

DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP)
Phase II
(Funded by World Bank)

MANALAR DAM
(PIC: TN12HH0071)

ENVIRONMENT AND SOCIAL DUE DILIGENCE REPORT



SEPTEMBER 2020

**Tamil Nadu Generation and Distribution Corporation
(TANGEDCO), Tamil Nadu**

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ABBREVIATIONS AND ACRONYMS

AIDS	:	Acquired Immunodeficiency Syndrome
CA	:	Conservation Area
CCA	:	Culturable Command Area
COVID	:	Coronavirus Disease
CWC	:	Central Water Commission
DRIP	:	Dam Rehabilitation and Improvement Project
DSRP	:	Dam Safety Review Panel
E&S	:	Environment & Social
EAP	:	Emergency Action Plan
ESDD	:	Environmental and Social Due Diligence
ESF	:	Environmental and Social Framework
ESIA	:	Environmental and Social Impact Assessment
ESMF	:	Environment and Social Management Framework
ESMP	:	Environment and Social Management Plan
ESS	:	Environmental and Social Standard
GBV	:	Gender Based Violence
GIS	:	Geographic Information System
GRM	:	Grievance Redressal Mechanism
HIV	:	Human Immunodeficiency Virus
IA	:	Implementation Agency
IPF	:	Investment Project Financing
MCM	:	Million Cubic Meters
OHS	:	Occupational Health & Safety
PA	:	Protected Area
PDO	:	Project Development Objective
PICC	:	Poly Ironite Ceramic Cementitious Coating
PMF	:	Probable Maximum Flood
PPE	:	Personal Protective Equipment
PST	:	Project Screening Template
RET	:	Rare Endangered and Threatened
SC	:	Scheduled Castes
SCADA	:	Supervisory Control and Data Acquisition
SEA	:	Sexual Exploitation and Abuse
SEAH	:	Sexual Exploitation Abuse and Harassment
SEP	:	Stakeholder Engagement Plan
SF	:	Screening Format
SH	:	Sexual Harassment
SPMU	:	State Project Management Unit
ST	:	Scheduled Tribes
WB	:	World Bank
WQ	:	Water Quality

EXECUTIVE SUMMARY

Manalar Dam was constructed during the year 1973 – 78 across Manalar River. This is a masonry gravity dam of 184.50 m length and 40 m height. The Manalar Dam is one among the many dams of Suruliyar Hydro Electric Project System. This dam collects water diverted from Highwavys reservoir, in addition to inflow from its own catchment, and diverts it to Vennirar Dam through a tunnel. It has been proposed to undertake rehabilitation measures (structural, non-structural, instrumentation and basic facility enhancement) under the proposed Dam Rehabilitation and Improvement Project (DRIP II) with a view to increase the safety and to strengthen dam safety management.

The Environment and Social Due Diligence has been conducted for decision-making on the sub-project with a view to identify, evaluate and manage the environment and social risks and impacts in a manner consistent with the World Bank ESF. ESDD has been carried out by studying the sub-project information and proposed interventions, assessing the magnitude of E&S risk and impacts with respect to key baseline data in immediate vicinity area. Stakeholder consultations was conducted on 20/06/2020 in a limited way, keeping in view the Covid19 restrictions. A detailed consultation with communities living downstream/vicinity of the dam, shall be held as soon as situation is conducive for holding such consultations.

Activity wise environment and social screening has been carried out to identify risks and impacts to classify the sub-project based on risk level (low, moderate or substantial and high) and recommend commensurate plans/measures to meet identified risks and impacts.

As per the ESDD exercise, risk/impacts that have been identified relate to Water Quality, Physical Environment, labour and SEAH/GBV. Environment risks of air, water, noise, land use, soil and resource use for repairs to masonry portion of dam like u/s face treatment are Moderate. Similarly, environment and social risk of labour camp and disposal of debris has been identified as moderate. Risk of all other activities has been identified as Low. These risks are low to moderate and localised, short term and temporary in nature which can be managed with generic ESMP and guidelines. OHS is a substantial risk activity and is being treated separately through OHS plan in accordance with WB ESHS guidelines.

