<u>construction of new physical infrastructure or the rehabilitation of existing infrastructure</u>**? Or; Will the project involve any of the following? (Select all that apply) **14.1.** Construction of new physical infrastructure (e.g., buildings, roads, anicuts, canals, sluice gates, pipelines *etc.*). **14.2.** Rehabilitation, expansion, or upgrade of existing physical infrastructure. **14.3.** 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? **14.4.** Dredging of the tank bed and the subsequent disposal of dredged materials? **14.5.** If yes, will the dredged material be disposed of on-site or off-site?? **14.6.** Other (Please specify): (Please attach designs and/or BoQs if possible)	**yes**	Moderate Risk	Both rehabilitation and new works are proposed. **14.1.** As new works; ▪ 04 numbers of one way farm turnouts RB Stn. (0+010, 0+075,0+325, & 0+375) ▪ One number of Drop structures (0.3 m) at Stn. (0+103) ▪ One number of Drop Structure (0.6 m) at stn. (0+128) ▪ F.T.O. T2 (end regulator) at stn. (0+402) ▪ Over crossing at Stn. (0+012) ▪ Drain inlet at Stn. (0+012) ▪ 04 numbers of one way farm turnouts RB Stn. (0+010, 0+075,0+325, & 0+375) ▪ One number of Drop structures (0.3 m) at Stn. (0+103) ▪ One number of Drop Structure (0.6 m) at stn. (0+128) ▪ F.T.O. T2 (end regulator) at stn. (0+402) ▪ Over crossing at Stn. (0+012) ▪ Drain inlet at Stn. (0+012) ▪ Improvements of main channel RBMC ▪ 07 numbers of one way farm turnouts (LB) Stn. (0+050, 0+150, 0+225, 0+400,0+450,0+500,&0+550) ▪ 02 numbers of drop structures ▪ Drain inlet at Stn. (0+015) ▪ F.T.O. [end regulator at Stn. (0+600)] ***All the above are minor structures at the paddy field level, designed to divert and regulate water within the field. **14.2.** As rehabilitation, expansion, or upgrade of existing physical infrastructure ▪ Improvements on the tank bund

				▪ Improvements in the main Channel LBMC ▪ Construction of headwall type sluice **14.3.** NO. (Neither the tank bund height nor the spillway height will be raised). **14.4.** No
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 draw down.	**No**		All construction work is scheduled to be performed during the off-season, specifically **avoiding the Maha cultivation season**. This timing is strategically chosen to coincide with periods when the water level in the tank is at its lowest, thereby minimizing disruption to agricultural activities and facilitating construction.
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**		**All construction works** are planned to be executed during the dry season. Human habitation is situated **more than 1.5 kilometers** away from the tank periphery. During the **Northeast Monsoon season**, the tank spills excess water. This **spilled water** (or **overflow**) is conveyed along the spill canal, which is located at the **periphery of the adjacent forest margin**[4], and subsequently discharges into the **Kimbulpatiyawa Maha Wewa** within the same cascade, situated approximately **800 meters to 1 kilometer**, away from the Weli Wewa. Consequently, **no flood risk is anticipated** from the tank's water discharge under any operational condition. 
5	Will 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**		The proposed civil works involve the rehabilitation of existing infrastructure. These interventions are designed to enhance the water retention capacity and ensure the efficient flow of water to the designated paddy fields. No physical changes in the locality are expected. The new constructions proposed are only minor physical works to regulate and divert water on the paddy field.
6	Will construction works of the project cause soil erosion within the site due to steep grade or soil content?	**yes**	Low risk	There will be earthworks on site for the proposed **Bund works**. However, the potential for **erosion** is negligible because the **grade** is not steep and the **soil content** is not susceptible to it.
7	Will the Project release pollutants or any hazardous, toxic or noxious substances to	**Yes**	Moderate Risk	The project generated pollutants will be the wastewater, various solid waste materials and used oil.

[4] The accompanying figure depicts the spill canal of the Weli Wewa tank, where its periphery adjoins the surrounding forest.

