REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT

Site Specific Environmental and Social Management Plan

Site No. 43
Sri Gangaramaya Temple – Seetha Eliya
Nuwara Eliya District

October 2022

Prepared for:

ASIAN INFRASTRUCTURE INVESTMENT BANK

Prepared by:

National Building Research Organisation
99/1, Jawatta Rd | Colombo 05
Tel: 011-2588946, 011-2503431, 0112-2500354

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Abbreviations

AIIB	Asian Infrastructure Investment Bank
CEA	Central Environmental Authority
CEB	Ceylon Electricity Board
DFC	Department of Forest Conservation
DS	Divisional Secretary
DWLC	Department of Wild Life Conservation
EH & S	Environmental Health & Social
E&SU of PMU	Environmental & Social Unit of Project Management Unit
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GN	Grama Niladhari
GOSL	Government of Sri Lanka
GSMB	Geological Surveys & Mines Bureau
LHS	Left Hand Side
NBRO	National Building Research Organization
RDA	Road Development Authority
RHS	Right Hand Side
LHS	Left Hand Side
SSE & SMP	Site Specific Environmental and Social Management Plan

1. Introduction

1.1 Project overview

The Government of Sri Lanka has received a loan from the Asian Infrastructure Investment Bank (AIIB) for mitigating/rectifying unstable slopes in high risk areas especially in 11 districts of 06 provinces of the country. The project requires to be implemented in accordance with environmental and social safeguards and mandates of the AIIB and that of Sri Lanka. Considering the nature of project actions and its implementation, an environmental and social management framework (ESMF) has been prepared as required by the AIIB environmental and social safeguard policy.

The purpose of the environmental and social management framework (ESMF) is to provide a guide for application of AIIB safeguards and national environmental and social mandates during the implementation of project actions. The project implementing agency (NBRO) is expected to ensure implementation of environmental and social management plans prepared under the ESMF during all phases of project implementation so that the impacts on the environment and community are minimum.

During the scoping exercise it was revealed that the environmental & social setting, and health & safety conditions are more site specific, and require to be addressed specific to site conditions. Therefore, the ESMF has recommended a site specific environmental and social assessments followed by Site Specific Environmental and Social Management Plans (SSE&SMP) for each site. The SSE&SMP gives planning, design, construction and operation phase environmental, social, and health & safety management measures to be considered in the project Implementation.

This is the site specific environmental and social management plan for **Sri Gangaramaya Temple – Seetha Eliya** landslide mitigation site. This plan has been prepared by an in-depth environmental and social assessment to:

i. Identify sensitive environmental and social elements in the project influence area
ii. Identify significant environmental and social impacts due to project actions
iii. Propose mitigation measures
iv. Decide appropriate environmental and social monitoring requirements specific to this project
v. Study relevant environmental regulations and procedures to be followed during project implementation specific to the site

1.2 Intended users

The document provides an in-depth insight into site specific environmental and social issues associated with the proposed project and the mitigation measures and intend to be used by landslide mitigation design team, the PMU and the contractor in the implementation of ESMP component of the project. The SSE&SMP is published in NBRO website and can be viewed by wide range of interested parties (public, stakeholder organizations) can be utilized by the contractors for the project and will form the basis of site-specific management plans that will be prepared by the contractors as part of their Site Specific Environmental and Social Management Action Plans (SSE & SMP) prior to commencing works.

2. Description of the project and site descriptions

2.1 Name of the project

Rectification of Site No 43, Nuwara Eliya District, **Sri Gangaramaya Temple - Seetha Eliya**

2.2 Location details

The proposed mitigation site falls under Goradihena GN division of Nuwara Eliya DS division in Nuwara Eliya District of Central Province.

GPS references of the site – 6.934595 °N and 80.809726 °E

Elevation – 1775AMSL

Nearest town to the site – The nearest town to the site is Nuwara Eliya, located 7.3 km away from the location.

Accessibility to the location

The site can be accessed via A5 Peradeniya-Balulla-Chenkaladi road. *Refer figure 1 below.*

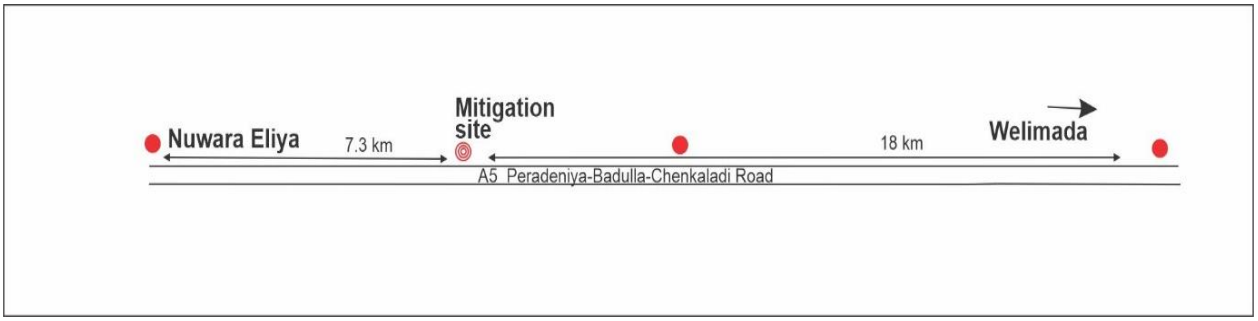


Figure 1:Road map showing the accessibility to the site

2.3 Topography and land ownership

The location where the failure had occurred is on a cut slope located in the Sri Gangarmaramaya, Seetha Eliya. The general topography of the site is a natural slope with an inclination of about 30^0 trending towards Southern direction. The extent of the unstable slope area is about 1000 m^2. The failure had resulted due to development of structures with several cut slopes altering original slope geometry. The upslope area of the temple is Kadapola Forest Reserve which belongs to the Department of Forest Conservation. The temple land belongs to Seetha Eliya Sri Gangarmaramaya temple under Vihara Dewalagam Act of Sri Lanka.

(Ref. Fig 2 for Google image of the proposed landslide mitgation site and sorrounding features and service infrastructure.)

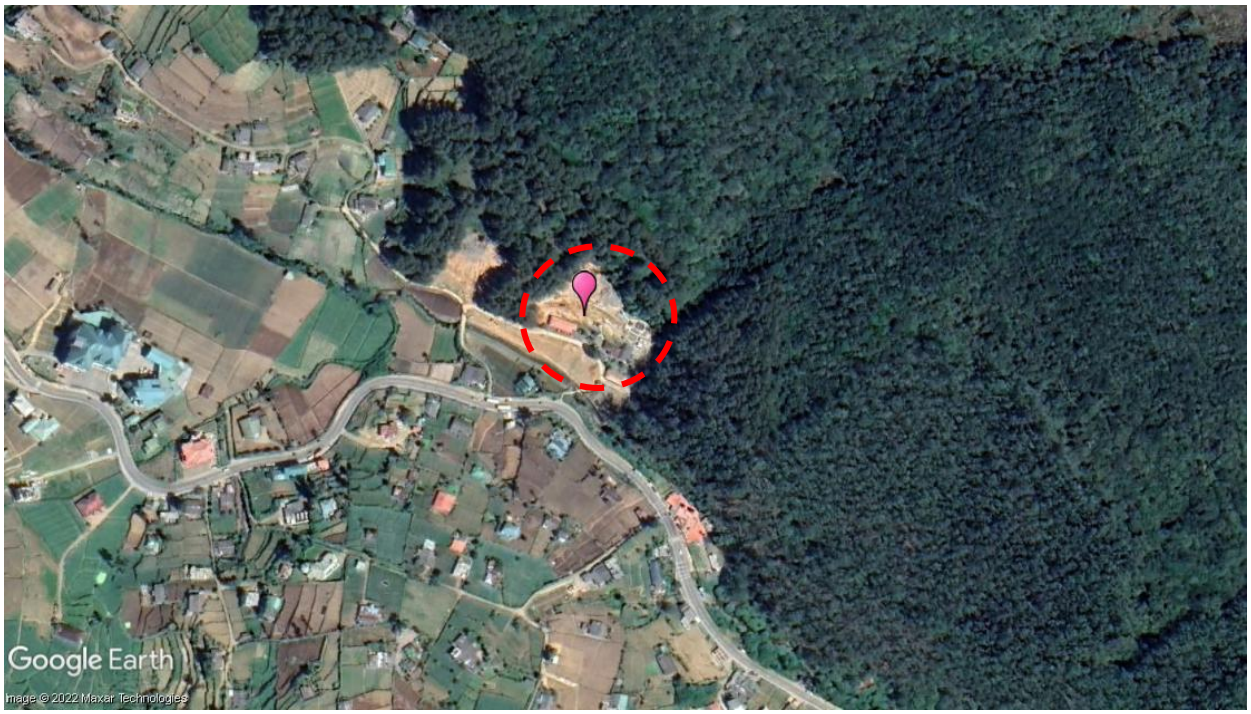


Figure 2: Google image of the proposed landslide mitigation site, the surrounding environmental features and service infrastructure

2.4 Meteorology of the area

Annual average rainfall – 1000 mm – 2500 mm
Annual average temperature – 24^0C – 30 ^{0}C

3. Landslide hazard incident details

3.1 Account of incident

A cut slope failure had occurred in the up slope section at the rear section of Sri Gangarmaramaya temple, Seetha Eliya before 3 years followed by a heavy precipitation event. The dislodged debris mass resulting from the failure had moved down and deposited at the preaching hall. The vertical cut slope has been made to gain the space for building temple facilities. Removal of toe support together with high precipitation have made conditions favorable to initiate cut slope failure while threatening the buildings, devotees and the children and teachers of preschool and Sunday Dhamma school.
Refer Fig 3: cross sections, land use, risk elements and the photographs of special features of the location.