Since risks and impacts are low to moderate category, a standard ESMP customised to sub-project will be prepared in accordance with the ESMF. The customised ESMP will address the following:

- Gender Based Violence or SEA/SH related actions (ESS1)
- Labour Management Procedure (ESS2)
- Resource Efficiency and Pollution Prevention (ESS3)
- Community Health and Safety (ESS4)
- Stakeholders Engagement Plan (ESS10)

Overall, the proposed activities within this dam sub-project have low to moderate risks resulting in the overall sub-project to be categorized as Moderate risk category. These risks and impacts can

be effectively mitigated with effective implementation of mitigation plans by SPMU/IA, Contractors and monitoring by EMC, SPMU and CWC.

1.1 PROJECT OVERVIEW

The proposed Dam Rehabilitation and Improvement Project (DRIP II) would complement the suite of ongoing and pipeline operations supporting India's dam safety program. The project development objective (PDO) is to increase the safety of selected dams in participating States and to strengthen dam safety management in India. Project Components include:

Component 1: Rehabilitation and Improvement of Dams and Associated Appurtenances (US\$ 577.14 million);

Component 2: Dam Safety Institutional Strengthening (US\$ 45.74 million);

Component 3: Incidental Revenue Generation for sustainable operation and maintenance of dams (US\$ 26.84 million);

Component 4: Project Management (US\$ 68.13 million).

Component 5: Contingency Emergency Response Component (US\$ 0 million).

The project is likely to be implemented for 300 dams in 18 states across the country. The primary beneficiaries of the project are the communities that live in dam breach flood inundation areas and the communities that depend on water, irrigation and electricity services provided by the dams that could be compromised by poor dam performance or failure. In addition to saving lives, improved dam safety will avoid potential flood damage to houses, farm areas, infrastructure (roads, bridges, other public and private infrastructure) and industrial and commercial facilities. Improved dam safety will also reduce the likelihood of service interruptions due to dam failure as well as potentially improving dam service provision, overall efficiency and storage capacity, including during drought periods.

1.2 SUB-PROJECT DESCRIPTION – MANALAR DAM

Manalar Dam was constructed during the year 1973 – 78 across Manalar River. The dam is 184.50 m long and 40 m high. Dam is located at 42 km from Chinnamanur and 140 km from Madurai. The main source of Suruliyar River is Manalar tributary. The Manalar Dam is one among the many dams of Suruliyar Hydro Electric Project System. This dam collects water diverted from Highwavys reservoir, in addition to inflow from its own catchment, and diverts it to Vennirar Dam through a tunnel.

Water stored in Manalar reservoir is taken to Eravangalar Forebay through Vennirar Dam. Manalar to Vennirar Tunnel Intake is available on the left flank side of dam. The sill level of the tunnel intake gate is at RL 1470.4 m. The water from Eravangalar Forebay Dam is utilized for Power generation of 1x35 MW at Suruliyar Power House.

Salient features of the project area are reported below:

Project Name	MANALAR DAM
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River Basin	MANALAR
River/Stream	MANALAR
District	THENI
Latitude/Longitude	09 ⁰ 36' 29" / 77 ⁰ 20' 45"
Type of Project	Diversion Dam for Power Generation purpose
Gross Command Area (GCA)	NA
Cultivable Command Area (CCA)	NA
Hydro Power Installed Capacity	NA
Average Annual Energy Generation (MU):	NA
Domestic/Municipal/Industrial Water Supply (Annual)	NA
Dam	
Type	Masonry Gravity
Total length of the Main dam	184.50 m
Length of Embankment dam	NA
Length of Masonry/Concrete dam	184.50 m
Top width of Embankment Dam	NA
Top width of Masonry/Concrete Dam	4.5 m
Elevation of top of Embankment Dam	NA
Elevation of top of Masonry/Concrete Dam	1493.50 m
Elevation of top of Upstream Solid Parapet Wall	1494.50 m
Height of Embankment Dam above Lowest River Bed Level	NA
Height of Masonry/Concrete Dam above deepest foundation level	40 m
Lowest River Bed Elevation	1462.00 m
Deepest Foundation Elevation	1453.50 m
Saddle Dam	
Type	Masonry
Length of the Saddle dam	110 m
Top width of Saddle Dam	0.6 m
Elevation of top of Saddle Dam	1493.50 m
Height above deepest foundation level	4.5 m
Spillway	
Type of Spillway	Ogee
Length of Spillway	30 m
Location of Spillway	Central Spillway
Spillway Crest Level	1487.50 m
Number of bays	3
Total Discharging Capacity at MWL	327.30 cumec
Spillway Gate	Vertical Lift type; 8 m width & 4.5 m height
Type of Hoist for Spillway Gates	Duplex chain
Sluice Arrangement	
No. of Sluices & Sill Level (m)	1 No, 1465 m
Size of Sluice	1.525 m width, 2.125 height
Discharging Capacity of Sluice at FRL (cumec)	NA
Reservoir	
Catchment Area at Dam site	22.27 sq km
Maximum Water Level	1492.00 m
Full Reservoir Level	1492.00 m
Minimum Draw Down Level	1470.40 m
Gross Storage Capacity at FRL	13.58 MCM
Live Storage Capacity	12.25 MCM
Reservoir Spread Area at FRL	0.306 sq km

