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Ministry of Agriculture, Livestock, Lands and Irrigation



Environmental Screening Report & Environmental Management Plan For

Rehabilitation of Galkadawala Maha Wewa

IRDCRP Component No: 2.1

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1. General Information

The Galkadawala Maha wewa is located in the Trincomalee district of the Eastern Province. The Divisional Secretariat Division is Gomarankadawala, and the GN Division is No. 232, Galkadawala. The tank functions under the purview of the Gomarankadawala Agrerian Division.

The tank belongs to the Galkadawala cascade system in the Yan Oya river basin. Table one illustrates the tank belongs to the Galkadawala cascade and catchment details[1].

Table 1: Tank details of Galkadawala cascade-Trincomalee

Name of Tank	Gross catchment Area (ha)	Net Catchment Area (ha)	Gross catchment Area (km^2)	Net Catchment Area (km^2)
Galamunu wewa	29.63	29.63	0.296	0.296
Dangas wewa	54.39	54.39	0.544	0.544
Kudadivul Wewa	12.68	12.68	0.127	0.127
Nikka Wewa	23.89	23.89	0.239	0.239
Maila Wewa II	38.57	38.57	0.386	0.386
Damatha Wewa	17.24	17.24	0.172	0.172
Galkadawela Maha wewa	**304.9**	**292.22**	**3.049**	**2.922**

The command area of Galkadawala maha wewa encompasses 166 acres of paddy fields[2].

The tank adjoins the Pamburugashinna Reserved Forest. Although the area is not generally prone to a high level of Human-Elephant Conflict (HEC), a small number of elephants occasionally appear near the tank and in adjacent paddy fields. Farmers report that these elephants visit primarily to consume palmyra fruits. Disturbances to daily life, however, are not a serious concern as the tank is encircled by an electric fence.

[1] Data recived from the DAD-Trincomalee
[2] As reported by the DAD



Figure 1: Land use map of the Galkadawala Maha wewa

1.1. Habitat types

The **immediate upper periphery habitat types** within a one-kilometer radius of the project site constitute a **mosaic** of distinct land cover units. This mosaic notably includes the **Pamburugashinna Reserved Forest** situated at the Northern periphery (catchment area) of the tank (Figure 1), and **irrigated paddy fields** located immediately downstream of the tank bund.

The surrounding landscape is further characterized by patches of shrub forest and a matrix of village settlements and access roads located in the downstream area.

Collectively, these habitat types—the Reserved Forest, the shrub forest patches, and the tank ecosystem itself—provide a variety of distinct habitat niches. These niches support a diverse range of faunal species and contribute to the provision of various vital ecosystem services.

Consequently, the tank is recognized as a site of significant ecological and socio-economic importance, serving two important functions:

- Supporting local agricultural activities (paddy farming).
- Functioning as a crucial water source for wildlife within the Pamburugashinna FR and contiguous forest fragments.

The nearest human habitation is situated within 600-700 m territory, just downstream the tank bund



Figure 2: Land Use within the Project Impact Zone

Figure 3 illustrates the paddy fields that receive irrigation water from the tank. Palmyra palms (*Borassus flabellifer*) are observed growing within the paddy field area. Local farmers report that elephants visit the area, though the elephant fence has erected, primarily to consume the Palmyra fruits. The farmers stated that these elephant visits currently pose no significant disturbance to their daily lives or agricultural activities.



Figure 3: Irrigated Paddy Fields Downstream of Galkadawala Tank



While complete species-level taxonomic identification was not feasible during this preliminary screening phase, the dominant flora is consistent with species prevalent in a dry zone evergreen forest ecosystem.

The downstream paddy fields are characterized by the presence of well-grown and isolated Palmyra palm trees (*Borassus flabellifer*).

Tree species such as *Terminalia arjuna, Azadirachta indica* (Neem), and *Ficus benghalensis* (Banyan) are observed growing along and adjacent to the tank bund (Figure 4).

Upper periphery of the tank is covered by the dry zone evergreen forest species.

Figure 3: Floral Species at the Tank Bund Margin

However, there are many types of aquatic plant species including invasive species present in the water column.