	20.1. air? **20.2**. nearby surface or groundwater sources? **20.3**. Soil?	**20.2. No** **20.3 No**		20.1. Vehicles used in construction, such as excavators and trucks, emit pollutants into the atmosphere from the burnt fossil fuels. These emissions include carbon dioxide, nitrogen oxides, and particulate matter. Additionally, construction activities can generate dust emissions from disturbed soil and the handling of materials like cement, degrading local air quality. 20.2. There are no ground water sources within 1.5 km of area from the project site. The **surface water resources** relevant to the project include the Weli Wewa tank located on-site and the Kimbulapatiya Maha Wewa, situated approximately 800 meters to 1 kilometer away. Due to the pristine environmental conditions including wildlife surrounding the site, No labor camps shall be permitted on the project site and there must be strict intervention of solid waste, including food wastes. 20.3. Accidental spills of fuel, lubricants, and cement on the ground may pose a threat to soil quality.
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	Moderate Risk	**21.1**. The proposed construction activities will introduce unwanted noise originating from vehicles, heavy equipment operation, and human labour. However, the noise impacts are not anticipated to be significant with respect to human receptors (there are no residential units located within a 1.5-kilometer radius of the project site). The primary environmental concern regarding construction noise is the potential adverse impact on local wildlife. Detailed mitigation measures will be required to minimize sound disturbance to fauna. Not only larger mammals, the site was abundant of butterflies especially on the forest side.

				 The tank bund rehabilitation works may generate some vibration impacts. However, these are not expected to affect humans, as there are no residential units nearby. The wildlife would be the potential victims of this disturbance, but only for a limited period
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?	**Yes**	Substantial Risk	The tank shares a boundary with the Pmburugashinna forest reserve along three of its perimeter segments.
10	Is the proposed project location known to contain any species protected under the Fauna and Flora 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.).*"	**Yes**	Substantial Risk	During the non-cultivation season for paddy, elephants move seasonally toward the village by traversing the paddy fields. These fields are located directly below the tank bund, with the village situated beyond them. When the paddy is being farmed, the fields function as a natural and human-enforced barrier, as farmers actively protect their crops. This activity restricts the elephants' movement. Conversely, during the off-cultivation season, elephants cross the fields freely. Importantly, HEC is not currently considered a critical issue in this specific area.

				Local farmer accounts indicate sightings of bears. Additionally, a few individuals claimed rare sightings of the Sri Lanka leopard around the tank periphery. Three of the species mentioned above are protected species under the FFPO.
11	Will the proposed project activities will cause negative effects on wildlife habitats, populations, corridors or movement?	yes	Substantial Risk	Based on the preliminary environmental screening, direct or irreversible negative impacts on wildlife populations and habitats are not anticipated from the proposed project. The rehabilitation activities are focused on pre-existing infrastructure, and no significant habitat fragmentation or destruction is foreseen. However, a potential for human-wildlife interaction has been identified. Wildlife movements, particularly of elephants, have been observed along the existing tank bund and paddy field area.
12	Will the proposed project activities cause negative effects on impact on fish migration and navigation?	**No**		Such an impact is not expected. The tank is not utilized for fisheries. While indigenous species likely exist, their distribution and transfer throughout the *ellanga* system are primarily driven by spill over events during the Northeast Monsoon.
13	Will the proposed project activities will cause increased risk of wildlife poaching and forest fires?	**yes**	Substantial Risk	Given the presence of wildlife species like the Barking Deer, Toque Macaque, Gray Langur, and rabbits in the tank area, there is a potential for wildlife poaching. This risk is considered a potential environmental impact that should be addressed in the ESMP.
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.	**No**		
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, situated on a relatively flat terrain, is encompassed by a reserved forest and other types of forest patces, isolated trees, birds and butterflies. Consequently, the scenic and aesthetic value both on and around the site is considered high.

16	Any invasive fauna or flora presents in the tank or surrounding area?	**Yes**	Substantial Risk	No aquatic invasive plants were observed in the tank. Terrestrial invasive *Lantana camara* and *Chromolaena odorata* present along the tank bund and immediate downstream.
17	Present of archeological monuments or archeological protected areas within the project impact zone?	**No**		No official records were found on archaeologically protected areas within the project's impact zone and no such monuments were observed during site inspection, nor was any information concerning them received from the local sources.

Table 2: Impact Matrix Code

Risk Level	Nature of Assessment/Impact Based Ciretereia	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 damages on 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 communities. ○ 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. ○ 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.	Mitigation is feasible and effective, requiring only moderate design-based and/or operational planning. Residual effects are expected to be nil,

	○ 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.	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.

3. Screening Decision and Recommendation

The project site is situated within an extremely sensitive ecological area characterized by the presence of elephants, several other protected fauna species, adjacent forest patches, and the reserved forest surrounding the tank periphery.