3.2 Effects and consequences of landslide

The cut slope failure had fully damaged the Buddhist preaching hall of the temple. The hermitage located adjacent to the Buddhist preaching hall had been partially damaged due to the debris deposited on it. At the time of the inspection the deposited soil masses on the water tank had been removed.

3.3 Description of any remedial measures already undertaken to reduce the potential risk

A gabion wall had been constructed at the stream bank to protect the failed soil mass from erosional impacts and stream bed alterations. As the gabion wall covers only one side of the unstable slope area, the exposed slope has a risk of failure.

3.4 Evacuations

No any evacuations have been undertaken due to the potential risk.

3.5 Resettlement (progress)

No any resettlement is required for this site.

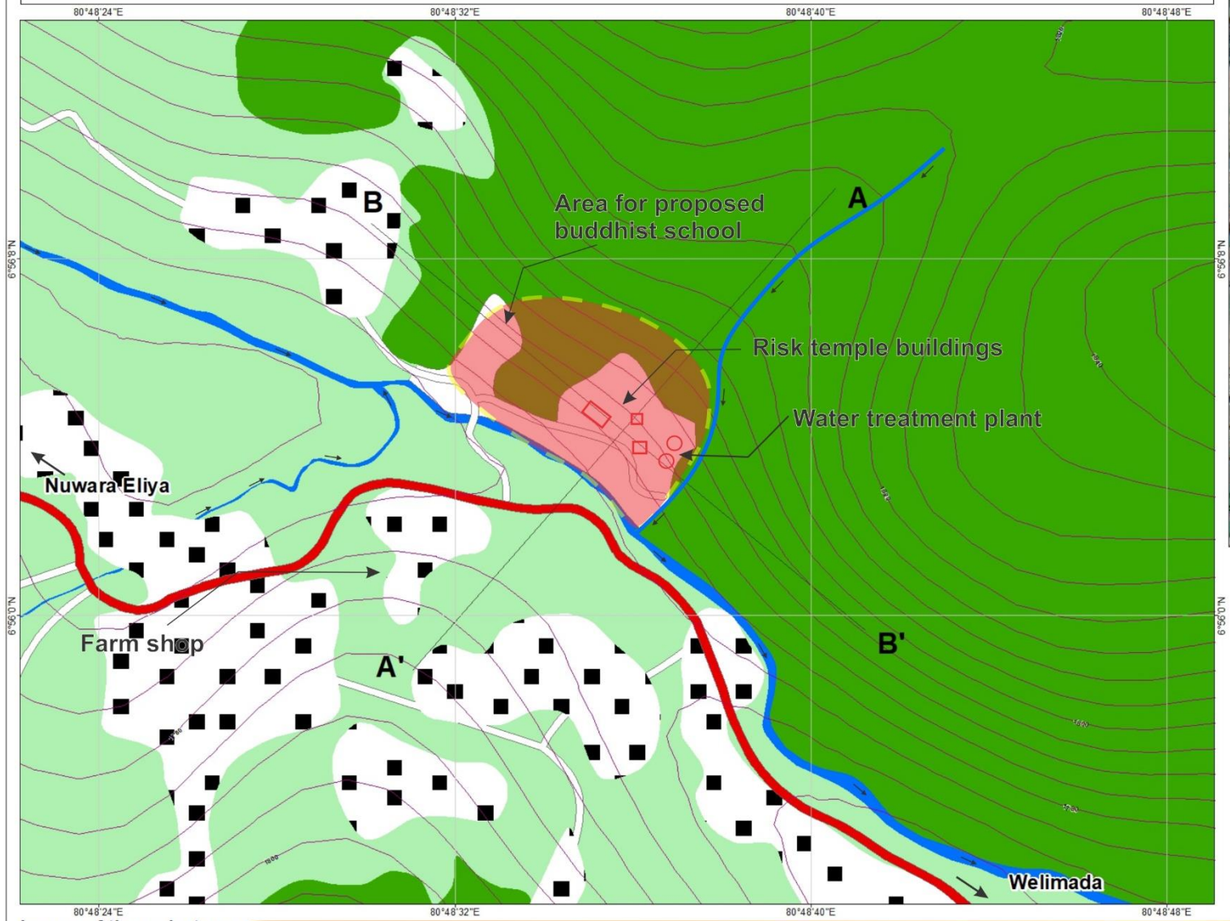
Location : Site no; ..... Seetha Eliya temple

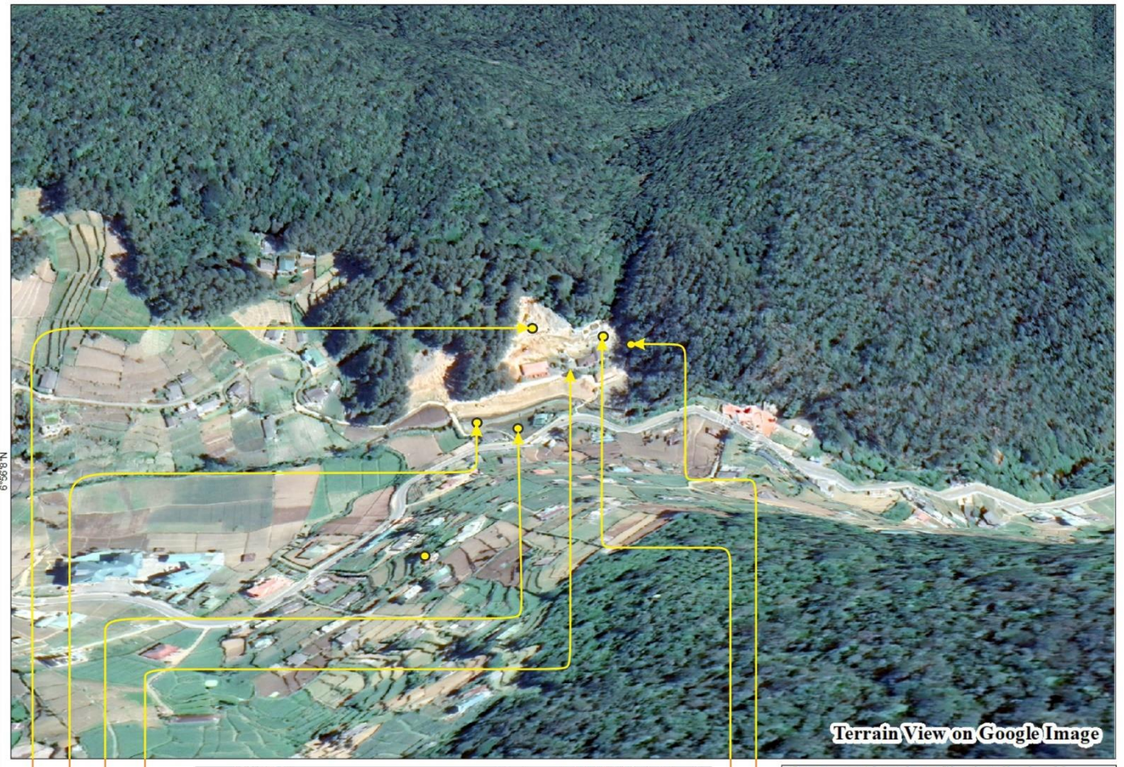
Location details

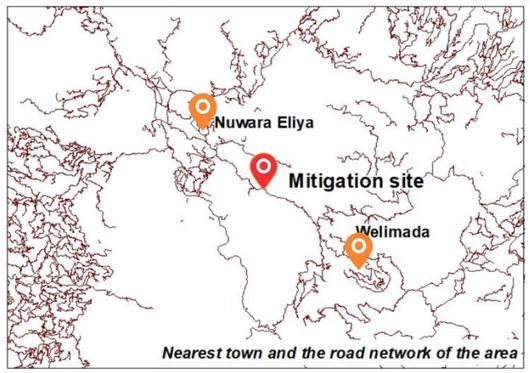
- o GN Division : Goredihela
- o DS Division : Nuwara Eliya
- o District : Nuwara Eliya
- o Province : Central province