Water hyacinth (*Eichhornia crassipes), Salvinia molesta*, *Pistia sp. Eichhornia crassipe*, and *Alternanthera philoxeroides* are invade the margins of the water column.

A terrestrial invasive, *Lantana camara* can be observed, in isolation at the downstream areas. Other than the inavesve aquatics, flowering plants such as *Nymphaea* species also present in the tank.



Figure 4: *Pistia and salvina present in the tank*



Figure 5: Water hyacinth (*Eichhornia crassipes)* has also invaded the tank.



Figure 6: *Nymphaea* species

1.2. Fauna

Among the faunal species present within the project impact zone, the elephants (*Elephas maximus maximus*) is the most notable species. While the presence of elephants is often associated with crepuscular periods (dark and dawn), they are not exclusively observed during these times.

No other wild faunal species were positively identified during the limited survey conducted during the field visits. However, the upper periphery of the tank is considered a high-potential area for wildlife utilization due to its immediate proximity to the Pamburugashinna Reserved Forest.

1.3. 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 and the area is not susceptible to geological hazards, including landslides or rock falls.

2. Brief Description about the Proposed Activities

2.1. Headwork Development[3]

2.1.1. Improvements on the tank bund – 410 m[4]

Improvement of Tank Bund. Stn. 0+000 to 0+410	Unit	Quantity
Light jungle clearing along channel and bund reservation.	*ha*	*1.08*
Stripping the top soil to receive new earth by scrapping weeds & grasses including removing all debris outside the reservation & deposit as directed (haul 0.4km).	*m^3*	*1,589.00*
Furnishing earth from borrow area[5] & forming bund ,including benching, spreading ,watering & compaction by sheep foot roller in horizontal layers ,preparation of bund slopes to the specified profile with proper compaction. Degree of compaction should not be less than 98%	*m^3*	*4,815.00*
Furnishing ,placing, watering, spreading & compaction gravel by roller to compacted 200mm thick gravel to top of the bund(4km)	*m^3*	*613.00*
Cutting and planting of turf on the slope of bund including watering, transport 3 km.	*m^2*	*2,205.00*
Removing termite nests (ant hills), application of insecticides and removing outside the reservation	*No.*	*10.00*
Tidying up site After construction	*Item*	*Allow*





Figure 7: Current situation of the tank bund.

[3] Below items and amounts are mentioned as per the BoQ submitted by the DAD.
[4] As per the BoQ submitted by the DAD.
[5] As informed by the DAD Technical Officer, they are planned to obtain necessary earth for bund rehabilitation works from the upper margin of the tank, (but not from the forest).

2.1.2. Construction of 0.300 m x 12.81 m long headwall type sluice at Stn.0+141.1.R/B

Construction of Head wall type RB sluice 300mm dia	**Unit**	**Quantity**
Demolishing existing damage sluice including removing outside reservation.	Hrs.	6.00
Cut opening the bund and spoil to the dumped at D/S and use after construction for filling same including watering and compaction.	m3	176.46
Cutting trenching & removing damaged Ø0.30mx6.60m long Hume pipes & collars.	L/days	4.00
Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	9.60
Furnishing cutting bending and laying of Mild steel reinforcement. Lift 0 - 1.5m(Included 25% for wastage)	kg	21.76
Furnishing cutting bending and laying of Tor steel reinforcement. Lift 0 - 1.5m(Included 25% for wastage)	kg	26.15
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, including form work.	m^3	16.58
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	68.09
150mm - 225mm thick random rubble pitching in 1:5ct. Mortar.	m^2	10.35
Lay and joint of 300mm dia. Hume pipes with collars including excavation and back filling.	L/m	7.32
Borrow earth from Spoil Dump, cut 0-5', lift up to 5', and haul 200'. Placing & comp. earth in dam incl. watering (wat. haul 1.5 mile.).	m^3	152.05
Furnish and install of 300mm dia. Cast iron gate and fixing of lifting arrangements to the above gates (37mmØ size of spindle, Brass nut, Housing base plate, Operating handle, Rag bolts & etc.) with two coats of anticorrosive paints.	Nos.	1.00