Despite this sensitivity, the proposed activities are not anticipated to cause irreversible or significant adverse environmental impacts during either the construction or operational phases. The limited environmental impacts associated with this project are primarily confined to the construction phase and are considered temporary.

These temporary Potential Construction-Phase Impacts:

- Occupational Health and Safety: Risks to workers, particularly the potential for wildlife attacks during material transport and construction activities.
- Wildlife Disturbance: Disturbances to local fauna, including the potential for poaching.
- Biological Invasion: The risk of spreading invasive terrestrial plant species.
- Accumulation of solid waste
- Air and Noise Pollution: Impacts related to dust, noise, and vibration.
- Water Quality Degradation: Tank water pollution stemming from construction materials and runoff.
- Extraction of material from the forest reserve around or from any other protected area.
- Soil erosion.

Mitigation Strategy:

To effectively address these concerns, an Environmental Management Plan (EMP) is proposed. This plan will detail appropriate mitigation measures and establish a monitoring framework to ensure their implementation. Regular environmental monitoring throughout the project's construction phase is essential to avoid or reduce these potential impacts.

Name: Maheeni Samarakoon Singappuli
Title: Senior Environmental Specialist

Signature: 
Date:

4. Environmental Management Plan

Table 3: Environmental Management Plan for proposed works at Waliwewa Tank

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 wildlife attacks during material transport, site access and construction activities.	**During the site access** **Material transport** **During the work**	Given that the work area is in a highly sensitive zone, the following mitigatory measures shall be implemented to ensure the safety of wildlife as well as project workers. 1.1. The Department of Wildlife Conservation (DWC) as well as the regional office of the forest department (FD) shall be consulted before starting any work. This includes sharing the project's scope, location, and timeline. The work schedule must be planned and strictly followed based on the DWC's and FD's instructions. 1.2. Work activities are restricted to between **9:00 AM and 4:00 PM** to avoid the peak hours of elephant and other wildlife movement, which typically occur at dusk and dawn. 1.3. Elephant Sentinel: A dedicated elephant sentinel (or lookout person) with local knowledge of elephant behaviour and movement patterns must be hired. This person's sole responsibility is to monitor for approaching elephants and alert the workers. 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. 1.4. A supply of firecrackers should be obtained from the DWC regional office under the recommendation of the Department of Agricultural	Engineering cost	Contractor DAD	PMU

			Development (DAD). These are to be used only in **emergency situations** to deter elephants and should be deployed by trained personnel. 1.5. Under no circumstances shall any elephant or any other faunal species be harmed, injured, or killed as a result of project activities. All personnel must be briefed on this non-negotiable principle. 1.6. All food waste and other attractants must not be stored on the site. Any food waste regularly removed from the site to prevent elephants from being drawn to the area. 1.7. No one shall access to the adjacent forest area around the tank. Harming, collecting, poaching or shooting any species of wildlife is strictly prohibited. 1.8. No any mode of fire, cigarettes shall be taken into the worksite without permission of the DAD officials. 1.9. Cooking shall not be allowed on the site. However, Cooking shall not be allowed on the site for the workforce since forest is nearby. However, if it is essential to make tea/coffee on site the following procedure shall be followed. o Select a location on bare soil, rock, or gravel, away from overhanging branches, dry grass, or fallen leaves. o 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 require amount of water. o No kerosene, diesel or petrol is use 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 from outside. Keep extra firewood and flammable items well away from the fire buffer zone. o 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. o 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 center 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. 1.10. No one shall remain on the site after working hours. 1.11. No worker shall allow walking beyond the tank bund or beyond the spill where the forest or forest patches remain. 1.12. Only group transport shall be provided to the entire workforce. 1.13. Speed limits[5] and operating times mentioned above for the construction/material transport vehicles should be imposed. 1.14. Appoint a qualified full-time a designated, trained personnel responsible for daily OHS supervision, record-keeping, and			

[5] 10 km per hour along the village roads and tank access road.