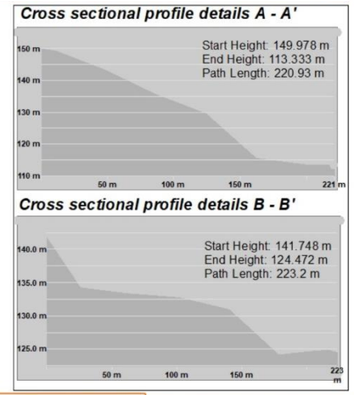
Landslide hazard infomation and terrain features

- o Type of Failure : Cutting failure
- o Potential damages : No potential damage
- o Land Use : Forest / Settlement
- o Land ownership : Temple/Forest department
- o Average area : 1000 Square meters
- o Natural fetures : Stream









Images of the project area

Cut slope failure behind the temples' building | Existing retain wall and stream | Vegetable cultivation lands opposit the temple | Risk temple buildings | Water treatment tanks of the temple | Stream flowing near the unstable area

Legend

- High way class A
- High way class B
- Other road
- Minor roads (Jeep & cart)
- Foot path
- Broard gauge single (tracks)
- Tunnel
- Bridge
- Ferry
- Causeway
- Bridge/ Culvert
- Foot bridge
- Railway station/ railway halt
- Forest/ Shrub
- Risk houses
- Other houses/ Buildings
- Tea
- Potential area
- Settlements
- Nearest Railway station/town
- Cross sections
- Flow path/ Streams flow directions
- Other crops

0 20 40 80 120 160 Meters

Source
This map was prepared using the Google images and field data on Julyy 2022 above Seeth Eliya temple landslide potentail site

REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT
Asian Infrastructure Investment Bank (AIIB)

Prepared By:
Environmental Studies & Services Division (ESSD)
National Building Research Organization
99/, Jawatta Road, Colombo 05
011 2588 945 / 011 2500 354

Figure 3: Google image, cross sections, land use, risk elements and the photographs of special features of the location

4. Description of the area of the landslide/slope failure and areas adjacent to the landslide and current level of risk

4.1 Area of the slope failure

The affected site is at Sri Gangaramaya temple situated in Seetha Eliya village. This temple is a historical temple which has relationships of historical story of Rama - Seetha – Rawana. The infra-structure of the temple includes a shrine room with statues, a small stupa for sacred relics of Lord Buddha, a Bo-tree, hermitage building and Buddhist preaching hall. Tea lands, Forest reservation with Pinus trees is seen in upslope area adding a pleasing scenic view to the temple. A water treatment plant has been established in the upslope area of the temple premises and water supply lines are laying to the downslope from the plant. Water from a spring located in the upslope forest area is conveyed through the unstable slope area and stored in treatment plant of the temple and is used for drinking and other requirements of the temple.

Several cuts have been made to the original slope to obtain space to house these buildings and proposed International Buddhist school which will be able to provide facilities for 250 students to study. Above, the failed slope on the mountain crest is Kadapola Forest Reserve with Pinus plantation belong to the Department of Forest Conservation.

According to the Chief priest of the temple, three priests are residing in the temple including the chief priest. There are about 80 families in the area who are largely connected to the temple. Buddhists pay religious devotions to the temple such as; attending to Poya day religious ceremonies, attending children to Sunday School every week, several other religious functions dedicated to Buddhists such as Katina Pooja (religious event for devoted priests during rainy season) etc. are taking place in this temple. About 60-70 children from surrounding area are attending the Sunday Dhamma School.

A natural stream which is started from the forest reserve is flowing from North East to Southern boundaries of the temple and a another main stream called ‘Seetha Eliya Kadura’ is flowing from West direction to southern boundaries of the temple.

4.2 Areas adjacent to the slope failure

The access to the temple is through the A5 Peradeniya-Balulla-Chenkaladi road. The upslope mountain area of the temple consists of a large Pinus Forest cover. In the upslope forest area animals such as Barking Deer, Wild Boar, The Sri Lankan Sambar and Porcupines are reported. The houses of the area located in different terrains makes a picturesque attraction. Vegetable farms are located the area adjacent to the temple due to the main income source of the surrounding people is vegetable farming.
Refer Fig 3: Google image, cross sections, land use, risk elements and the photographs of special features of the location

4.3 Current level of risk

Sri Gangaramaya temple which is an important historical Buddhist temple in the Seetha Eliya area is under risk due to an unstable slope at the rear area of the temple. If the site is left un-attended further propagation of slope instability leading to failure of the slope may occur. This will result further damage to buildings, religious functions and even life-threatening impacts on devotees. Hazard construction activities of the temple is a potential landslide threat.

5. Description of the works envisaged under the project

The proposed mitigation works will be largely concentrated on unstable slope area. Therefore, retaining toe walls, soil nailing, reshaping, surface and sub-surface drainage improvement will be implemented as the mitigation.

6. Brief description on the surrounding environment with special reference to sensitive elements that may be affected by the project actions

Following sensitive elements will be at risk due to project actions;

i. The Buddhist preaching hall, hermitage, and other buildings of the temple
ii. Important historical worship buildings of the temple

iii. The priest, worshippers, devotees in the temple and the religious events
iv. The children and teachers of Sunday Dhamma school
v. Water treatment plant and water supply lines
vi. Proposed area for the Buddhist school
vii. The upslope forest reserve
viii. Electricity supply lines in the temple
ix. Toilet facilities of the temple
x. Vegetable farms nearby
xi. Two streams flowing blundered to the temple

Ref. Fig.4 Sensitive elements that may be affected by the project actions.

Figure 4a: The Buddhist preaching hall, hermitage, and other buildings of the temple

Figure 4b: Water treatment plant and water supply lines

Figure 4c: Proposed area for the Buddhist school and upslope pinus trees

Figure 4d: Electricity supply lines in the temple

Figure 4e: Toilet facilities of the temple

Figure 4f: Vegetable farms nearby

Figure 4g: Strem flowing from Kandapola forest bordering RHS of the temple

Figure 4h: Stream flowing opposite of the temple (Seetha Eliya Kadura) and existing retaining wall

Figure 4: Sensitive elements that may be affected by the project actions

7. Identification of social and environmental impacts and risks related to the works

Chart below summarizes the positive and negative impacts which are envisaged during project actions and their significance.