Date of Starting the Construction	August 1973
Date of Completion	28/08/1978
Date of first full impoundment	1978
Original Inflow Design Peak Flood	327.3 cumec
Maximum observed flood peak and date	511 cumec on 02/12/1955
Revised Inflow Design Peak Flood	586 cumec

1.3 PROPOSED INTERVENTIONS/ACTIVITIES AND INTENDED OUTCOMES

The Dam Safety Review Panel (DSRP), constituted for the purpose of inspection of the projects that the TANGEDCO plans to undertake for the repair, rehabilitation and modernization work under World Bank aided DRIP-II & III schemes, made a visit to Manalar Dam on 20/01/2020 for inspection purpose and recommended measure to improve the safety and performance of dam and associated appurtenances in a sustainable manner, and also to strengthen the dam safety institutional set-up.

The objectives of the project are to be achieved through investments for physical and technological improvement activities, managerial upgrading of dam operations, management and maintenance, with accompanying institutional reforms. The project will improve the safety and operational performance of dam and mitigate risks to ensure safety of downstream population and property. The following rehabilitation proposals as described in the PST have been formulated based on DSRP recommendations and these proposals form the basis for preparation of present ESDD report.

BASIC FACILITIES

- Special repairs to Approach road to Dam entrance
- Standby Generators
- Special repairs/constructions/improvements to buildings including electrification and fencing
- Special Repairs to Quarters

REMEDIAL WORKS

Special repairs to masonry portion of Dam

- U/s face treatment using PICC
- Dam pier chipping, plastering & colour washing
- Grouting and Counter weight

Repairs to shutters

- Scour vent bell mouth and trash rack panels repairing

Providing electrification to dam

- Electrification and lighting on the top of the Dam, gallery
- Boat

Earth slip Protection works

Figures 1.1 and 1.2 provide photographs of key infrastructure proposed for rehabilitation works and also major interventions locations.



DSRP team's inspection of Manalar dam



Downstream face of dam (leaching)



