Integrated Rurban Development and Climate Resilience Project (IRDCRP).

Ministry of Agriculture, Livestock, Lands and Irrigation



Environmental Screening Report & Environmental Management Plan
For
Rehabilitation of Panagama Tank downstream structures
Package Number: MoALLI/IRDCRP/PMU/NCB/Works/Hinuk Wewa(R)/2025/02

IRDCRP Component No: 2.1

September, 2025

Contents

Executive Summary 4
1. Introduction to the Intergraded Rurban Development and Climate Resilience Project (IRDCRP). 5
1.1. Administrative setup: 5
1.2. Project Proponent: 5
1.3. Estimated cost 6
1.4. Contract Package Number 6
2. General Introduction 7
2.1. Physical Environment 7
2.2. Habitat Types 7
2.3. Structure of the vegetation 7
2.4. Fauna 9
3. Brief Description about the Proposed Activities 11
3.1. Headwork Development 11
3.1.1. Improvements on the tank bund 11
3.1.2. Construction of two (02) numbers of headwall sluices 11
3.1.3. Construction of natural type spill 11
3.1.4. Clearing the tank bed 11
3.2. Downstream Development 12
3.2.1. Rehabilitation of Irrigation canals LB and Main canal 12
3.2.2. Construction of canal concrete lining, LB, RB & main canal 12
4. Environmental Screening 13
5. Screening Decision and Recommendation: 23
6. Environmental Management Plan – Hinuk Wewa 24

List of Figures

Figure 1: Land use map around the Hinuk wewa 8
Figure 2: Tank bed proposed to desilt. The yellow circle indicates the forest reserve. 9
Figure 3: The damaged sluice is proposed to be demolished. 9
Figure 4: The tank's bund is degraded and has been encroached upon by larger trees and scrub forest. 10
Figure 5: LB, Main and RB canal that proposed to rehabilitate. 21

List of Table

Table 1: Environmental Screening for Tank Rehabilitation Works – IRDCRP 13
Table 2: Impact Matrix Code 22
Table 3: Environmental Management Plan for the proposed activities under Hinuk wewa Rehabilitation works. 24

Executive Summary

The **Hinuk Wewa** is a minor irrigation tank located in the **Aliyawatuna Wewa GN** of the **Thambuththa DS division**, within the **Kurunegala District**. It operates under the **Thambuththa agrarian division** and serves as a primary water source for paddy cultivation in the GN division.

Due to the structural instability of several key hydraulic components of the tank, a rehabilitation project has been initiated at the request of the farmer organization. The main objective of the project is to restore and improve the tank's functionality and water management and delivery capabilities.

The proposed works include rehabilitation of the tank bund, sluice gate, and canal system and clearing of the tank bed. These rehabilitation activities will involve earthworks, which may lead to environmental and social impacts, including soil erosion, dust emissions, noise, and vibration. However, there are no residential structures within approximatley 800 - 1000 meter radius of the project site; hence, residents of the village will not become direct receivers of these impacts.

Most importantly, the project's proximity to the Hinuk Wewa forest reserve[1], which is under the purview of the Forest Department, raises concerns about potential impacts on local wildlife. Although the area is not prone to high human-elephant conflict, the project's activities could still affect the animals within the adjacent forests. Given the project's location adjacent to a forest reserve, it is imperative to obtain all necessary statutory clearances from relevant authorities, including the Forest Department.

[1] The Forest Department has not yet confirmed the name of the reserved forest and not received the clearance yet.

1. Introduction to the Intergraded Rurban Development and Climate Resilience Project (IRDCRP).

The IRDCRP is executed by the Ministry of Agriculture, Livestock, Land, and Irrigation and implemented by the Department of Agriculture, the Department of Agrarian Development, the Department of Irrigation, the Mahaweli Development Authority, and Provincial Irrigation Departments. The project's development objective is to increase productivity, market access, and climate resilience of agri-food producers in selected areas. The project's main beneficiaries are small- and medium–scale producers and households engaged in the agri-food sector residing in the project areas. The project will also benefit agribusiness firms through support for improved market linkages.