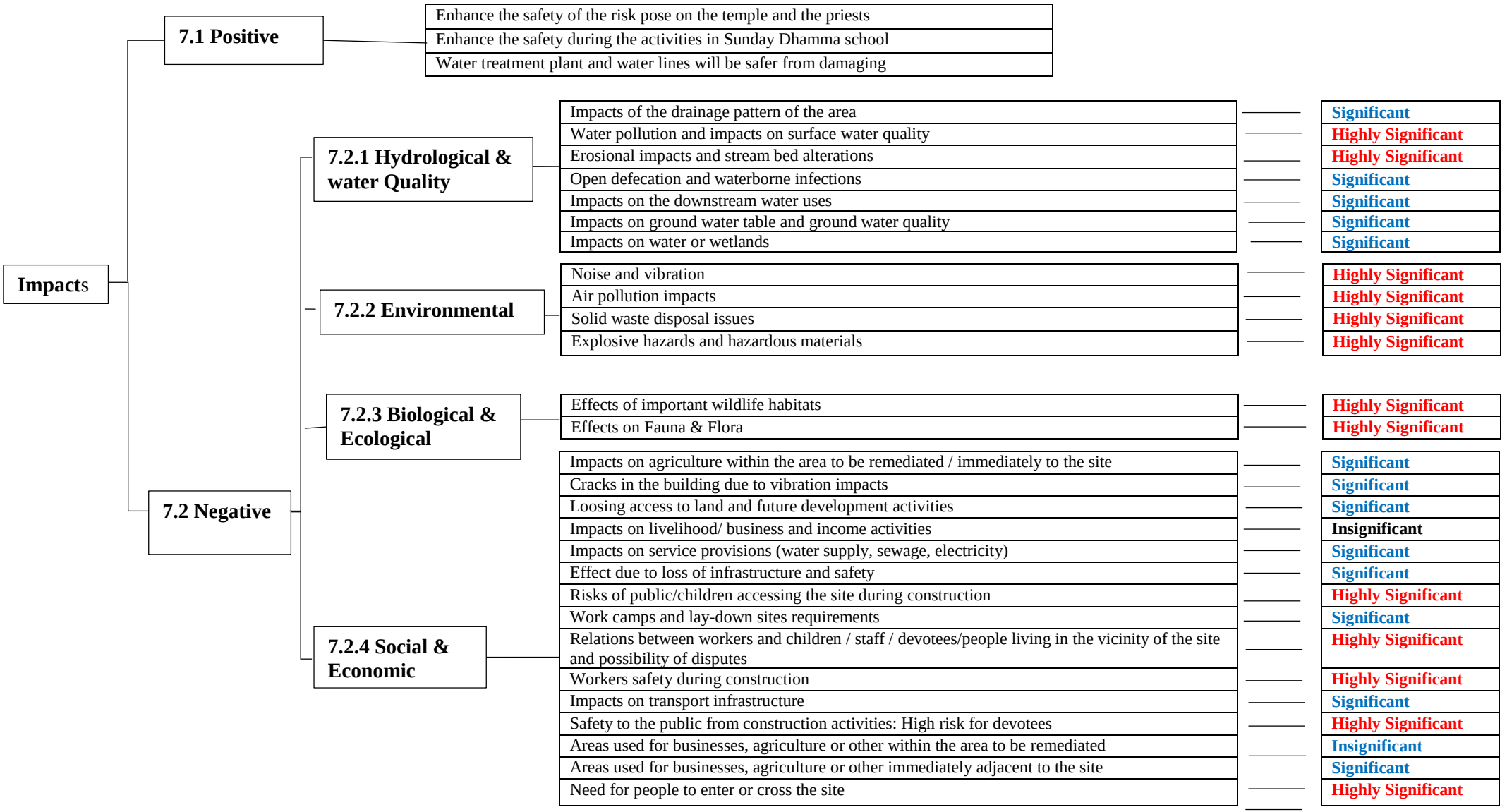


Figure 5: Summary of the impacts which are envisaged during project

7.1 Positive impacts

- The objective of this project is to ensure that further failure of slope adjacent to Sri Gangaramaya, Seetha Eliya is prevented to an acceptable level. The improved slope stability with the proposed structural mitigation will enhance significantly the safety of the priests and the religious places (preaching hall, hermitage, Dhamma school building), the safety of devotees of the temple and the functions currently at risk.
- Also, the children and the teachers of the Sunday Dhamma school will be safe from any future slope failures.
- The water supply lines running through the unstable sloppy area and the water treatment plant in the upslope will be safe from getting damaged and discontinuing supply by future failures.

7.2 Negative impacts

The mitigation works are generally confined to an area which is already unstable and highly potential for slope failures. Therefore, negative impacts are much localized and also limited to construction period.

Table 1: Negative impacts and their level of significance

Impacts during the construction period	Level of Significance
7.2.1 Hydrological and water Quality impacts	
7.2.1.1 Impacts of the drainage pattern of the area Disruption to existing surface and sub-surface drainage pattern in the area is envisaged with the project implementation. The mitigation works in this site will focus on the drainage improvement. Therefore, during rainy season heavy flow of water is expected to be generated flowing to downslope area. The extra amount of water would tend to flow as overland runoff across the temple premises.	**Significant**
7.2.1.2 Water pollution and impacts on surface water quality During the slope excavation, removal of debris can generate high sediment laden runoff there could be a possibility that contaminated runoff may pollute the water within the high seepage in the area. Improper disposal of oils and other harmful substances/contaminants from machineries, leakages from temporary storage tanks, solid waste and wastewater disposal/dumping could occur causing adverse impacts on quality of the water in the downslope streams and also water treatment plant. However, during rainy season, the rainwater running through the disturbed slope tends to pick up sediment, oil and other pollutants generated during construction can contaminate the streams which are flowing in temple boundaries.	**Highly Significant**
7.2.1.3 Erosional impacts and stream bed alterations The project activities will open the slope for surface erosion during the construction phase. The existing surface and sub-surface drainage pattern in the area will be disrupted during construction phase. Therefore, the erosional impacts are significant. Since there are two streams located close proximity to the mitigation area., stream bed alterations impacts also highly significant.	**Highly Significant**
7.2.1.4 Open defecation and waterborne infections As site is located close to stream and forest reservation, possibility of open defecation is high. Faecal contamination of water of the stream or runoff water flow will be expected during construction due to open defecation of the contractor's workforce as the area consists thick vegetation cover.	**Significant**
7.2.1.5 Impacts on the downstream water uses The construction activities will be carried out on slopes with thick soil overburden consisting of both residual and colluvium soils. Therefore, the slope will be prone to erosion during land clearing and land reshaping phase. This may increase the sediment load in stream which at present has clean water, and affect the users at down slope areas. The impact is significant.	**Significant**

7.2.1.6 Impacts on ground water table and ground water quality During the construction period, the hazardous waste from chemical substances, waste water from the construction activities and discharge of waste matter from onsite septic systems would cause adverse impacts on the ground water quality as the water of the downstream may use by the residents. Due to the mitigatory activities carried out in the slope area, the ground water quality will be impacted or there will be a possibility for the ground water table draw down.	**Significant**
7.2.1.7 Impacts on water or wetlands Improper disposal of oils and other harmful substances/contaminants from machineries, leakages from temporary storage tanks, solid waste and wastewater disposal/dumping from workers' sites could occur causing adverse impacts on quality of the water in the streams in the downslope.	**Significant**
7.2.2 Environmental Impacts	
7.2.2.1 Noise and vibration impacts Noise and vibration are expected from construction equipment. Noise impact is significant as the construction is carried in the proximity to the temple. The heavy noise generating activities can disturb the religious activities in Poya days and during large public gatherings such as in delivering sermons, Pooja etc. Also, the day time noise generated from the machinery will disturb the activities of the classes of Sunday Dhamma school and other religious functions. If heavy machinery is operated, the vibration can affect the buildings in the temple. As a result, structural deformations such as cracks and collapse of walls etc. may happen.	**Highly Significant**
7.2.2.2 Air pollution impacts Potential impacts on the air quality will be due to the fugitive dust and the exhaust gases generated in and around the construction site due to vehicular movement and site clearance, storage and handling of construction materials such as sand, cement, etc. The air pollution impacts from the construction is highly significant during dry periods for the priests, devotees, children, teachers and parents associated with the temple.	**Highly Significant**
7.2.2.3 Solid waste disposal issues Haphazard disposal of solid waste; various types of waste such as litter, food waste, construction waste will be generated and may store or dispose on site. The littering and hap hazard storage and disposal of solid waste in and around the temple will create inconveniences to the priest, devotees, students of Sunday Dhamma school. It can block the drains to make breeding grounds for water borne diseases. Waste can pollute the soil, and leave various environmental impacts if proper disposal mechanism is not in place during the construction period.	**Highly Significant**
7.2.2.4 Explosive hazards and hazardous materials Since the affected area has rock boulders, explosives may be used if the rock blasting is envisaged. This may pose risk due to unsafe use. As these operations are to be done on affected slopes the risk of improper use of explosive and accidents from rock fragments are highly significant.	**Highly Significant**
7.2.3 Biological /Ecological Impacts	
7.2.3.1 Effects of important wildlife habitats Kadapola forest reservation area is bounded to the temple and mitigation area with dense growth of Pinus trees and shrubs. Hence the project would have effect on the important wildlife habitats within the forest. Animals like wild boar, monkeys, reptiles species, bird species rabbits, barking deer, the Sri Lankan sambar and porcupines etc are found in that area according to community. The contractor's workforce may engage in hunting and pouching in this area. Hence the project will have a significant effect on the wildlife habitats.	**Highly Significant**