			enforcement. 1.15. Given the dry zone's history with specific health issues (e.g., Chronic Kidney Disease of Unknown Etiology - CKDu), ensure that drinking water sources are safe and certified as potable, separate from the tank water, and not from potentially contaminated local wells. 1.16. Clean food shall be provided for the workers at all the time. 1.17. Implement measures to prevent heat stroke and dehydration during the hot sunny days. • Mandatory provision of safe, clean drinking water (potable water) accessible at all times as mentioned above. • Schedule heavy work for cooler parts of the day (e.g., early morning). 1.18. Establishing labour quarters on the site is risky as frequent appearance of elephants. If the contractor hires a premise as labour quarters, the location shall be selected by avoiding elephant movement pathways and roaming areas. Provide adequate, clean, and separate sanitary facilities (toilets) and washing stations for workers. 1.20. Possible risks of snake bites, insect attacks, and other wild animal encounters present in the adjacent forest environment. 1.21. Safety shoes and/or boots shall be provided for all workers and their use are mandatory on the worksite to protect against bites, sharp objects, and other ground hazards. 1.22. First Aid and Emergency Response: In the event of an incident (such as a snake bite, insect attack or any other wildlife attack), a designated sentinel person trained in first aid and emergency response should be kept ready on site. 1.23. Immediate Hospitalization Protocol: Clear protocols must be established for immediate hospitalization and transport, ensuring rapid access to the necessary medical facilities. 1.24. Ensure all heavy equipment (excavators, bulldozers, tipper trucks) and vehicles are inspected, well-maintained, and operated only by certified and licensed operators.			

			Further to above, strict adherence to all applicable Sri Lankan OHS regulations and laws shall be applied under this contract.			
2	Wildlife Disturbance: Disturbances to local fauna, including the potential for poaching.	**Site clearing** **Earth works** **Construction works** **Site access** **Material transport**	2.1. The contractor will take reasonable precaution to prevent workmen or any other persons from removing and damaging any flora and fauna including fishing in the tank and hunting of any animal. 2.2. No one will have access to the forest reserve or adjacent forest patches even in the spill area or along the canal without permission from the supervisor of the contractor. 2.3. The contractor should ensure animals' access to water is not blocked during construction. 2.4. Due consideration should be given to carefully clearing of vegetation avoiding destruction of habitats of fauna. Even nests of birds'. 2.5. Termite hills with live colonies may be relocated as appropriate without destroying them.	Engineering cost	Contractor	PMU DAD
3	Biological Invasion: The risk of spreading invasive terrestrial plant species.	Rehabilitation of tank bund, cleaning/rehabilitation of spill canal, Material transportation	*Lantana camara,* and *Chromolaena odorata* infestation occurs along the tank bund, immediate downstream areas and adjacent to the spill area. 3.1. Physically remove plants when they are not at the fruiting (*Lantana*) or seeding (*Chromolaena*). 3.2. If fruits/seeds are present, carefully bag and remove all reproductive material first before cutting the main plant. Dispose of this material by deep burial or by burning, on the site. DO not transport. 3.3. Begin removal works from the edges of the infestation inwards. (To create a buffer zone). 3.4. Physical removal shall be done by cutting the stem as close to the ground as possible and immediately apply a registered, herbicide at the correct concentration directly to the freshly cut surfaces to kill the root	Engineering cost	Contractor	PMU DAD

			system, preventing prolific re-sprouting. Or else uproot the root system and immediately put on a bag for burning to the ash. Observe for few weeks for new shoots/plants and remove them following the same procedure. 3.5. Thoroughly clean all tools and machinery (machetes, shovels, vehicle tires, and boots) before leaving the site. 3.6. Borrow material for tank bund rehabilitation works to be brought from properly identified borrow pits and quarry sites, the sites should be inspected in order to ensure that no any other form of invasive plant species are being carried with the burrow material. As much as possible locate burrow sites within a radius of 10Km to the site 3.7. Washing the vehicles should be conducted periodically to prevent carrying any invasive species 3.8. The site should be inspected periodically to ensure that no new invasive species are established at the site.			
4	Accumulation of solid waste	Setting up of material storage yards. Stock piling of soil, dredged materials. Removal of vegetation. Solid waste from construction staff. Transport of	4.1. No labour camps shall be allowed under this contract on or around the worksite. 4.2. The contractor shall create a list of all types of waste generated from the construction activities and obtain directions from the Local Government Authority (LA - Pradeshiya Sabha), regarding suitable disposal sites for each waste type. 4.3. Reusable waste, such as cement bags, shall be either resold or reused. 4.4. Any hazardous waste[6] must be handled with special care and according to instructions from the local authority.	Engineering Cost	Contractor	DAD PMU

[6] Such wastes are not expected under this contract.