The project has five components on promotion of climate-smart production, value addition, and inclusive access to markets, , integrated management of natural resources for climate resilience (sub components for improving cascade management and on farm water, irrigation and water resources management, boosting climate smart agriculture technologies and practices); Strengthening the enabling environment for sectorial growth, (sub components for better quality and availability of agriculture data, quality infrastructure improvements, enhancing provision of agricultural insurance), Project management, monitoring and learning, contingent emergency response component). The project development objective is to increase productivity, market access, and climate resilience of agri-food producers in selected areas.

The screening for environment-related concerns and management of adverse environmental impacts for the proposed civil works at the Hinuk Wewa tank will be conducted in compliance with the World Bank's Environmental and Social Framework (ESF) and Government of Sri Lanka (GoSL) regulations. The Hinuk Wewa tank is crucial for the livelihoods of resident families in the Aliyavatunu Wewa Grama Niladhari division (GN) and the Thambuththa divisional secretariat division, as it provides water for paddy cultivation and other agricultural activities. The tank and its environs also serve as a vital source of water and a habitat for local wildlife, especially those who reside in the Hinuk Wewa forest reserve[2].

1.1. Administrative setup:

The Hinuk wewa locate in the Kurunagala district of North-western province. The Divisional Secretariat Division is Thambuththa and the GN Division: Aliyavatuna wewa. The tank is unctioned under the purview of Thambuththa Agrarian Service Center.

1.2. Project Proponent:

Department of Agrarian Development, Thambuththa Agrarian Service Center

[2] The name of the reserved forest is to be confirmed.

1.3. Estimated cost

Rs. 22,578,500.00[3]

1.4. Contract Package Number

MoALLI/IRDCRP/PMU/NCB/Works/Hinuk Wewa/(R)/2025/02

[3] As per the initial BoQ submitted by the DAD

2. General Introduction

2.1. Physical Environment

The proposed project area is located in the dry zone and is approximately 100 meters above mean sea level. The region's mean annual rainfall ranges from 1,500 mm to 2,000 mm, with a drought period of about five months. The rainy season, known as the *Maha* season, generally lasts from October to January. Inter-monsoonal rains also occur in March. The heaviest rainfall is typically observed in November and December.

The average temperatures in the project area range from 30°C to 32°C. This location is part of the Dry Zone of Sri Lanka and is characterized by a flat geomorphological terrain. The dominant soil types are Reddish-Brown Earth and Low Humic Clay. From May to early September, the weather is typically dry and hot.

2.2. Habitat Types

Within a one-kilometer radius of the project site, the habitat is primarily comprised of paddy fields located directly below the tank bund. The Hinuk Wewa Forest Reserve is situated at the periphery/HFL[4] of the water retention area. This forest reserve serves as the catchment for the tank. Home gardens and natural scrub forest patches can be found on the village side. The tank's access roads run through the Aliyavatuna Wewa village. There are no natural or degraded forests remaining in the downstream areas.

2.3. Structure of the vegetation

The project's impact zone, which includes the tank bund, downstream area, and access roads, is characterized by diverse vegetation. Along the tank bund, the primary trees are Kohomba trees (Neem), with a few Nuga trees (Banyan) also present. The access roads feature scattered shrubs.