Figure 8:The Sluice is none-functional at present

2.2. Downstream Development

2.2.1. Access steps for bund 2 Numbers

Earth excavation in foundation & part fill. Cut & Lift up to 0-1.5m (by manual)	m^3	13.20
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	47.25
Furnishing cutting bending and lying of Tor steel reinforcement. Lift 0 - 1.5m(Included 25% for wastage)	*kg*	134.19
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	8.94

2.2.2. Repairing of existing 2 Numbers of Bathing steps

2.2.3. Construction of New Bathing steps 2 Nos.

Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	22.82
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	73.97
Furnishing cutting bending and laying of Tor steel reinforcement. Lift 0 - 1.5m(Included 25% for wastage)	*kg*	235.20
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	21.41

2.2.4. Improvement of Agri Road (from main road to bund)

Clearing light jungle inclusive of clearing 30m from the site	ha	0.09
Stripping top soil to a depth of 100mm by machinery	m^2	172.65

Earth excavation from borrow area by Backhoe and forming tank including transporting, placing (150-225)mm layer string compacting and trimming as per instructions(haul up to 2 km)	m^3	405.00
Turffing to new earth including cutting, laying, pegging and watering per 1 sq.m.	m^2	598.00
Furnishing, piling, placing spreading and compacting gravel to width of 4.0 and to a thickness of 225mm, haul 20km by machinery as directed.	m^3	318.00

2.2.5. Construction of Ø450mmx4.8m Long Hume pipe Culvert in Agro Road at Stn. 0+235m. (1 Number)

Demolishing existing damage sluice including removing outside reservation.	hr.	2.00
Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	3.59
Furnishing, making, fixing and removing of form work using class - II timber lift 0-1.5m.	m^2	27.39
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	5.83
Furnish, lay and joint of 450mm dia. Hume pipes with collars including excavation and back filling	L.m	4.88

2.2.6. Improvements of Centre channel

150mm thick Stripping top soil and spoil to waste (A-B channel)	m3	890.00
Earth excavation in channel & spoilt to waste or fill material. lift 0-1.5m	m3	73.00
Earth excavation from borrow & filling in canal including compaction haul 1 k m. Lift 0-1.5m	m3	1,957.00
Cutting and planting of turf on the slope of bund including watering, transport 1 km.	m2	2,430.00

2.2.7. Construction of center Canal lining 0+000 to 0+034

Removing Existing canal from 0 to 34 and debris clear away.	Item	Allow
Furnishing ,placing, watering, spreading & compaction gravel by roller to compacted 200mm thick gravel to top of the bund(4km)	m3	5.61
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	20.40
Furnishing cutting bending and laying of Tor steel reinforcement. Lift 0 - 1.5m(Included 25% for wastage)	kg	359.50
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	8.51

2.2.8. 42 Numbers of One way farm turn out

Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	2.94
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	4.20
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	50.82
Furnish fabricate & fix 25x25x5mm Angle Iron as per detail including application of 2 coats of anti-corrosive paint	Lm	33.60
Furnish, of 150mm dia Hume pipes including excavation and back filling	Lm	76.86
2'' thick special class timber planks for farm gates including applying hot tar.	m^2	2.10

2.2.9. 9 Numbers of FTOO (T2) with 200 mm drop structure

Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	5.40
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	10.80
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	84.60
Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	5.94
225-300 mm Dry Rubble Packing	m^2	5.94
Furnish fabricate & fix 25x25x5mm Angle Iron as per detail including application of 2 coats of anti-corrosive paint	Lm	9.90
furnish, of 150mm dia. Hume pipes including excavation and back filling	Lm	16.47
2'' thick special class timber planks for farm gates including applying hot tar.	m^2	0.45

2.2.10. Construction of 5 Box culverts

Earth excavation in foundation & part refill. Cut & Lift upto 0-1.5m (by manual)	m^3	22.66
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	196.78
Furnishing cutting bending and lying of Tor steel reinforcement. Lift 0 - 1.5m(Included 25% for wastage)	kg	2,780.40
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	32.48