Upstream face treatment to be carried out to arrest the dam leaching



Screed concrete has been proposed to rectify the defects



Resident quarters at Highwavys



Exposed reinforcement of concrete counter weight



Calcination deposits from vertical shaft holes and gallery drain



Prevailing condition of the road



The damaged IT AC panel at dam top



The rusting at spillway Deck Bridge



Very old DG set

Figure 1.1: Selected Photographs of Improvement/Intervention area

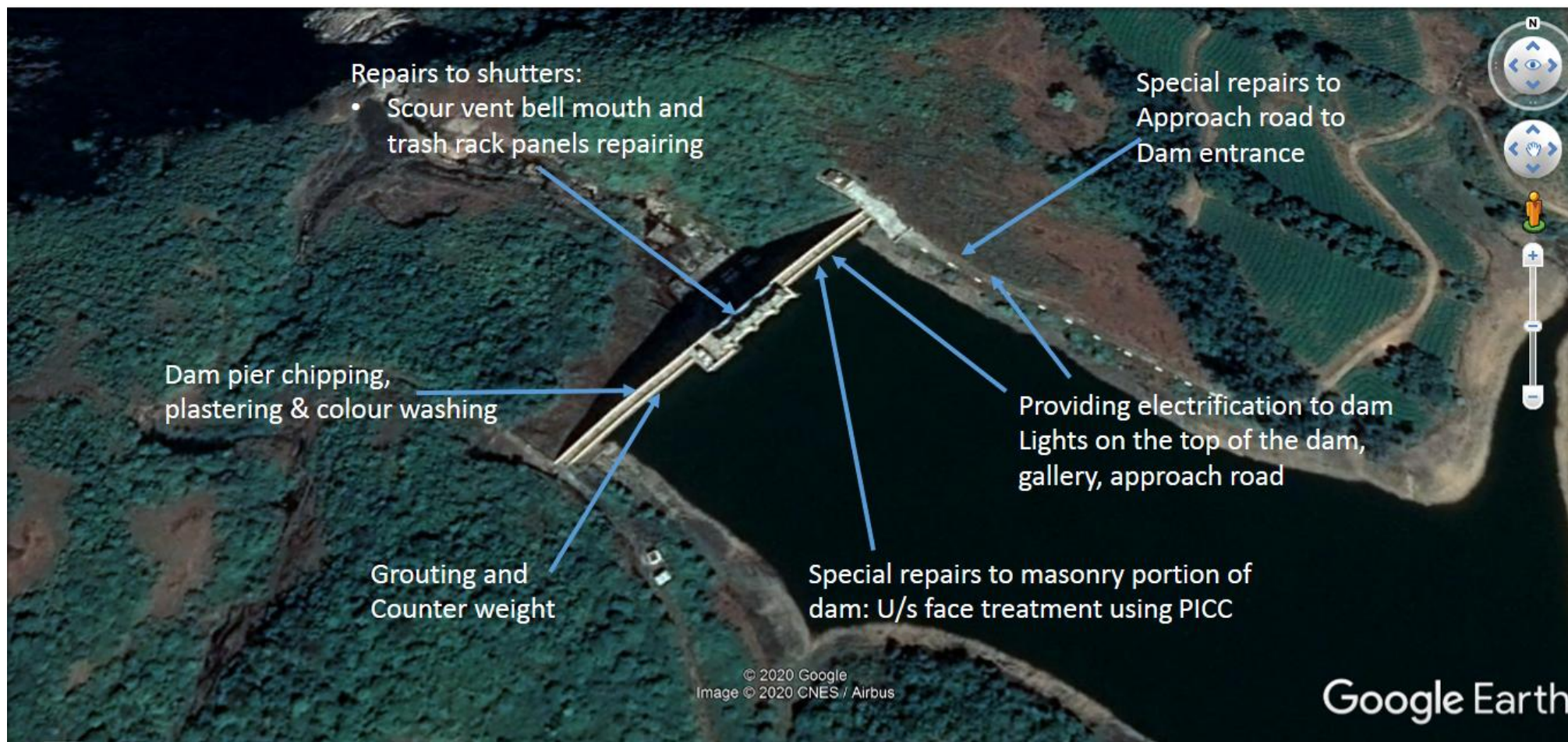


Figure 1.2: Project Area showing major intervention locations

1.4 IMPLEMENTATION ARRANGEMENT AND SCHEDULE

As can be seen from the list of activities proposed under dam rehabilitation project; these activities can be divided into civil works main package, other package and instrumentation. Civil work will be carried out by contractor(s) as these are labour intensive activities and would be completed over a period of 18 months. Dam Authority will hire contractor(s) based on national open competitive procurement using a Request for Bids (RFB) as specified in the World Bank's – Procurement Regulations for IPF Borrowers, July 2016, Revised August 2018 Procurement Regulations), and is open to all Bidders as defined in the Procurement Regulations. Following is the overall implementation and procurement schedule:

a) Overall Phasing of Project Implementation:

Proposed Starting of implementation (MM/DD/YYYY) : 10/2021
Proposed Ending of implementation (MM/DD/YYYY) : 04/2023
Implementation Duration (months) (MM) : 18 months

b) Timeline phasing of implementation:

Sl. No.	Description	From (month/year)	To (month/year)	Status of Procurement Process
1	Main package C M E works	10/2021	04/2023	Procurement process will be initiated after obtaining approval of the PST from World Bank.
2	Other Packages	NIL		
3	Procurement – instrumentation, goods, inspection vehicles	NIL		