[4] High flood level

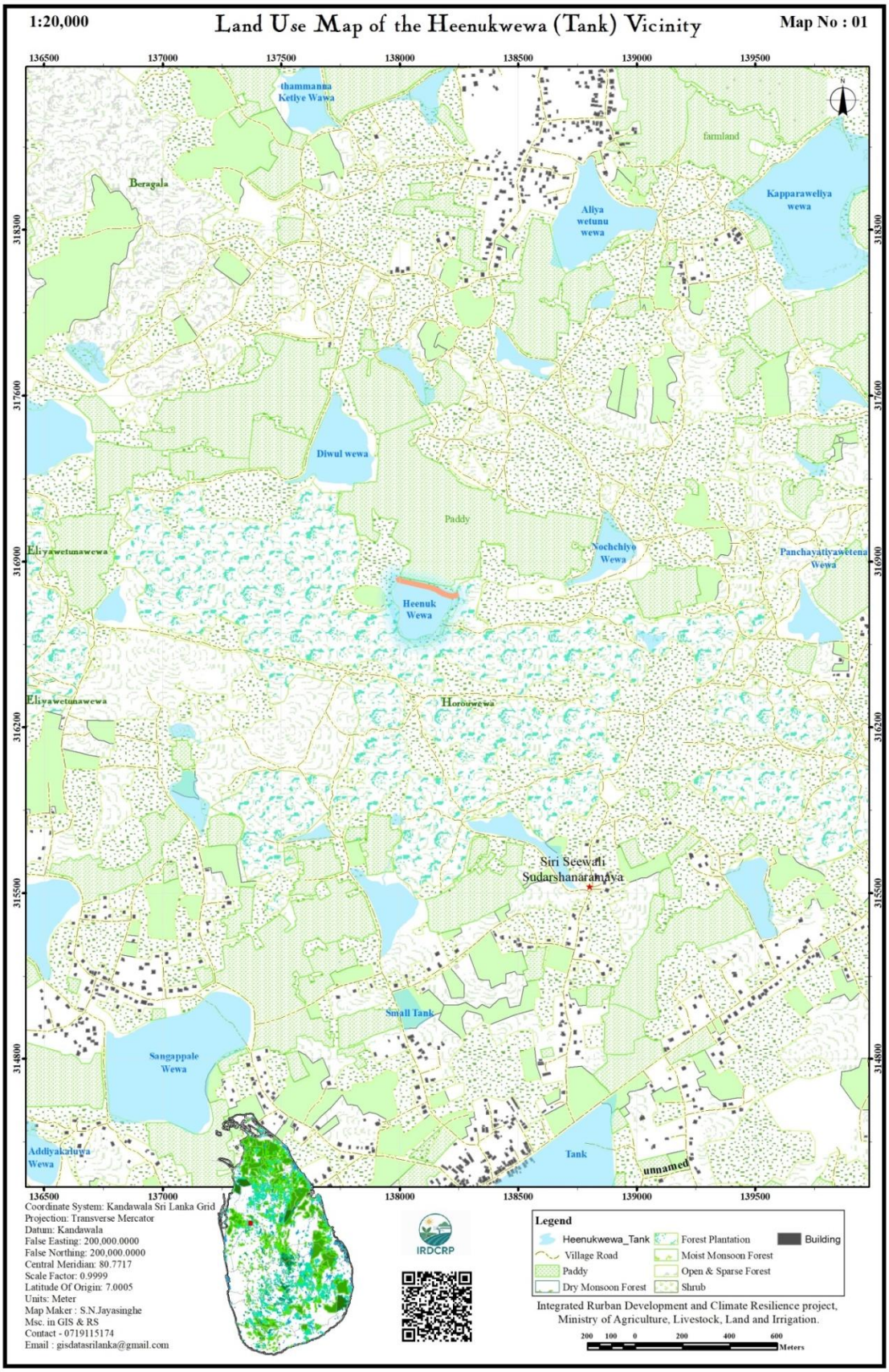

Figure 1: Land use map around the Hinuk wewa[5]

[5] **Mr. S.N. Jayasinghe** of the Department of Archaeology, for his **generous volunteering of time and expertise** to complete the land use map is acknowledged.

2.4. Fauna

Elephants have not been reported in the downstream of the tank territory (paddy fields) or village area. However, common wildlife species associated with the Dry Zone may be present in the tank's periphery, particularly within the adjacent reserved forest. According to local farmers, observing wildlife during the daytime is uncommon.

The project area is not prone to natural disasters such as floods, prolonged droughts, or cyclones, nor is it susceptible to geological hazards like landslides or rock falls.



Figure 2: Tank bed proposed to desilt. The yellow circle indicates the forest reserve.



Figure 3: The damaged sluice is proposed to be demolished.



Figure 4: The tank's bund is degraded and has been encroached upon by larger trees and scrub forest.

3. Brief Description about the Proposed Activities

3.1. Headwork Development[6]

3.1.1. Improvements on the tank bund

- jungle clearing (0.314 ha),
- stripping off soil receiving new earth (158 m^3) and this soil will be reused for canal rehabilitation works and other works as required and appropriate);
- Benching on the tank bund slopes to receive new earth & supply of good quality gravel including spreading, watering along the tank bund and compaction.
- Stripping top soil in the borrow area for earth excavation to fill the tank bund (2050.0 m^3)[7].
- Cutting, laying, pegging of turf as directed including watering and keeping moist until plants growth establish (775 m^2).
- Supply good quality gravel including spreading, watering along the tank bund and compaction. (99 m^3)
- Felling and uprooting five (05) *Azadirachta indica* trees**.**
- Removing of 10 ant/termite hills.