2.2.11. Construction of 02 Numbers of 0.25 m (BW=0.6) Drop Structure

Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	2.40

Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	5.32
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	3.22
Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	2.00
225-300 mm Dry Rubble Packing	m^3	1.32

2.2.12. Construction of 02 numbers of 0.25 m (BW=0.45Drop Structure

Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	2.20
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	5.27
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	3.10
Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	1.80
225-300 mm Dry Rubble Packing	m^3	1.25

2.2.13. Two numbers of Drop Structure 0.25m drop 0.3m wide

Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	1.90
Furnishing, making, fixing 12mm thick ordinary plywood sheet form work each of 3 uses and removing same once.	m^2	4.12
1:2:4(20mm) cement concrete work using concrete mixer and compacting with porker vibrate, including curing, excluding form work.	m^3	2.60
Earth excavation in foundation & part refill. Cut & Lift up to 0-1.5m (by manual)	m^3	1.60
225-300 mm Dry Rubble Packing	m^3	1.06

In addition to the aforementioned works, the construction of several minor irrigation structures is proposed to effectively regulate water flow along the paddy fields.

These proposed structures include:

- Drop Structures: To manage elevation changes and dissipate energy.
- Drain Inlets: To facilitate the collection and removal of excess water.
- End Structures: Structures typically placed at the terminus of canals or drains.
- Box Culverts: To allow water to pass beneath infrastructure (proposed for construction in the centre, Left Bank (LB), and Right Bank (RB) canals).

3. Environmental Screening

Table 2: 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 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:	**yes**	**Substantial Risk**	1.1. New works; ▪ One number of Drop Structure 0.2m drop 0.6m wide ▪ Two numbers of Drop Structure 0.25m drop 0.3m wide ▪ Construction of 02 numbers of 0.25 m (BW=0.45Drop Structure ▪ Construction of 02 Numbers of 0.25 m (BW=0.6) Drop Structure ▪ Construction of 5 Box culverts ▪ 9 Numbers of FTOO (T2) with 200 mm drop structure ▪ Access steps for bund 2 Numbers 1.2. Rehabilitation, expansion, or upgrade of existing physical infrastructure ▪ Improvement of Tank Bund (175m Total Length) ▪ Improvements in Spill 1.3. NO. (Neither the tank bund height nor the spillway height will be raised). 1.4. **Desilting of the tank bed is not proposed** as part of this intervention. However, the DAD Technical Officer mentioned during the field visit that the earth required for the bund rehabilitation works may be obtained from the tank bed. **1.5.** Not applicable **1.6.** Residuals from removed scrub/throne jungles solid waste derived from the workforce, etc., may need to be disposed of. Additional solid waste accumulated around the tank must also be removed. Most importantly, The tank bund and immediate downstream of it have infested with number of invasive plants, clearing, cutting ad removing of

No	Screening Questions	Yes/No	Scale of Impact	Remarks
				them to be done.
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**		The construction work is scheduled to be carried out during the inter-seasonal period, specifically avoiding the *Maha* and *Yala* cultivation seasons.
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**	--	The rehabilitation of headworks shall take place only after a cultivation season. During this period, the water level in the tank is almost low, so deliberately lowering the water level will not be required. There are no groundwater sources, such as dug wells, within approximately 700 m radius of downstream. Therefore, the water level in the tank and the availability of groundwater in the village may not be related. Even during the month of October-during the field visit (after the completion of the *Yala* cultivation season), certain levels of water remain in the tank. This residual water may benefit the wildlife and other ecological parameters of the tank and tank bed. The farmers stated that it is rare to see the tank completely empty, as at least a small amount of water remains in the tank throughout the year.
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,