7.2.3.2 Effects on Fauna & Flora Majority of the trees besides the mitigation area, found in the site are not endemic, threatened and identified in the red list of IUCN. During the project implementation there will be requirements of cutting or uprooting trees, some of may be regulated under Felling of Trees (Control) Act. Hence the removal of them may be required approval from the relevant authorities. Valuable timber species may be removed from the system unintentionally/intentionally if proper supervision is not done by the Environmental and Safety Officer with relevant knowledge on these species. Collection of valuable tree specimens, illegal tree felling for timber extraction and intentional and unintentional setting of forest fire may happen in Kadapola forest reservation area by contractor's workforce. The effect is very significant.	**Highly Significant**
7.2.4 Social and Economic Impacts	
7.2.4.1 Impacts on agriculture within the area to be remedied/ immediately to the site There are vegetable farms immediately adjacent to unstable slope area. During the construction period, this land use pattern may be affected by disposal of, spoil and debris or parking machineries and their oil leakages.	**Significant**
7.2.4.2 Cracks in the building due to vibration impacts There are several buildings located in the proximity of the mitigation site. Hermitage, preaching hall and other buildings are located close to the unstable area. During the construction heavy machinery will be used and the vibration can cause cracks in these buildings. Vibration can affect the stability of the nearby buildings.	**Significant**
7.2.4.3 Loosing access to land and future development activities The mitigation activities will be carried out in the temple premises. The project will not result loss to land ownership of temple, neither the project will require removal of this building. However, the priest may require to evacuate the building temporarily during the construction phase as potential risk of failure will be high during the construction phase. There will be no impacts to the temple with regard to future development activities or loss to future uses.	**Significant**
7.2.4.4 Impacts on livelihood/ business and income activities There is no significant impact on livelihood, business or income activities within the mitigation area because the site is located within a temple.	Insignificant
7.2.4.5 Impacts on service provision (water supply, sewage, electricity) The drinking water supply lines (source: natural spring at the forested area) to the temple premises are running through the unstable slope section and a water treatment plant is also established in the unstable slope area. The construction works, moving machinery will certainly damage to the water treatment plant and water supply lines. During dry periods the neighbouring community of the temple use water from these tanks in the temple to fulfil their water requirements. The toilets of the temple and sewage lines are also located in the unstable slope section. Electricity supply lines and their concrete columns are also located in unstable area. Construction activities may impact those service provision lines. The effect is significant.	**Significant**
7.2.4.6 Effect due to loss of infrastructure and safety The access to the proposed site is only through the temple premises. During construction phase, the access road of the temple will be obstructed by frequently moving machinery, loaders, trucks etc. This can obstruct the pedestrian and commuter passage and cause traffic during peak times.	**Significant**
7.2.4.7 Risks of public/children accessing the site during construction Excavation machineries, loaders, trucks etc. will be used in the temple premises where devotees are moving. Also, as there is a Dhamma school conducted with the temple premises, the children and the staff would be under risk. Site may use high voltage power for operation of certain machinery. Construction may use materials such as metal aggregates, steel etc. which can be injurious under improper storage and handling. The children will be attracted to these machineries, materials and may even enter the site without proper awareness of the site staff. Ignorance of entry of children and devotees and careless operation of machinery can cause fatal injuries and accidents to children.	**Highly Significant**

7.2.4.8 Work camps and lay-down site requirements The camps site will be selected in the neighborhood of community. If proper camp management is not in place, it may result several labour issues, social issues with community, conflicts for shared resources with the community, nuisances, and management of waste etc. If temporary camps are built in the close proximity of the site, management of solid waste and sewage will be an issue.	**Significant**
7.2.4.9 Relations between workers and children/ staff/ devotees/ people living in the vicinity of the site and possibility of disputes The construction workers at this site will be from different social backgrounds and from different geographical areas often under poverty. Usually, they are with poor educational and social background. Such communities may have a wide range of social issues to cause dis-stress on the parents of the preschool children and devotees in the temple premises as indicated below. • Cause nuisance to smooth operation of religious activities, Sunday Dhamma school • Unauthorised entry into Dhamma school building • Bulling and harassment to children • Quarrels with children and parents • Distracting children from education • Tempting children and parents towards offensive deals • Informal form of child labour • Use of sanitary facilities of temple by the workforce • Sexual abuses for the children • Tempting children towards narcotics, alcohol, smuggling, and various criminal offenses and a wide range of unsuitable habitual behaviours Although the workers who would engage in such issues will be rare, even few possibilities cannot be ignored.	**Highly Significant**
7.2.4.10 Workers safety during construction The workers may be exposed to risk from falling. Fatal injuries may occur if the slopes fail. The heavy construction machinery may be used in limited work spaces. Risk of hazard from vehicles and construction machineries accidents is highly significant at this site. Contractor may engage under age workers (children) for construction work, which is risky and can results serious accidents and injuries.	**Highly Significant**
7.2.4.11 Safety to the public from construction activities: High risk for devotees As the site is located away from the road, the safety on commutes will be very much low except the fact that some heavy locomotives such as excavators, rollers, water bowsers, trucks and lorries carrying material, water etc. on road may pose risk of accidents as the road is relatively a narrow one. However, the temple is a public place where devotees from different ages and backgrounds with poor knowledge on construction risk participate in various religious activities. Also, the children in the Dhamma school will be at risk as they are attracted to construction activities. The unsafe electrical connections, machinery operations etc. may pose a risk on the public (specially devotees, teachers and children). Hence the impacts on public safety during construction phase is significant.	**Highly Significant**
7.2.4.12 Impacts on transport infrastructure (especially temporary loss of road or rail access, risks of traffic congestion) Machinery and material transportation will interrupt the vehicles, commuters and pedestrians of the road. The traffic due to full/partial road closure may obstruct the smooth flow of vehicles during the week days, school times (in morning, day time and evening). This will cause nuisance to pedestrians and commuters.	**Significant**
7.2.4.13 Areas used for businesses, agriculture or other within the area to be remediated There are no areas used for business, specific agriculture practices or other within the area to be remediated.	Insignificant

7.2.4.14 Areas used for businesses, agriculture or other immediately adjacent to the site There are vegetable plantation lands in the upslope area immediately adjacent to the site owned by the neighboring residents. Project activities may be affected to their agricultural activities if the project management unit will not consider the effects and the mitigation measures.	**Significant**
7.2.4.15 Need for people to enter or cross the site The temple is a public place where devotees from different ages and backgrounds with poor knowledge on construction risk participate in various religious activities. There is no special need for devotees, children and the teachers of the Sunday Dhamma school to enter the site for other purposes. However, unauthorised entry of students and ordinary people may occur due to intentional or unintentional purposes and they may be at risk due to operating machinery, vehicles, electricity, and may be blasting materials.	**Highly Significant**

8. Site Specific Risk Analysis

Table 2: Site specific risk analysis

Risk	Affected group	Risk level
Facing accidents when working close to the slope	Workers	Very high
Transporting materials and machineries	Workers	Very high
Facing accidents during constructions at night time	Workers	Very high
Accidents from the construction activities and materials	Workers / Monks/ Devotees / Students	Very high
Injuries due to rock particles due to explosions/ blasting	Workers/ Monks/ Devotees / Students	Very High
Rock fall from the unstable area	Workers/ Monks/ Devotees / Students	Very High
Work with electrified supply lines	Workers	High
Site Working – Working in poor visibility	Workers	High
Lone Working	Workers	High
Emergency evacuation	Workers/ Monks/ Devotees / Students	Very High
Extreme weather conditions (wind, rain etc.)	Workers	High

9. Significant Environmental and Social Impacts

Environmental, social impacts or risks that will require special attention on the part of NBRO.

9.1 Priority Health and Safety Issues. Specific H&S concerns that require measures that go beyond the standard contractual requirements for contractors

The health and safety issues pertinent to this site is significant as the workers have to work on almost vertical unstable slope with a risk of slope collapse. The health and safety issues of workers safety is highly significant at this site. Such common E & HS issues have been discussed in the **ESMF**. Worker safety requirement in the construction site is more detailed under 2003 5: Safety equipment and clothing in the section 2003: Working conditions and community health and safety in the Bidding document.

9.2 Child labour & forced labour

Child labor & Forced labor is detailed under 2003.3 under section 2003: Working conditions and community health and safety in the Bidding document.

10. Environmental Social Management Plan (ESMP)

Measures to manage and or mitigate the impacts and risk. Especially the significant impacts and risks identified in sections 7 & 8. This section will include the specific recommendations and requirements of the ESMP for design stage, construction phase and maintenance operation phase.

10.1 Resettlement action plan

There is no project-based resettlement in this site. There are occupied temple buildings in the hazard zone continue living in the same location. These buildings may have some impacts in the form of structural damage during the project actions due to ground vibration induced by heavy machinery operation. (The scheme of compensation, in case of damage to structures due to project should be arranged, (Refer 2002.2.17) utilities and roadside amenities in contracts requirement to ESMP.

10.2 Evacuation of people

There are occupied temple buildings located in the downslope area of the affected slope. As there can be a risk of staying in these buildings located very close to the unstable slope during construction phase. It is best advised that they evacuate the buildings. Considering the safety of the children, it is recommended to carry out the construction during vacation or to name a "No Entry Zone" around preschool building during construction phase.

10.3 Procedure for removal of damaged structures, facilities infrastructure (consent from owners to remove the articles)

The damaged old preaching hall which is located in the downslope of the project site may requiring removal. Even if the preaching hall is fully damaged it should not be removed without the full approval of the chief priest of the temple. The chief priest may require removal of the structure at the project cost as it has no future value. But, signing a legally bound agreement between the chief priest of the temple and the project implementing authority allowing no-objection to remove the structures is mandatory. During this process following is recommended as a minimum,

i. Thorough consultation with the chief priest to get the consent
ii. Allow land owner (chief priest) to extract/ or extraction by the contractor on behalf of the land owner any valuable items from the structures
iii. Project bear the cost of removal of the structure

10.4 Requirement for compensation for loss of property /uses due to project actions

It may require to compensate for the losses occurred due to damaging the water supply lines due to project actions. Also, it may require to provide alternative water sources to maintain discontinuous water supply of the temple.