3.1.2. Construction of two (02) numbers of headwall sluices

- Demolishing of existing damage sluice
- Cut opening the bund, stock piling soil at the site, back filling, watering and compaction.
- Earth excavation in foundation and spoil to waste or backfill
- Earth works, using borrow puddle clay to construct of paddle clay wall, including watering and compaction.
- Coffer dam and dealing with water.

3.1.3. Construction of natural type spill

- Clearing and preparation of the site
- Earth excavation in foundation and spoil to waste or backfilling as appropriate (6.5 m^3).
- Placing of concrete (8 m^3) Earth excavation along the spill tail canal and forming training bund on paddy field side with compaction.

3.1.4. Clearing the tank bed

- Desilting of scraping 150 mm thick layer of vegetation inclusive of water plants, uprooting roots from tank bed by machinery (3 ha)[8].

[6] The wordings and the quantities as per the BoQs submitted by the DAD.

[8] Suitable soil from the tank bed shall be used for tank bund rehabilitation works.

3.2. Downstream Development

3.2.1. Rehabilitation of Irrigation canals LB and Main canal

- Clearing and stripping of top soil to a depth of 75 to 150 mm along the canal trace (226 m^3).
- Stripping top soil in the borrow area. Earth excavation hauling and placement of fill material on canal bund, spreading with 150 to 225 mm thick layer by layer including trimming for required profile, watering and compaction. (1,010 m^3).
- Cutting, laying, pegging of turf as directed including watering and keeping moist until plants growth re-established (945 m^3)

3.2.2. Construction of canal concrete lining, LB, RB & main canal

- Earth excavation in foundation and spoil to waste or back fill (10 m^3)
- Placing of cement concrete (19 m^3)
- Providing expansion joints in concrete lining at every 3 m intervals filled with bitumen and sand. (45 m).

Construction of a Hume pipe culvert for tractor passing across paddy field, Construction of eight (8) numbers of farm turnouts, Construction of three numbers of end regulators, construction of two culverts, and Rehabilitation of tank approach road.(0.15 ha) (Excavation of side drains (203 m^3) , hauling and placement of fill earth (475 m^3), placement of gravel on the road (285 m^3), are also proposed under the improvement of Hinuk wewa rehabilitation works.

Under the proposed rehabilitation and new works, there will be certain amount of soil earth works. The dredged material will be used for project work as appropriate or disposed of on-site by depositing and levelling it in the area directly below the tank bund.

Residuals from removed scrub/throne jungles, branches from the removed trees, solid waste derived from the workforce, etc., may need to be disposed of. Additional solid waste accumulated around the tank must also be removed. Unused dredged materials should be properly disposed of. Achieving all these technically and economically sound disposal plans requires.

Most importantly, since the tank is located at the periphery of a reserved forest, clearance from the forest department should be taken prior to commence the works. Construction of the proposed agri road may need clearance from the forest department as well as from the Divisional Secretary and any other concerned parties (if there is/are).

4. Environmental Screening

Table 1: Environmental Screening for Tank Rehabilitation Works – IRDCRP

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	**yes**	**Medium**	Both rehabilitation and new works are proposed. **1.1.** New works; ▪ Construction of two culverts ▪ Construction of three numbers of end regulators ▪ Construction of eight (8) numbers of farm turnouts ▪ Construction of a Hume pipe culvert for tractor passing across paddy field ▪ Construction of canal linings with concrete along LB, RB and main canals. **1.2.** Rehabilitation, expansion, or upgrade of existing physical infrastructure ▪ **Improvements on the tank bund** (Figure 4) by light jungle clearing, stripping off soil receiving new earth (158 m3 and this soil will be reused for canal rehabilitation works and other works as required and appropriate; benching on the tank bund slopes to receive new earth & supply of good quality gravel, including spreading, watering along the tank bund, and compaction. Felling and uprooting five (05) *Azadirachta indica* trees**.** Removing 10 ant/termite hills.