No	Screening Questions	Yes/No	Scale of Impact	Remarks
				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**	**Low Risk**	The tank bund rehabilitation and spill canal construction are being proposed, there is a risk of soil erosion in specific locations, especially along the tank bund, if the civil works occur during the rainy season. However, once construction is completed, soil conservation will be improved.
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, heavy machinery, and project-related vehicles. These emissions, which include nitrogen oxides, carbon monoxide, and particulate matter, will cause a minimal and temporary deterioration of ambient air quality. However, given the limited duration and scope of the construction activities, the overall impact is considered to be negligible and insignificant, and it will not result in a long-term release of hazardous, toxic, or noxious substances. There are no groundwater sources within 2-3 km radius of the project site. Minor irrigational tanks are within the cascade (within a 1 km periphery). However, project-induced pollutants are not expected to reach such water tanks. Accidental spills of fuel, lubricants, and cement on the ground may pose a threat to soil quality and shall be prevented.
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	Low Risk	8.1. & 8.2. No major impact is anticipated. 8.3. Dust emission will occur with dry weather and prevailing wind action. While it is not a concern for the community much, the gravel and sand access roads may be a source of dust during construction due to vehicle movements. Therefore, dust suppression measures should be implemented along these roads. 8.4. Night time works, under flash lights should not be allowed since it may a considerable disturbance to the nocturnal fauna around the tank and

No	Screening Questions	Yes/No	Scale of Impact	Remarks
		8.6. No		forest reserve. Night-time work under flashlights should not be allowed since it may cause considerable disturbance to the nocturnal fauna around the tank and forest reserve.
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 Pamburugashinna Reserved Forest is situated at the upper periphery (catchment margin) of the tank. No designated wildlife conservation areas or archaeologically protected areas are present within the defined project impact zone.
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**	Detailed ecological investigation was not done. Given that the tank and its surrounding area are designated as a reserved forest, the presence of wildlife species, including protected ones, is probable. These animals likely utilize the upper periphery of the tank for water and the surrounding forest for roaming. However, the bund is protected using an electric fence.  Both site observations and accounts from local farmers confirm that elephants roam in the area.
11	Will the proposed project activities cause negative effects on wildlife habitats,	**yes**	**Substantial Risk**	Based on the preliminary environmental screening, direct negative impacts on wildlife populations and habitats are not anticipated. The rehabilitation

No	Screening Questions	Yes/No	Scale of Impact	Remarks
	populations, corridors or movement?			activities are strictly focused on pre-existing small infrastructure, meaning no significant habitat fragmentation or destruction is foreseen. However, indirect disturbances are highly likely during the movement of machinery and vehicles, even during the daytime. Specifically, the movements can disturb ground-dwelling birds, reptiles, their nests, and associated habitats.
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?	**yes**	**Low Risk**	Given that a forest reserve, wild animals are highly likely to utilize the water body for drinking water. But this may mostly possible at the upper periphery of the tank. Hence considerable impact is not expected. However, there is a chance for poaching.
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?	**Yes**	**Low Risk**	The project site is characterized by low level topography and is contiguous with a forest reserve boundary. Owing to its specific location adjacent to a natural area, the site exhibits inhe visual sensitivity. During the construction phase, aesthetic integrity may susceptible to visual blight arising from the presence of stockpiled construction materials, the operation of heavy earth-moving equipment, and fugitive dust emissions. These factors introduce potential visual pollution that could temporarily detract from the surrounding landscape quality. However, it is assessed that these aesthetic impacts are transient in duration and are not anticipated to constitute a major or critical negative effect.
16	Any invasive fauna or flora presents in the tank or surrounding area?	**Yes**	**Substantial Risk**	Different kinds of aquatic invasive plants were found in the water retention area. Only few plants of Lantana (*Lantana camara*) observed immediate downstream of the tank bund.

4. Impact Matrix Code

Table 3: 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; o Sub-projects that involve significant conversion or degradation of critical natural habitats such as sensitive ecosystems (e.g., wetlands, primary forests, protected areas). o The effects extend beyond the project site, potentially impacting entire regions or even neighbouring provinces. o The risks of the sub project are novel, complex, or the project involves specialized or hazardous processes that are difficult to manage. o Sub projects involving large-scale use of hazardous materials, significant air emissions, or large volumes of untreated industrial waste. o Sub projects that significantly alter major hydrological systems, such as large dams or barrages, which can affect river flow, aquatic biodiversity, and downstream communities. o Sub projects requiring the physical displacement or economic displacement (loss of land, assets, or access to resources) of a large number of people. o Sub projects impact on Indigenous Peoples/Vulnerable Groups o 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). o 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). o 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; o Activities that could lead to invasion or spread of weeds and feral animals or the use of toxic chemicals, intensive use of pesticides. o Activities that could dangerously lead to the exposure of sensitive/critical/vulnerable habitats. o Construction of large new infrastructure within or	Mitigation is feasible and effective, requiring only moderate design-based and/or operational planning. Residual

	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.	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.