10.5 Public awareness and education- needed for following areas

Programs to inform and educate people in the vicinity about the risks posed by landslide specially the devotees in the area, teachers, parents of Sunday Dhamma school children.

10.6 Design based Environmental/ Social Management considerations

Following environmental and social design considerations are recommended for this depending on its environmental and social relevance.

Table 2: Design stage Environmental & Social considerations

Design feature	Recommended level of consideration for this site
i. Natural resource management and resource optimized designs Project specific designs should be considered to eliminate mass clearing of vegetation and minimum number of removals of grown tree species. Sufficient emphasis should be made to consider conservation of trees if important tree species are found.	High
ii. Site Planning During site planning it is necessary to be cautious on possible re-activation of landslide and generation of debris. Hence vehicle parking sites, material storage and temporary shelters etc. should not be installed in the danger zones of the slides.	High
iii. Habitat connectivity and animal trails If large fractions of vegetation are required to be cleared in ecologically fragile habitats as for permanent structures or for access, or if deep drains etc. are to be made the designs should include habitat connectivity features, animal trails and vegetation strips and etc. even if the impacts are localized.	High
iv. Conservation of water resources If involves extraction of water both surface and sub-surface. The water extracted is in relatively good quality. In a well thought design this extracted water can be conveyed in such a manner that the water can be accessed by wild fauna as well as the temple and the neighboring communities for domestic purposes.	Very High
v. Interruption to water supplies The water lines running in the mitigated slope area supply water to temple premises. The chance the water lines can be affected by the mitigation work is high due to possibility of damaging the water lines during mitigatory activities. Sub surface drains can be introduced for drainage management at strategic points. The extracting water is in high quality and can be used as an alternative supply to satisfy long term water requirements of the temple.	Very High
vi. Aesthetically compatible design considerations The designs in aesthetically sensitive environments should consider structures that blend the hilly landscape with natural environment to improve the aesthetic appearance by keeping the visual pollution to minimum as the proposed mitigatory site is located in a temple premises. Service of landscape architect may be important for the design of suitable mitigation structures.	High
vii. Consideration of green environmental features It is recommended to consider green environmental designs as much as possible in the designs e.g.: use of local vegetation species for erosion control, combination of plants to sustain species diversity in the environment, avoiding inclusion of potentially invasive species & etc.	High
viii. Workers/ commuters and community safety Activation of slide may occur during construction phase and may pose threat to workers, priests of the temple, devotees, teachers and children of Dhamma school. Therefore, design-based safety consideration such as berms, safety nets etc. should be considered.	Very high

ix. Erosion control structures In drainage management, water is extracted and conveyed to nearby stream often through culverts. During rainy season the flow in these drainage structures can be significantly high and this may cause stream bed erosion. Hence the design should adequately consider flow speed breakers to reduce erosive flows entering natural streams. This should be an inclusive part of the design if there are streams and culverts in the proximity of the mitigation site.	High
x. Low post maintenance and operation designs The mitigation should consider passive techniques such as gravity drains for drainage management. Correct pipe diameters, pore diameters and laying angles should be considered to avoid clogging of drains. Low maintenance structures and designs such as designs to withstand erosive forces, sediment trapping systems etch should be considered if drain water is expected be directed to natural streams. The materials used for structures and should be chosen carefully so as to withstand weather conditions with high durability. Designs should specially consider corrosion prevention techniques if steel structures are used.	High

10.7 Mitigation of impacts during the construction phase

10.7.1 Construction contractors' requirement to comply with environmental and social management during the construction phase

Measures to manage and to mitigate the environmental and social impacts are generally common to all landslide mitigation sites. Such impacts are largely attributed to activities in the construction phase. The mitigation of impacts therefore becomes an obligation of construction contractor. NBRO has prepared a comprehensive document on "***contractors' requirement to comply with Environmental and Social Health and Safety (ES & HS) management during the construction phase"*** to be included in construction contractors' bid document. The main sections are summarised below (Table 2) indicating the degree of relevancy for this site. For details ESMP for construction contractors should be referred.

Table 3: Contractor requirement to comply with ES & HS

Reference No. as per construction contractors obligation to ESMP	Item	Relevant to the project
2002. Environmental and Social Monitoring		
2002.2 1)	Storage on site	Highly Relevant (religious place)
2002.2 2)	Noise and Vibration	Highly relevant (religious place)
2002.2 3)	Cracks and damages to the buildings	Highly relevant (old temple buildings)
2002.2 4)	Disposal of waste	Highly Relevant (religious place)
2002.2 5)	Disposal of refuse	Highly Relevant (religious place)
2002.2 6)	Dust control	Highly relevant (religious place, devotees, teachers and children)
2002.2 7)	Transport of construction materials and waste	Highly relevant (narrow road, pedestrians, commuters)
2002.2 8)	Water	Relevant
2002.2 9)	Flora and Fauna	Relevant
2002.2 10)	Physical and cultural resources	Highly Relevant (religious place)
2002.2 11)	Soil Erosion	Relevant
2002.2 12)	Soil Contamination	Relevant
2002.2 13)	Borrowing Earth	Relevant
2002.2 14)	Quarry Operations	Not relevant
2002.2 15)	Maintenance vehicles and machinery	Relevant
2002.2 16)	Disruption to public	Highly relevant (religious place, devotees, teachers and children)
2002.2 17)	Utilities and roadside amenities	Highly relevant (religious place, water supply lines)

2002.2 18)	Visual environment enhancement	Highly Relevant (religious place)
2002-5. Environmental Monitoring	Baseline surveys (air, water, noise, vibration, crack surveys)	Refer site specific monitoring plan
	Surveys during construction (air, water, noise, vibration, crack surveys)	Refer site specific monitoring plan
	Surveys during operation phase	Refer site specific monitoring plan
	Reporting and maintenance of records	Relevant
2003. Working Conditions and Community Health and Safety		
2003.2	Safety organization and communication	Highly relevant (heavy machinery)
2003.3	Child Labor and Forced Labor	Relevant
2003.4	Safety reports and notification of accidents	Highly relevant
2003.5	Safety Equipment and Clothing	Highly relevant
2003.6	Safety inspections	Highly relevant
2003.7	First Aid Facilities	Highly relevant
2003.8	Health and safety information and training	Highly relevant
2003.9	Plant equipment and qualified personnel	Relevant
Relevant: *The section is relevant to the site as a common ESMP applicable to any site* ***Highly relevant:*** *The contractor should pay special emphasis in the preparation of environmental method statements to ensure that the relevant ESMP is implemented specific to the site* ***Possibly relevant:*** *This ESMP will be triggered if the site come across with relevant aspect during project implementation* ***Not relevant:*** *The section may not be relevant to this site under disclosed conditions* ***Optional:*** *require to be implement if needed only* ***Refer site specific monitoring plan****: Contractor is obliged to carry out monitoring as specified in the site specific monitoring plan* ***Reference: Contractors Obligation for implementation of ESMP***		

10.7.2 Site Specific mitigation

Given below is the site specific mitigation measures that the project is expected to implement during the construction period.

Table 4: Site specific ES & HS mitigation measures

Mitigation item	Project implementation phase	Responsibility
i. Minimize erosional impacts during construction It is recommended that mitigation works involved with site clearance, slope reshaping, removal of debris etc. are avoided during rainy season. Therefore, it is imperative that site works in upslope mitigation are carried out in the dry season and avoid such activities on upslope area in the wet season as much as possible. This should be considered in project planning stage. Silt traps should be introduced to cut down sediment laden runoff.	Site preparation & construction	Construction Contractor

ii. Planning project activities As contractor has to operate some mitigation actions within the premises of the Sri Gangaramaya temple, he should carefully prepare a plan for management of construction activities inside the temple. This should include careful selection of material storage as vehicle parking, mixing of concrete, cleaning activities etc. which considering the safety and optimization of space. The contractor should discuss scales of project operations with a time plan and should make the chief priest of the temple adequately aware on the construction plan. Necessary adjustments to the plan should be made after discussing with the chief priest in order to minimize the disruption to activities in the temple with special attention to minimizing nuisance to during religious events etc.	Site preparation & construction	Construction Contractor
iii. Invasive species Should be avoided in using vegetative erosion control structures. Native plants in the local environment should be chosen for vegetative control. The species used for vegetative control measures need approval from the relevant authorities.	Construction	Construction Contractor
iv. No Entry Zone The PMU should make a detailed assessment on possible risk of slope destabilization in the site during construction phase. No entry zones may require to be declared. This should be made adequately documented and communicated to the contractor and the chief priest of the temple. Also mitigate the risk of accidents from moving vehicles operational machinery construction activities, electrical leakages etc. should be given high priority in the health and safety management plan especially considering potential high risk on using the playground. Proper safety measures should be included with warning signs and permanent trained watchmen. Sign boards indicating slope instability risk are strongly recommended at this site.	Construction	E & S Unit of PMU contractor
v. Noise and vibration control The heavy noise generating activities should be discontinued during Poya days and during large public gatherings such as in delivering sermons, Pooja etc**.** The chief priest should be made adequately aware of planned heavy construction activities before execution Vibration generating activities should be done within the prescribed limits to avoid damage to structures. Cracks in the buildings should be monitored before, during and after completion of the project. Suitable compensation should be made if damage cracks due to construction work occur in the buildings	Construction	Construction Contractor
vi. Disposal of construction waste. The contractor should pay special attention with respect to disposal of construction waste. Such waste if generated should store properly without getting washed off and dispose according to approved procedures by the PMU. Under any circumstance construction waste should not be released to the temple premises. Contractor should obtain the approval from the Nuwaraeliya Municipal Council for disposal of solid waste at approved locations	Site preparation & construction	Construction Contractor