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	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:			▪ **Stripping top soil in the borrow area for earth excavation to fill the tank bund (2050.0 m^3).** This amount of required earth shall be received from a licence supplier. ▪ **Rehabilitation of tank approach road.(0.15 ha) (Excavation of side drains (203 m^3) , hauling and placement of fill earth (475 m^3), placement of gravel on the road (285 m^3),** **1.3.** NO. (Neither the tank bund height nor the spillway height will be raised). **1.4**. Clearing tank bed – Desilting the tank bed (3.0 ha) by removing 150 mm thick layer is proposed. Though 150 mm is mentioned as a general value, it should be customized based on the tank's situation. The proposed area shall be marked clearly and the work shall be performed under strict supervision of the DAD. **1.5.** The dredged material will be used for project work as appropriate or disposed of on-site by depositing and levelling it in the area directly below the tank bund. **1.6.** Residuals from removed scrub/throne jungles, branches from the removed trees, solid waste derived from the workforce, etc., may need to be disposed of. Additional solid waste accumulated around the tank must also be removed. Unused dredged materials should be properly disposed of. Achieving all these technically and economically sound disposal plans requires.
2	Will any of the planned	**No**		All construction work is planned to be carried out after the main cultivati

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	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.			seasons, avoiding the *Maha* and *yala* seasons when the water level in the tank is low.
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	**No**		Given the aforementioned proposed interventions, there is no need for the water level drawdown.

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	vegetation, effects on migratory birds and other fauna).			
4	Will the project cause localized flooding and/or poor drainage during construction?	**No**		The rehabilitation of the natural spillway is expected to facilitate the systematic drainage of excess water from the tank during the rainy season.
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 physical interventions are mainly the rehabilitation works for existing hydrological structures and processes; thus, changes in topographical parameters and land use patterns are not expected. Proposed new activities include construction of four numbers of Hume pipe tractor crossings, construction of eight numbers of farm turnouts, construction of three end regulators, which are having minimal earth works across the paddy fields. Hence, changes in the topography, land use, changes in water bodies are not expected.
6	Will construction of the project cause soil erosion within the site due to steep grade or soil content?	**Yes**	**Minor**	The soil type in the tank area is primarily composed of Reddish-Brown Earth in the tank area is low humic clay in the paddy fields and as reported, a highly impervious underground layer. Gravel-rich soil can be observed in the village area where site access roads are available and, in the areas above the FSL. The area has no inherent soil erosion problems. However, almost all the activities proposed contain earth/soil works. Cut slopes and stockpiled earth and soil are prone to erosion during the construction stage. These should be managed and mitigated.
7	Will the Project release pollutants or any hazardous, toxic or noxious substances to	**20.1 Yes**	Negligible	20.1. The project will generate temporary, localized emissions from the combustion of fossil fuels by construction equipment, heavy machinery, and project-related vehicles. These emissions, which

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	20.1. Air? **20.2**. Nearby surface or groundwater sources? **20.3**. Soil?	**20.2. No** **20.3 No**		include nitrogen oxides, carbon monoxide, and particulate matter, will cause a minimal and temporary deterioration of ambient air quality. However, given the limited durat0 .ion and scope of the construction activities, the overall impact is considered to be negligible and insignificant, and will not result in a long-term release of hazardous, toxic, or noxious substances. 20.2. There are no groundwater sources within 500 m of area from the project site. Minor irrigational tanks are within the cascade (within 1 km periphery). However, project induced pollutants may not reach such water tanks. 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 **21.1**. noise? **21.2**. vibration? **21.3**. dust emission? **21.4.** release of light? **21.5**. heat energy? **21.6**. electromagnetic radiation?	**21.1**. Yes **21.2**. Yes **21.3**. Yes **21.4.** No **21.5**. No **21.6**. No	Low	**21.1**. **& 21. 2.** Given that the nearest populated area is more than 1 km from the project site, residents and road users in the vicinity will not be affected by noise and vibration from the project. However, this will be a concern for wild animals. **21.3**. Dust emission will occur with the dry weather and wind action prevails. But in the sense of the community, it is not a major concern. However, the gravel and sand access roads may be a source of dust during construction, and dust suppression measures should be implemented along them. **21.4**. Night time works, under flash lights should not be allowed since it may a considerable disturbance to the nocturnal fauna around the tank and forest reserve.
9	Does the proposed location fall	**Yes**	**Medium**	At the tank periphery, a reserved forest is demarcated by the forest