5. Screening Decision and Recommendation

The proposed project site is situated adjacent to a public road and margined to a Forest Reserve. Despite the socially and environmentally sensitive context, the planned activities are not anticipated to result in irreversible or significant adverse environmental impacts during either the construction or operational phases. All proposed interventions are standard construction practices for small-scale irrigation tank rehabilitation and, renovation work. Tree removal is not necessary for the proposed interventions.

The environmental impacts arising from the proposed interventions are considered not significant, as they are overwhelmingly short-term, limited to the construction period, and reversible in nature. The project's potential environmental effects are categorically limited, temporary, and primarily confined to the construction phase.

⚠️ Limited Construction Phase Impacts

The limited potential impacts identified are associated primarily with the construction phase and are grouped as follows:

1. Socio-Environmental and Wildlife Risks:
    - Risk of unauthorized entry into the Forest Reserve by project personnel or external individuals.
    - Increased potential for poaching and other illicit activities.
2. Physical Environment Degradation:
    - Soil erosion resulting from proposed earthworks and site preparation.
    - Moderate risk of tank water pollution due to the handling of construction materials (e.g., cement, concrete etc.).
3. Occupational Health and Safety (OHS):
    - Occupational health hazards, particularly the risk of wildlife attacks (e.g., snake bites) during material transport and construction activities.
4. Ecological Risks:
    - Potential for the spreading of invasive plant species.
5. Pollution concerns - Such as accumulation of solid waste and water quality deterioration.
6. High Noise & Vibration levels that can affect nearby residents and wildlife
7. Exposing and damaging of physical and cultural resources.
8. Extraction of soil/earth/sand/gravel from the project site.

✅ Environmental Management and Mitigation

The best practices listed in the Environmental Management Plan (EMP) shall be implemented as practically as possible.

The proposed project can, therefore, be carried out provided the mitigation measures stated in the EMP are fully implemented.

Name: Maheeni S. Singappuli
Title: Senior Environmental Specialist Date: 28.11.2025

Signature: 

6. Environmental Management Plan – Galkadawala Maha Wewa, Gomarankadawala

Table 4: Environmental Management Plan[6] for the proposed activities under **Galkadawala Maha Wewa**.

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	**Socio-Environmental and Wildlife Risks:** ○ Risk of unauthorized entry into the Forest Reserve by project personnel or external individuals. ○ Increased potential for poaching and other illicit activities.	**Site access** **Site clearing** **Earth works** **Construction works** **Material transport**	1.1. 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. 1.2. No one will have access to the forest reserve or adjacent forest patches even in the spill area without permission from the supervisor of the contractor. 1.3. Due consideration should be given to carefully clearing of vegetation avoiding destruction of habitats of fauna. Even nests of birds'. 1.4. No labour camps shall be established under this contract on or around the worksite. 1.5. Drivers of the material transport vehicles shall be instructed to adhere strictly to the following: ▪ Speed limits on public roads and adjacent to the tank area. ▪ Safe driving practices along public roads and when operating near the tank area. ▪ Zero chances shall be kept for wildlife accidents.	---	**Contractor**	**PMU DAD**