1.5 PURPOSE OF ESDD

The overall project (DRIP II) was categorized as **High Risk** as per the internal Environment and Social Risk Classification of the Bank. The Environment and Social Due Diligence has been conducted to use it as a tool for decision-making on the sub-project with the following specific objectives:

- To identify, evaluate and manage the environment and social risks and impacts of the sub-project in a manner consistent with the ESSs;
- To adopt a mitigation hierarchy approach to the project's E&S risks i.e. a) anticipate and avoid risks and impacts; b) minimize or reduce risks and impacts to acceptable levels, if not avoidable; c) once risks and impacts have been minimized or reduced, mitigate; and (d) where significant residual impacts remain, compensate for or offset them, where technically and financially feasible;
- To help identify differentiated impacts on the disadvantaged or vulnerable, if any, and to identify differentiated measures to mitigate such impacts, wherever applicable;
- To assess the relevance and applicability of environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate; identify gaps, if any exist, and

- v. To assess borrower's existing capacity, gaps therein, and identify areas for enhanced capacity towards management of E&S risks.
- vi. Based on the categorization of Environment and Social risks and impacts of the Dam sub-project, to determine whether ESIA is to be carried out using independent third-party agency or a generic ESMP customized to mitigate E&S risks and impacts will suffice.

1.6 APPROACH AND METHODOLOGY OF ESDD

The following approach has been adopted for ESDD:

- i. Study sub-project information, proposed interventions, their magnitude and locations and carry out assessment of each proposed intervention to identify the magnitude of E&S risk and impacts;
- ii. Review relevance and applicability of national and state legal requirements and Bank's ESF policy, standards and directives and preliminary assessment of applicability of legal requirement and ESS framework (2-8)
- iii. Conduct site visit to understand baseline environment and social settings, proposed activities under the sub-project, their location and sensitivity, if any.
- iv. present key baseline data essential for impact assessment in immediate vicinity area of proposed interventions from secondary sources, such as land-use, protected areas in vicinity, ascertain presence of indigenous (schedule tribe)/vulnerable people, etc.
- v. Undertake institutional assessment to identify existing capacities & relevant gaps to manage E&S risks and impacts
- vi. Conduct preliminary stakeholder consultations to help identify potential stakeholders; to provide information on the proposed interventions; to identify issues and concerns; and ascertain appropriate mechanisms for continued engagement
- vii. Carry out activity wise environment and social screening and identify risks and impacts. Classify the sub-project based on risk level (low, moderate or substantial and high) and recommend commensurate plans/measures to meet identified risks and impacts.

Detailed Stakeholder consultations with communities living downstream/vicinity of the dam, could not be held in the current circumstances due to COVID and these shall be held as soon as situation is conducive for holding such consultations.

2.1 POLICY AND LEGAL FRAMEWORK

India has well defined environmental and social regulatory framework. The regulation applicability depends on nature of work and location of work. Broadly legislation can be divided into four categories viz environmental, forests, wildlife conservation and social. The applicability analysis of regulations pertaining to all the above four categories was carried out. The applicability of World Bank ESF comprising, 10 ESSs (ESS1 to ESS10) to the proposed rehabilitation proposals and Standard specific requirements were analysed. Further, a comparison of national environmental and social regulations versus World Bank's ESS has been carried out along with the gap analysis. Applicability of Indian regulations, World Bank's ESS along with comparison and gap analysis is discussed in ESMF.

Central Water Commission, Ministry of Jal Shakti, Government of India has prepared "Operational Procedures for Assessing and Managing Environmental Impacts in Existing Dam Projects" and is under publication as a guiding document for the dam owners to systematically address in advance the environmental safeguard requirements and have discussed in detail all applicable legal requirement. Reference has been drawn from this document as well, while carrying out applicability analysis.

Indian environmental regulations requiring environment clearance is for new dam projects specifically for the purpose of hydropower generation and/or irrigation projects and vary with generation capacity for hydropower projects and culturable command area served by irrigation projects. Forest related clearances become applicable, if new or any modification in any existing project requires diversion of forest land for non-forestry purposes. Wildlife Clearance process gets triggered if the project is in proximity to protected area or activities are proposed within protected or conservation areas (CA).