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	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?			department, known as Hinuk wewa reserved forest.[9] Hence required statutory clearance before initiating the works should be obtained from the forest department.
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.).*"	**Not certain**		Since the forest reserve at the upper periphery of the tank, there can be wildlife, though unknown. They may use the tank for water and roaming around. However, this is not an area known for human elephant conflict.
11	Will the proposed project activities will cause negative effects on wildlife habitats, populations, corridors or movement?	**yes**	**Negligible**	Based on the preliminary environmental screening, direct negative impacts on wildlife populations and habitats are not anticipated. The rehabilitation activities are focused on pre-existing infrastructure, and no significant habitat fragmentation or destruction is foreseen.
12	Will the proposed project activities cause negative effects on impact on fish migration and	**No**		Such an impact is not expected.

[9] The name of the forest as mentioned by the farmers. It should be clarify from the forest department.

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	navigation?			
13	Will the proposed project activities will cause increased risk of wildlife poaching and forest fires?	**yes**	Moderate	Since a forest reserve is located at the periphery of the tank as depict below, wild animals may use the tank for drinking water during the early morning or at night. As a result, there is a potential for poaching, especially after dark. 
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**	Minor	Five trees of kohomba/neem tree (*Azadirachta indica*) located adjacent (Figure: 8) to the tank bund is planned 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?	**Yes**	Negligible	The project site is situated on a flat terrain, with paddy fields downstream and a forest reserve bordering the upper margin of the tank. Both of these areas are visually sensitive and appealing. During the construction phase, potential visual pollution from stockpiled

No	Screening Questions	Yes/No	Scale of Impact	Remarks
				materials, heavy machinery, and dust will negatively impact the surrounding aesthetics.
16	Any invasive fauna or flora presents in the tank or surrounding area?	**No**		No invasive fauna or flora species were observed within the tank or its immediate surrounding area.



Figure 5**:** LB, Main and RB canal that proposed to rehabilitate.

Table 2: Impact Matrix Code

Risk level	Impact-based criteria	Mitigation-based criteria
High	Impact is significant, widespread, or affects sensitive receptors; could cause long-term or irreversible changes; affects ecosystem services, public use, or operational safety.	Mitigation requires well thought planning and high-tech design based costly mitigation; residual effects likely remain even after mitigation.
Medium	Impact is moderate, localized, and may be temporary; could affect specific ecosystem components, users, or operational functions but not cause irreversible damage.	Mitigation is feasible and effective with moderate design based/operational planning; residual effects are expected to be minor or temporary.
Minor	Impact is minor, highly localized, or temporary; unlikely to affect overall ecosystem function, public use, or operational activities significantly.	Mitigation is straightforward, low-cost, and expected to fully address the impact.
Negligible	Impact is insignificant; changes are barely measurable or within natural variability.	No mitigation required or minimal preventive measures sufficient within O & M.

5. Screening Decision and Recommendation:

The project site is situated in an environmentally sensitive area due to the presence of adjacent forest reserve but holds no significant historical or cultural concerns. The proposed activities are not expected to cause irreversible or significant adverse environmental impacts during either the construction or operational phases. The limited impacts associated with this project are primarily related to the construction phase and are temporary in nature. These include:

- **Disturbances to local wildlife**, including the potential for poaching.
- **Soil erosion due to proposed earth works.**
- **Tank water pollution due to construction materials**
- **Occupational health hazards**, such as the risk of wildlife attacks during the transport of materials and construction activities.

To avoid, mitigate or compensate above possible negative impacts, adhering to comprehensive **Environmental Management Plan (EMP)** is proposed. This plan will outline appropriate mitigation measures and a monitoring framework to ensure their effective implementation. Regular monitoring throughout the project's construction phase is crucial to avoid or significantly reduce these potential impacts.