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

2	**Physical Environment Degradation:** o Soil erosion resulting from proposed earthworks and site preparation. o Moderate risk of tank water pollution due to the handling of construction materials (e.g., cement, concrete *etc*.).	From the machinery, vehicles, and stores. Cement/concrete works.	2.1. 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. 2.2. Installing and maintaining erosion and sediment control measures such as silt traps to avoid sediment runoff into tank and nearby lands and paddy fields. 2.3. For any activity related to the construction, excessive clearing of ground vegetation, removal of trees shall not be done. 2.4. 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. 2.5. All exposed soil areas shall be stabilized and re-vegetated as soon as possible on completion of works to prevent potential future erosion. 2.6. Fuel or lubricants shall not be store anywhere on the site. 2.7. Store all oil and lubricant containers (including drums, tanks, and static plant equipment like generators) in a larger container. 2.8. Establish designated, covered, and impermeable storage areas for all construction materials, especially cement, aggregates, and chemical additives, far away from the tank margin and drain paths. 2.9. Cement or concrete mixing shall not be done near the tank. Such activities shall be done beyond the tank bund and in the downstream area. 2.10. Prioritize the use of pre-mixed concrete delivered to the site whenever feasible, as this minimizes on-site mixing, spillage, and the storage of raw cement near the water body. 2.11. Concrete mixing must take place in a fully contained area away from the tank, preferably on an impermeable liner or tray to capture all spillages. 2.12. Never discharge cement-laden wastewater (from concrete mixers, tools, or truck washing) directly into the tank or nearby drains. All wash water must be directed to a settlement pond or containment pit to allow cement particles to settle and to neutralize before any controlled disposal. 2.13. Any spills of construction materials, especially cement powder or fresh concrete, must be cleaned up immediately using dry methods (shovelling,	---	**Contractor**	**DAD PMU**

			sweeping) before they can enter the water retention areas. 2.14. Ensure all construction personnel are thoroughly trained on the proper handling of materials, waste disposal procedures, and the specific environmental sensitivity of the tank area.			
3	**Occupational Health and Safety (OHS):** ○ Occupational health hazards, particularly the risk of wildlife attacks (e.g., snake bites) during material transport and construction activities.	During the site access Material transport During the work	Given that the work area is in a sensitive area, the following mitigatory measures must be implemented to ensure the safety of wildlife as well as project workers. 3.1. The Department of Wildlife Conservation (DWC) as well as the regional office of the forest department (FD) shall be consulted before starting work. This includes sharing the project's scope, location, and timeline. 3.2. The electric fence erected along the tank bund, shall not be harmed, disconnected without informing to the DWC. 3.3. The work schedule must be planned and strictly followed based on the DWC's and FD's instructions. (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). 3.4. 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. 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. 3.5. 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. 3.6. 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	**Engineering cost**	**Contractor** **DAD**	**PMU**

			being drawn to the area. 3.7. 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. 3.8. Clean food shall be provided for the workers at all the time. 3.9. 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). 3.10. Establishing labour quarters may not be required under this contract, considering the limited scope of work. If the contractor decides to establish labour quarters or hire premises 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. 3.11. No one shall remain on the site after working hours. 3.10. No worker shall allow walking beyond the tank bund or beyond the spill where the forest or forest patches remain. 3.12. All workers shall be made aware of the possible risks of snake bites, insect attacks, and other wild animal encounters present in the adjacent forest environment. Safety shoes and/or boots shall be provided for all workers and their use is mandatory on the worksite to protect against bites, sharp objects, and other ground hazards.			

			3.13. 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. 3.14. Immediate Hospitalization Protocol: Clear protocols must be established for immediate hospitalization and transport, ensuring rapid access to the necessary medical facilities. 3.15. Appoint a qualified full-time a designated, trained personnel responsible for daily OHS supervision, record-keeping, and enforcement.			
4	**Ecological Risks:** ○ Potential for the spreading of invasive plant species.	**Rehabilitation of tank bund. Receiving earth from the upper margin of tank bed.** **Rip rap for sluice area.** **Material transportation.**	**4**.1. If *Lantana camara* infestation occurs on the bund rehabilitation area, immediate downstream areas and adjacent to the spill area, physically remove plants when they are not at the fruiting. 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. 4.2. If borrow material is sourced **from the tank bed**: The specific area within the tank bed chosen for excavation **must be inspected** prior to and during material removal. If any invasive species or reproductive parts are detected, the material **cannot be used** unless proper drying is implemented, or an alternative borrow source is selected. 4.3. If, Off-Site Borrow Material (Borrow Pits/Quarry Sites) is selected, soil or other material must be brought from properly identified external borrow pits and quarry sites: The external sites must be inspected before material extraction begins. This inspection ensures that no form of invasive plant species (aquatic or terrestrial) is present. Borrow sites should be located as much as possible within a radius of 10 km to the site to minimize transport costs and reduce the risk of introducing species from distant, unfamiliar ecological zones.	**Engineering cost**	**Contractor**	**PMU DAD**