Therefore, for the proposed dam rehabilitation activities at Manalar dam, regulatory clearances will not be applicable as per Indian regulation. Another applicable regulatory requirement is discussed in ESMF.

2.2 DESCRIPTION OF INSTITUTIONAL FRAMEWORK

The sub-project will be implemented by Tamil Nadu Generation and Distribution Corporation, Government of Tamil Nadu. TANGEDCO being responsible for power generation, transmission and distribution; have a well-established customer complaint system for power consumer; where they can register their complaints 24x7 on dedicated line (1912). It also has a 24x7 Chairman's complaint cell with phone number and whatsapp numbers. In addition, it has established a Consumer Grievance Redressal Forum, where consumers can register complaints online/manually, directly or through a representative to

be resolved within a period of 60 days; with a provision of filing appeal in next 30 days if the complainant is not satisfied with the redressal.

Tamil Nadu Generation and Distribution Corporation Limited do not have in-house expertise to address E&S issues. As per the suggestions of CPMU/CWC, it is proposed to outsource consultancy services of Environmental and Social experts to assist TANGEDCO in resolving E& S issues.

SPMU will designate Nodal Officer(s) (full time in-house engineering staff with E&S expertise) to coordinate and supervise E&S activities. They shall be at the level of Executive Engineer/ Deputy Directors and shall provide commensurate time to comply with E&S related activities. Brief TORs for these Nodal E&S officers is included in ESMF. The SPMU, in case in-house expertise not available, will hire the qualified staffs on need basis to support management of E&S risks including Environmental and Social Experts for ensuring compliance with the Bank's ESF and ESS's and ensuring that these activities shall be implemented as per the procedures.

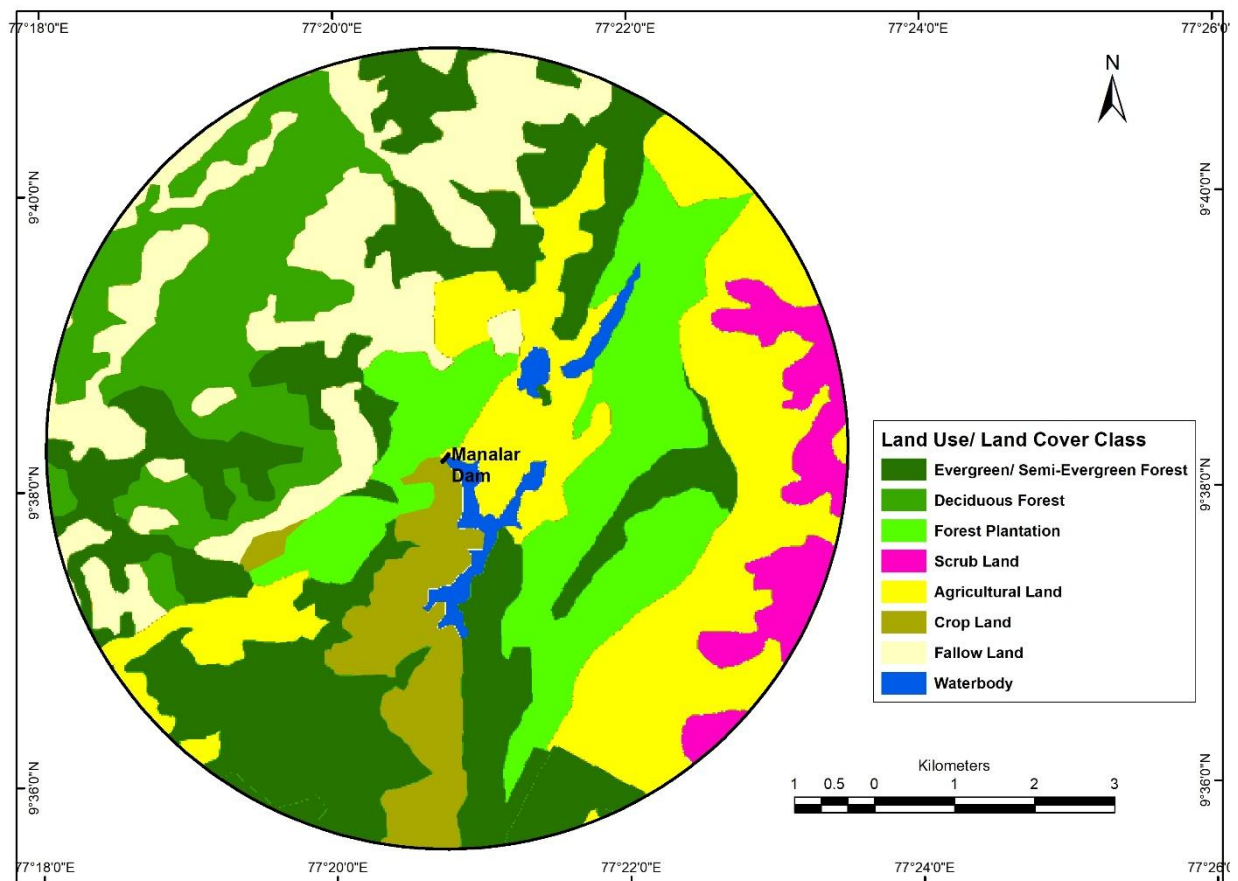
Presently, Grievance Redressal Mechanism has been established with two nodal officers, one at SPMU level and another at Field level. Sexual Harassment complaints can be made to either at dam level or SPMU level. As committed in ESCP, a Grievance Redress Mechanism (GRM) will be established and operated by the contracted agencies to address Project workers workplace concerns. SPMU will have oversight responsibility on the functioning of the GRM.