Name: Maheeni S. Singappuli
Title: Senior Environmental Specialist

Signature: 
Date:29.09.2025

6. Environmental Management Plan – Hinuk Wewa

Table 3: Environmental Management Plan[10] for the proposed activities under Hinuk wewa Rehabilitation works.

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	**Over extraction of natural resources**	**Material Sourcing**	1.1 The contractor is required to ensure that sand, aggregates and other quarry material is sourced[11] from licensed sources or the instructions given by the tank ownership (The Department of Agrarian Services). 1.2 Any material shall not be obtained from the adjacent forest reserve or tank bed. 1.3 Purchasing of any material which are sourced from any other protected area and/or designated natural area are strictly prohibited. 1.4 The contractor is required to maintain the necessary licenses and environmental clearances for all burrow and quarry material they are	Engineering Cost	Contractor	DAD

[10] A management plan for social aspects related concerns are done separately for the proposed activities under this contract.

[11] **The BOQ submitted by the DAD (Department of Agrarian Development) includes a cost for 2, 050.00 m^3 of soil at a rate of Rs. 935.00 per cubic meter. Therefore, no soil will be borrowed from either the tank bed or the surrounding area for any soil requirements under this contract.**

			sourcing – including soil, fine aggregate and coarse aggregate. 1.5 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. 1.6 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[12] and/or the PMU[13]. 1.7 To prevent accidents, borrow pits must be finished with slanted edges. This will reduce the danger to both humans and animals.			
2	**Ecological concerns such as;** **Disturbance and damages to wild fauna, their habitats, and vegetation cover.** **Rremoval of five (05)**	**Material Sourcing.** **Material transport.** **Construction works.**	2.1. The work area is adjacent to a protected area, hence chances for wildlife poaching, disturbances to wildlife around the tank shall not be done. 2.2. **Time Restrictions:** Work activities are restricted to between **9:00 AM and 4:00 PM** to avoid the peak hours	Engineering Cost	Contractor Farmer organization DAD	PMU

[12] Department of Architectural Development
[13] Project Management Unit

	trees. **Illegal activities such as wildlife poaching.**		of wildlife movement, which typically occur at dusk and dawn. 2.3. **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. 2.4. **No Harm Principle:** Under no circumstances shall any wild animal be harmed, injured, or killed as a result of project activities. All personnel must be briefed on this non-negotiable principle. 2.5. **Waste Management:** 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. 2.6. Only five trees are identified to remove for rehabilitation works of tank bund. The following steps are to be followed for removal. 2.7. The tree shall be removed from the construction sites before commencement of construction.			

			2.8. Compensatory plantation by way of Re-plantation of at least twice the number of trees cut should be carried out in the project area. 2.9. Replanted plants shall be monitored and look after by the farmer organization at least for one year. 2.10. The cutting or pruning of other larger trees along the tank bund and adjacent areas shall not be done. 2.11. Anthills with live colonies may be relocated as appropriate without destroying them. 2.12. No one shall access to the adjacent reserved forest or any other forest patch around the tank. Harming, collecting, poaching or shooting any species of wildlife is strictly prohibited. 2.13. No any mode of fire, cigarettes shall be taken into the worksite without permission of the DAD officials. 2.14. Cooking shall not be allowed on the site. 2.15. No one shall remain on the site			

			after working hours. 2.16. Speed limits[14] and operating times mentioned above for the construction/material transport vehicles should be imposed. 2.17. Due consideration should be given to carefully clearing of vegetation avoiding destruction of habitats of fauna. 2.18. The contractor will take reasonable precaution to prevent workmen or any other persons from removing and damaging any flora (plant/vegetation) including fishing in the tank and hunting of any animal. 2.19. If any wild animal is found near the construction site at any point of time, the contractor will immediately upon discovery thereof acquaint the DAD officer or Engineer and carry out the officer's instructions for dealing with the same. 2.20. The Engineer will report to the nearby Forest Department/Department of Wild Life Conservation (range office or			

[14] 10 km per hour along the village roads and tank access road.