			4.4. Transport vehicles should be inspected upon arrival at the site to ensure no contaminants were picked up *en route*. 4.5. Washing the vehicles should be conducted periodically to prevent carrying any invasive species. 4.6. The site should be inspected periodically to ensure that no new invasive species are established at the site. **4.7.** Termite hills with live colonies may be relocated in the upper periphery of the tank as appropriate without destroying them.			
5	**Pollution concerns** - Such as accumulation of solid waste	Setting up of material storage yards. Stock piling of soil, dredged materials. Removal of surface vegetation. Solid waste from construction staff. Transport of construction material.	5.1. No labour camps shall be allowed under this contract on or around the worksite due to potential risk for elephant attacks. 5.2. 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. 5.3. Reusable waste, such as cement bags, shall be either resold or reused. 5.4. Any hazardous waste must be handled with special care and according to instructions from the local authority. 5.5. 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 TO7 - DAD officer. 5.6. Food waste shall not be discarded into the surrounding environment, as this may attract wildlife and must be removed from the site daily. 5.7. There should be no burning of wastes on site. 5.8. Workforce related solid waste shall be removed from the site on daily basis. Any cleared vegetation that needs to be removed to facilitate bund rehabilitation, 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. 5.9. Cooking shall not be allowed on the site for the workforce. However, if it	**Engineering Cost**	**Contractor**	**DAD PMU**

[7] Technical Offcier

			is essential to make tea/coffee on site the following procedure shall be followed. 5.10. Cooking shall not be allowed on the site**.** However, if it is essential to make tea on the site, the following protocol shall be strictly 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.			

6	High Noise & Vibration levels that can affect nearby residents and wildlife.	Operation of equipment and machinery.	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. 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.	**----**	**Contractor**	**DAD PMU**
7	Exposing and damaging of physical and cultural resources.	Site preparatory work. Excavation for canal rehabilitation and water management/distribution structures Construction.	Upon discovery of physical cultural materials of Archaeological importance during construction work, the following shall be carried out; 7.1. Immediately stop the performing activity and with the approval of the resident engineer delineate the discovered site area. 7.2. 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. 7.3. Through the responsible officer of DAD, notify the responsible authorities, the Department of Archaeology and local authorities within as soon as possible. 7.4. Submit a brief chance find report under supervision of DAD 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. 7.5. Responsible authorities would be in charge of protecting and preserving the site before deciding on the proper procedures to be followed. 7.6. An evaluation of the finding will be performed by the Department of Archaeology who may decide to either remove the Physical Cultural	**Engineering Cost**	**Contractor**	**DAD PMU**

			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. 7.7. 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.			
8	Extraction of soil/earth/sand/gravel from the project site (tank bed) or external sources.	Tank bund rehabilitation works	8.1. The sourcing of sand, soil, or gravel from any designated reserve forest area is strictly prohibited. 8.2. The sourcing or purchasing of any material that originates from other protected areas and/or designated natural areas is also strictly prohibited. 8.3. The contractor is required to ensure that the DAD provides written clearance to use the tank bed as a borrow source. This clearance must explicitly confirm that the chosen area is free from invasive aquatic species. 8.4. Only the exact required amount of earth shall be sourced from the tank bed. The DAD must instruct and specify the maximum excavation depth to prevent damage to the tank bed's natural features. 8.5. All excavated areas, whether in the tank bed or external borrow pits, shall be levelled immediately after material extraction is complete, ensuring no permanent pits or depressions are formed. This prevents standing water or invasive plant establishment, as well as to prevent accidents to wildlife. (If external borrow pits were used, they should be re-vegetated with native species immediately following levelling to stabilize the soil and prevent erosion.)	**Engineering cost**	**Contractor**	**DAD**