		construction material.	4.5. 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 TO[7] - DAD officer. 4.6. Food waste shall not be discarded into the surrounding environment, as this may attract wildlife and must be removed from the site daily. 4.7. There should be no burning of wastes on site. 4.8. Workforce related solid waste shall be removed from the site on daily basis. 4.9. Any cleared vegetation that needs to be removed to facilitate proposed spill and spill canal works shall be removed from the construction sites under the supervision of the DAD before the commencement of proposed interventions in the spill area. Any debris shall not be burnet on the site.			
5	Air and Noise Pollution: Impacts related to dust, noise, and vibration.	**Operation of equipment and machinery. Material storage and transport.**	5.1. Working time for noise/vibration generation activities should be restricted and carried out only from 9.00 am to 4.00 pm. 5.2. 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). Due to urgent or unavoidable reason, if the construction activities happen during the night time, it is necessary to maintain the noise level at below 50 dB. 5.3. Construction equipment and machinery should be maintained in good condition. Contractor shall submit the list of high noise/vibration generating machinery & equipment to the PE for approval.			

[7] Technical Offcier

6	Water Quality Degradation: Tank water pollution stemming from construction materials and runoff.	**From the machinery, vehicles, and stores. Cement/concreat works.**	6.1. Fuel or lubricants shall not be store anywhere on the site. 6.2. Store all oil and lubricant containers (including drums, tanks, and static plant equipment like generators) in a larger container. 6.3. Regularly inspect equipment, hoses, and storage containers for leaks, drips, or signs of wear. 6.4. Designate and use a safe area for vehicle and equipment fuelling and maintenance that is away from the water body and surrounding forest patches. 6.5. If a contamination happens, use absorbent socks, granular absorbents, or temporary barriers to immediately surround the spill and prevent its spread. 6.6. Clean-up the spilled area in an appropriate manner, and dispose appropriately under consultation of the the Local Government Authority (LA - Pradeshiya Sabha),. 6.7. Reporting to the DAD and the PMU on the event should be performed.	Engineering Cost	Contractor	DAD PMU
7	**Extraction of natural resources**	**Material (soil/earth/gravel) Sourcing**	7.1. Sourcing of sand/soil or gravel from the reserve forest area is strictly prohibited. In case such a requirement is arises, the DAD shall be sources the relevant clearance/approval from the Forest Department. 7.2. Sourcing or purchasing of any material which are sourced from any other protected areas and/or designated natural areas are strictly prohibited. 7.3. The contractor is required to ensure that sand, aggregates and other quarry material is sourced[8] from licensed sources or the instructions	Engineering Cost	Contractor	DAD

[8] The BOQ submitted by the DAD includes a cost for soil.

			given by the tank 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. 7.4. If the contractor uses a non-commercial burrow/quarry sites, the sites should be remediated accordingly once material sourcing has been completed. Prior approval shall be taken from the Engineer – DAD. 7.5. 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 DAD[9] and/or the PMU[10]. 7.6.To prevent accidents, borrow pits must be finished with slanted edges. This will reduce the danger to both humans and animals.			
8.	**Exposing and damaging of 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; 8.1. Immediately stop the performing activity. (With the approval of the resident engineer delineate the discovered site area). 8.2. 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. 8.3. Through the responsible officer of DAD, notify the responsible authorities, the Department of Archaeology and local authorities within as soon as possible. 8.4. Submit a brief chance find report under supervision of DAD officer, within a specified time period, with date and time of discovery, location	Engineering Cost	Contractor	DAD PMU

[9] Department of Agrarian Development
[10] Project Management Unit

			of discovery, description of finding, estimated weight and dimension of PCR and temporary protection implemented. 8.5. Responsible authorities would be in charge of protecting and preserving the site before deciding on the proper procedures to be followed. 8.6. 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. 8.7. 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.			
9	**Soil erosion, sedimentation of nearby water bodies, and paddy fields.**	**Construction work including, Removal of top soil, rehabilitation of the tank bund, cleaning of spill canal, rehabilitation of main canals.**	9.1. Soil stockpiles and other construction material shall not be placed within the tank bed or on the tank bund, canals or access road area. Soil and gravel shall be taken to the site as required without storing/stockpiling larger volumes. 9.2. Installing and maintaining erosion and sediment control measures such as silt traps to avoid sediment runoff into tank and nearby lands and paddy fields. 9.3. For any activity related to the construction, excessive clearing of ground vegetation, removal of trees shall not be done. 9.4. Avoid stockpiling disposed material such as removed earth from the spill area and spill canal, tank bund and canal rehabilitation works. Those shall be reused or disposed of appropriately as guided by the TO-DAD. 9.5. All exposed soil areas shall be stabilized and re-vegetated as soon as	Engineering Cost	Contractor	DAD

			possible on completion of works to prevent potential future erosion.			