vii. Dust and aerosol control screens The buildings of the temple are located adjacent to the proposed mitigatory site. Therefore, dust particles generated during the construction period can influence the priests, devotees, teachers and the children of the Dhamma school. Special screens etc. should be used if heavy dust or aerosol generating activities are envisaged.	Site preparation & construction	Construction Contractor
viii. Water for construction Water for construction works should be obtained only from the approved sites.	Construction	Construction Contractor
ix. Managing disputes between construction workers and devotees The PMU should made contractor aware on all potential issues with contractor workforce and devotees that should be properly managed. Following are recommended for contractors workforce i. Proper awareness, education, monitoring and punishing. ii. Define project activity zone iii. The contractor should not use children for any form of project related works (direct/indirect) iv. The heavy machinery operators should be extremely cautious in operation of machinery as possible accidents will be high. v. Full time watchmen should be kept in the risk area to ensure safe movement of heavy machinery and vehicles **Other** i. Discontinue construction work on Poya days and religious festival days of Buddhist ii. The electrical wiring systems and layout should be done with proper safety measures approved by the PMU ensure that accidents mainly to children from electric shocks are prevented iii. Parking and storage areas should be done in approved locations by the PMU iv. Establish a system of vigilance to monitor the behavior of the workforce and the movement and address immediately any dispute that would rise during construction phase v. Ensure strict code of conduct in the worksite is maintained. They include No alcohol, no smoke, indiscipline noisy behavior, the workers should not enter the worship places with untidy unacceptable dresses during construction without a purpose.		
x. Priority Health and Safety Issues As the workers in the site have to work in high risk conditions, it is imperative to implement recommendations given in section 2003 of contractors' obligation on ESMP under "working conditions and community health and safety". These recommendations should be followed carefully in a proper organization and safety monitoring system. i. Additionally, work should be discontinued for sufficient time period during rainy period as working on unstable slopes will be highly risky in the rainy season. ii. A good warning system and fulltime watchmen is highly recommended for this site for both worker and commuter safety.	Construction	Construction Contractor

xi. Interruption to water supply lines and water treatment plant There are several water lines currently running across the unstable slope. They need to be installed properly without being affected during the construction phase. Necessary arrangements should be taken to provide alternative water supply in case of an interruption to water supply. The water treatment plant in the unstable area should be covered with tarpaulin covers during the construction phase. The chief priest of the temple should be consulted during project mobilization to inform the requirement to shift the water lines to a safe location.	Construction	Contractor
xii. Impacts on transport infrastructure (especially temporary loss of road or rail access, risks of traffic congestion) A good traffic control should be implemented in the construction stage. Proper road safety measures should be included with warning signs and permanent trained watchmen, luminous sign boards indicating slope instability risk and road obstruction signs. Night lamps etc. are recommended at this site.	Construction	Construction Contractor
xiii. Safety of the Dhamma school children The chief priest and the head teacher of the Dhamma school should be made adequately aware of possible issues detrimental to children as indicated below i. Expose children towards narcotics, alcohol, sex abuse, smuggling, and various criminal offenses and a wide range of unsuitable habitual behaviours ii. Unauthorised entry into preschool building iii. Bulling and harassment to children iv. Quarrels with children and parents v. Distracting children from education vi. Tempting children and parents towards offensive deals vii. Informal form of child labour The PMU ES unit should engage in meaning full consultation with chief priest regarding above mentioned issues. Each issue should be properly communicated and adequately discussed with the chief priest and the teachers of the Dhamma school. Also, it is advised that PMU request from the chief priest on the following i. Make children and parents aware of the project ii. Possible social issues that will have impact on children iii. Establish a system of vigilance to monitor the behaviour of children with the workforce and the movement of workforce during construction phase iv. Establish a confidential information receive system in the premises to receive any complains pertinent to the project v. Enforce a system to punish or remove troublesome workers The PMU should made contractor aware on all potential issues with contractor workforce and children that should be properly managed. Following are recommended for contractors' workforce i. Proper awareness, education, monitoring and punishing. ii. Define project activity zone beyond which workers cannot enter iii. The contractor should not use children for any form of project related works (direct/indirect)	Construction	Construction Contractor

iv. The heavy machinery operators should be extremely cautious in operation of machinery as possible accidents will be high. v. Full time watchmen should be kept in the risk area to ensure safe movement of heavy machinery and vehicles Other i. Adequate no entry / danger signs and monitoring should be established so that children are not permitted in the project area ii. The electrical wiring systems and layout should be done with proper safety measures approved by the PMU ensure that accidents mainly to children from electric shocks are prevented iii. Parking and storage areas should be done in approved locations by the PMU		
xiv. Working hours The construction activities should be in accordance with chief priest of the temple. The construction activities should be restricted to day time only. Working after 6.p.m. is not recommended for any reason due to safety issues. Adequate no entry / danger signs and monitoring should be established so that public are not permitted in the project area. Noise, vibration and dust generation activities should not be carried out on days of religious activities and on Sundays (day of Sunday Dhamma school is held).	Construction	Construction Contractor
xv. Need for people to enter or cross the site Possible unauthorized access to the site should be avoided by awareness, warning signs and vigilance by the contractor's full time watchmen.	Construction	Construction Contractor
xvi. During construction good housekeeping should be maintained to minimize visual pollution.	Site preparation & construction	Construction Contractor
xvii. Workers code of conduct Possible disputes between the labor force and the devotees of the temple should be prevented by maintaining the agreed code of conduct by the contractor.	Construction	Construction Contractor
xviii. Onsite sanitary facilities for the workers The contractor should prepare temporary sanitary facilities for the workforce within the site, to mitigate open defecation of the workers.	Site preparation & construction	Construction Contractor
xix. Historical/ cultural/religious important findings Whenever chance finds are made during the works, the contractor shall immediately inform to the Project Manager.	Construction	Construction Contractor
xx. Hunting and poaching Hunting and poaching wild animals such as wild boars in the area and collection of valuable forest specimen are prohibited under the fauna protection ordinance and hence such activities should be strictly prohibited.	Construction	Construction Contractor
xxi. Snake bites management and emergency management by accidents Proper emergency management system for snake bites (include awareness on snake bites, safety shoes while at work, first aid on a snake bite, hospitalization and admission to correct hospital where snake bite management facilities are available) should be introduced. Accidents are common in these kinds of sites. Proper emergency management unit for other accidents (first aids facilities, safety items,	Construction	Construction Contractor

hospitalization facilities and transportation facilities) should be maintained for this site.		

10.7.3 Monitoring requirements specific to the site

Following monitoring plan is strongly emphasized during the construction phase specific to this site. In addition to this, monitoring procedure indicated in the contractors' obligation to ESMP should also be implemented by construction contractor. The contractor is expected to indicate in the bid the ESMP procedure to be implemented along with relevant proofs of his competency. The cost for ESMP will require to be indicated as a separate pay item. The environmental and social management method statement is expected to be submitted by the selected construction contractor and to be approved by the Project Management Unit.

Table 5: Environmental and Social monitoring plan; construction phase

Monitoring requirement	**Parameters**	**Frequency**
i. Baseline monitoring	Water quality	Once*
	Pre crack survey for the buildings in the temple	Once*
	Ground vibration	Once*
	Air quality: particulate matter	Once*
	Background noise measurement	Once*
ii. During construction	Water quality	Once*
	Crack survey for the buildings in the temple	If noticeable displacement is observed during construction **
	Ground vibration	During operation of drilling machinery, boring works, or any works that generate ground vibrations*
	Construction noise	Once a month during heavy noise generation times *
	Air quality particulate matter	Once a month *
iii. Vehicular Emission	All machinery/vehicles operational should have the emission control test certificate as applicable - should be checked by the site ES officer of the consultant	
iv. Monitoring agency	* A competent independent monitoring agency with registration of Central Environmental Authority for all parameters except crack surveys **Crack surveys should be conducted by competent agency acceptable to PMU	
v. Reporting requirements	**Water quality (high seepages and open water tanks)** – National Environmental (Ambient water quality) standards, No.1 2019 -The Gazette of the Democratic Socialist Republic of Sri Lanka No. 2148/20, November 05, 2019. **Pre crack survey of the temple premises** -Professional report **Ground vibration**-as per the interim standards on vibration for the Machinery, Construction activities and Vehicular movements, CEA **Background noise measurement** –Extraordinary Gazette No.924.1, May 23,1996, CEA **Air quality particulate matter**- The National Ambient Air Quality standards stipulated under the Extraordinary Gazette, No. 1562/22 August 15, 2008 -Central Environmental Authority of Sri Lanka.	