			divisional office) and will take appropriate steps/measures, if required in consultation with them. 2.21. The contractor should ensure animals' access to water is not blocked during construction.			
3.	**Pollution concerns.** **Such as accumulation of solid waste and water quality deterioration.**	Setting up of material storage yards. Stock piling of soil, dredged materials. Removal of vegetation. Solid waste from construction staff. Transport of construction material.	3.1. No labour camps shall be allowed under this contract on or around the worksite. 3.2. All heavy equipment and machinery shall be fitted in full compliance with the national and local regulations. 3.3. No machinery, equipment shall be parked on the site. Based on the requirement, such machinery or vehicles will approach the site. 3.4. Vehicles transporting soil, sand and other construction materials shall be covered. Limitations to speeds of such vehicles necessary. 3.5. Regular and proper maintenance of construction vehicles and machinery to avoid air emissions. 3.6. There should be no burning of wastes on site. 3.7. Workforce related solid waste shall be removed from the site on daily basis. 3.8. Any cleared vegetation that	Engineering Cost	Contractor	DAD PMU

			needs to be removed to facilitate proposed spill work 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.			
4.	**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; 4.1. Immediately stop the performing activity. 4.2. With the approval of the resident engineer delineate the discovered site area. 4.3. 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. 4.4. Through the responsible officer of DAD, notify the responsible authorities, the Department of Archaeology and local authorities within as soon as possible. 4.5. Submit a brief chance find report under supervision of DAD officer, within	Engineering Cost	Contractor	DAD PMU

			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. 4.6. Responsible authorities would be in charge of protecting and preserving the site before deciding on the proper procedures to be followed. 4.7. 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. 4.8. 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.			
5.	**Chances for Spreading Invasive species**	**Material transportation**	5.1. All equipment, vehicles and machinery, shall be thoroughly cleaned before entering the site. 5.8. Borrow material for tank bund rehabilitation works to be brought from	Engineering Cost	Contractor and Farmer organization	DAD

			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 5.9. Washing the vehicles should be conducted periodically to prevent carrying any invasive species 5.10. The site, even after completion of works, should be inspected periodically to ensure that no new invasive species are established at the site.			
6	**High Noise & Vibration levels that can affect nearby wildlife**	**Operation of equipment and machinery. Material storage and transport**	6.1. Working time for noise/vibration generation activities should be restricted and carried out only from 9.00 am to 4.00 pm. 6.2. 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.	Engineering Cost	Contractor	DAD

			6.3. 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	**Soil erosion, sedimentation of nearby water bodies and low lying areas**	**Construction work including de-silting, bund rehabilitation works, canal bund strengthening, Removal of top soil,**	7.1. Soil stockpiles and other construction material shall not be placed within the tank bed or banks of the tank, canals or access road area for more than a week. 7.2. Installing and maintaining erosion and sediment control measures such as silt traps to avoid sediment runoff into tank and nearby lands and paddy fields. 7.3. For any activity related to the construction, excessive clearing of ground vegetation, removal of trees shall not be done. 7.4. Avoid stockpiling disposed material such as removed earth/clay from the tank bed, spill area and canal rehabilitation works, and any demolished material on the site, and those shall be disposed of appropriately as guided by the DAD. 7.5. All exposed soil areas shall be stabilized and re-vegetated as soon as possible on completion of works to prevent potential future erosion.	Engineering Cost	Contractor	DAD

8	**Impaired water quality**	**Spill out of fuels and lubricants from machinery & vehicles.** **Vegetation removal.** **Repair sluice, spill and bund.**	8.1. Avoid stockpiling of earth fill especially during the rainy season unless covered by tarpaulins or plastic sheets 8.2. Prioritize re-use of excess spoils and materials in the construction works. 8.3. Install temporary silt traps or sedimentation basins along the drainage leading to the paddy fields. 8.4. Fuel or lubricants shall not be store anywhere on the site.	Engineering Cost	Contractor	DAD PMU
9	**Solid Waste Disposal**	**Site clearing,** **Waste from work force,** **Waste from construction activities.**	9.1 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. 9.2. Reusable waste, such as cement bags, shall be either resold or reused. 9.3. Any hazardous waste[15] must be handled with special care and according to instructions from the LA. 9.4. 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 DAD officer.	Engineering Cost	Contractor	DAD

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

			9.5. Food waste shall not be discarded into the surrounding environment, as this may attract wildlife and must be removed from the site daily.			