11. Public and Stakeholder Consultations - the public consultations that have been and/or will be held

11.1 Public Consultations

Chief priest; Rev. Nuwaraeliye Chandima thero of Sri Gangaramaya temple was consulted during site visits. The priest was made aware of the project, the current level of risk, the intended mitigation, the funding mechanism and requirement to use the lands for access the site to move construction machinery

and to carry out mitigation works, project benefits, both negative and positive environmental and social impacts etc.

11.2 Stakeholders involved in the consultations any recommendations or agreements reached in the consultations (Refer annexure II)

Mr. M.K.P Welikannage, the Provincial Director of Central Environmental Authority in Central Province was informed about the mitigation project and he explained the regulatory mechanism related to environmental regulations for the project.

12. Clearances, no objection, consent and approvals required for the implementation of the project

Table 6: Clearances, no objection, consent and approvals

Requirement / Approval / Institution	Relevance to the project
12.1 Project implementation	
Approval from the District Secretariat	The approvals will be required and the proposals need to be presented at the District Coordinating Committee, to which chief minister and stakeholder agencies in the district will also participate. The Officer of PMU will present the project, disclose the project details and various concerns including environmental and social issues will be discussed at this meeting. The issues arrived will be addressed in the ESMP, the decisions and recommendations taken up at this meeting will be considered in the ESMP.
Approval from the planning committee	The approval from the planning committee of the Nuwara Eliya Municipal Council
12.2 Approval from the state lands owners relevant to the project	
Central Environmental Authority	Consent from District Central Environmental Authority is required as Nuwara Eliya District is under the sensitive area under Soil Conservation Act 25 of 1951.
Department of Forest Department of Wildlife Conservation	As there are no forest reservations and wildlife habitats; Department of Forest and Department of Wildlife Conservation approvals are not needed
Geological Surveys and Mines Bureau	Approval will be obtained for for extraction of materials, transportation and disposal of earth, rocks and mineral debris. (if necessary, only).
Nuwara Eliya Municipal Council	Approvals from Nuwara Eliya Municipal Council will be obtained for the disposal of waste and plant litter.
Ceylon Electricity Board	Approvals from regional office of Ceylon Electricity Board will be required for power supply for site operation.
National Plant Quarantine Service	Approval from Additional Director National Plant Quarantine Service Katunayake for Director General of Agriculture under the Plant Protect Act No. 35 of 1999 Plant or seed if needed for bio Project Managed slope mitigation shall be imported into Sri Lanka under the authority and in accordance with the conditions, of a plant importation permit issued.
12.3 Consent/ no objection/ legally bound agreement from the private land ownerships	

Land owner (Sri Gangaramaya temple and Department of Forest Conservation)	Signing a legally bound agreement between the land owners (chief priest of the temple and DFC) and the project implementing authority allowing no-objection to remove the structures, access the land, implement construction works, and engage in long-term maintenance works

The tentative timeline for getting approval is given in the table 7.

Table 7: Tentative timeline for getting approvals

Approvals	Month 1				Month 2			
	W1	W2	W3	W4	W1	W2	W3	W4
Project implementation ***Approval from the District Secretariat*** Submission of application Project briefing Respond to comments Approvals								
Approval from planning committee Submission of application Project briefing Respond to comments Approvals								
Other approvals GSMB Ministry of Defense (Depends on the requirement)								
Consent/ no objection from the land ownership								

13. Grievance redress mechanism for this site

The PMU ES officer is responsible for establishing the grievance redress mechanism for this site for impact communities; priests of the temple, children of Dhamma school and parents and devotees of the temple *(Reference: Environmental and Social Management Framework for recommended procedure for establishment of grievance redress mechanism).*

All complaints regarding social and environmental issues are received either orally/ telephone communication or in writing by the following person/ location.

- GRM box place at the site

- Project Director/ RLVMMP
  Tel : +94 112 559 869
  Fax : +94 112 502 611
  Email : pd.rlvmmp@gmail.com
  Web : rlvmmp.lk

- District Offices/ NBRO or
- Site Offices/ RLVMMP
- Online Grievance Redresses Mechanism System (**https://rlvmmo.lkgrms)**

14. Information disclosure

It is the responsibility of the PMU to disclose the ES information to following agencies and organizations by indicated modes as a minimum as given in the following table.

Table 8: Proposed scheme of information disclosure

Information	Proposed agencies	Mode of information disclosure
i. Project plan (site details, design, implementation arrangements)	District CEA, District Secretariat, Divisional secretary, Other district levels Agencies, NBRO district office, AIIB	Meetings, District coordination committee, submission of relevant report to sign agreements, approvals and consents.
ii. Environmental and Social Management plan	District CEA, AIIB	Meetings, District Coordination Committee, submission of relevant report to sign agreements, approvals and consents
iii. Monitoring reports (baseline and during construction)	District CEA, AIIB and relevant parties as appropriate	Progress meetings, special meetings, submission of relevant reports
iv. Site inspections for environmental conformance workers health and safety	District CEA, Divisional secretary, Police, Grama Niladhari, District Office NBRO, AIIB and relevant parties as appropriate	Written and verbal communications, submission of relevant reports
v. Decisions taken and progress review meetings pertinent to ES matters	District CEA, Divisional secretary, Police, Grama Niladhari, District Office NBRO, AIIB and relevant parties as appropriate	Meetings, submission of relevant reports
vi. Grievance redress mechanism	Relevant parties, AIIB	Meetings, written and verbal communications

Table 9: Level of information gathered through consulting institutions

Date	Institution	Person contacted for information
04/07/2019 @ 10.00 hrs	Central Environmental Authority	Mr. M.K.P Welikannage, Provincial Director, Central Environmental Authority Central Province
12/010/2019 @ 11.00 hrs	Sri Gangaramaya – Seetha Eliya	Rev. Nuwaraeliye Chandima thero Chief priest

Annexure I: Images of the site condition and the consultation

Consultation with chief priest; Rev. Nuwaraeliye Chandima thero of Sri Gangaramaya temple

Consultation with Mr. M.K.P Welikannage, Provincial Director, Central Environmental Authority, Central Province.

Fully damaged preaching hall of the temple

Unstable area with rock boulders

Annexure II: Report on the Stakeholder Consultation: Nuwara Eliya District

Institution	Name and designation of the contact officer	Concerns raised
Central Environmental Authority	Mr. M.K.P Welikannage, Provincial Director, Central Environmental Authority Central Province.	✓ Landslide mitigation projects are not considered as prescribed projects in the Gazette Extra-ordinary No. 772/22 of 24th June 1993 and its subsequent amendments ✓ As the project intends to reduce the risk from landslides for an emergency action, CEA approval is not needed considering the priority of the project ✓ The Basic Information Questionnaire (BIQ) is needed to fill for the project and submit the application ✓ Before project commence request indicating the list of mitigation sites needed to be submitted to CEA and CEA inspects the sites and consent will be given ✓ Under the Soil Conservation Act 25 of 1951 of National Resource Management Centre, Nuwara Eliya District has been gazetted as a sensitive area ✓ If the project is carried out in a sensitive area, even not a prescribed project, the sensitive area will govern the process.

Annexure III: Study team

Name	Designation	Position in the study
SAMS Dissanayake	Senior Scientist/ESSD/NBRO	Senior Environmental Scientist
P Liyanaarachchi	Scientist/ ESSD/NBRO	Environmental scientist
H Kusalasiri	Technical Officer/ESSD/NBRO	GIS/Demographic data /survey support
MPAN Mihindukulasooriya	Technical Officer/ESSD/NBRO	Report Preparation
TGLA Chandrarathna	Technical Officer/ESSD/NBRO	Report Preparation

Annexure IV: List of references

1. Contractor's obligations for Generic Environmental and Social Management Plan- Sri Lanka Landslide Mitigation Project-AIIB
2. Environmental and Social Management Framework-Sri Lanka Landslide Mitigation Project - AIIB
3. Felling Trees (Control) Act by Ministry of Agriculture, Rural Economic Affairs, Livestock Development, Irrigation and Fisheries and Aquatic Resources Development
4. Resettlement Planning Framework- Sri Lanka Landslide Mitigation Project –AIIB