Assessment of physical, ecological and socio-economic conditions at dam site and immediate surrounding has been carried out based on secondary information and site observations; as discussed below.

3.1 PHYSICAL ENVIRONMENT

Land Use/Land Cover

The project surrounding area's land use and environmental sensitivity was analyzed using GIS techniques. Land use/ land cover map within 5 km radius of dam is presented at **Figure 3.1**. Present land use is mainly agricultural land, evergreen/semi-evergreen forest, deciduous forest, plantation, fallow land and water-bodies. There is no habitation or village falling in 5 km of radius of the Manalar Dam location.



[(Source: Digital data on land use/land cover maps using bhuvan prepared by National Remote Sensing Centre (NRSC) with Institute of Remote Sensing College of Engineering Anna University along with further refinement using Google Earth]

Figure 3.1: Land Use and Land Cover Map of 5 km radius around Dam site

Natural Hazards

Potential of natural hazards such as flooding and earthquake has been assessed.

In terms of Indian Standard IS 11223-1985 criteria, Manalar Dam is classified as a 'Large Dam' and, accordingly, qualifies for PMF (Probable Maximum Flood) as the design flood. The Original Inflow Design Peak Flood was 327.3 cumec. The Revised Inflow Peak Design Flood evaluated by Central Water Commission is 586 cumec, which is 79% higher than the Original Design Flood. The flood capacity of spillway has been re-calculated, and it has been found to be 545.61 cumec for the MWL of 1492.00 m. Hence, the existing surpassing arrangement is capable of disposing flood. Also, MWL of the dam is 1492.00 and TBL of the dam is 1493.50 thus providing a free board is 1.50 m.

Project falls in earthquake zone III, and same was considered at the time of design and there is no need for seismic design review. The Bureau of Indian Standards [IS 1893 (Part I):2002], has grouped the country into four seismic zones, viz. Zone II, III, IV and V. Zone II is the least active and Zone V is the most active.

3.2 PROTECTED AREA

Dam is not in proximity to any protected area (National Park, Wildlife Sanctuary or Conservation Reserve) as declared under Wildlife Protection Act, 1972. Nearest protected area is Srivilliputhur (Giant Squirrel) Wildlife Sanctuary which is 15 km away.

3.3 SOCIAL ENVIRONMENT

Malanar Dam is located in district Theni in Tamil Nadu. There are no settlements in the proximity areas of the project. There are no Schedule V¹ areas in Tamil Nadu.

The Theni district was carved out of Madurai district in 1996 and initially, it was named as Veeran Azhagumuthu district with the headquarters at Theni. Later it has been renamed as Theni district in 1997.

The district is divided into two revenue divisions namely Uthamapalayam and Periyakulam and five talukas/tehsils namely Bodinayakanur, Periyakulam, Theni, Uthamapalayam and Andipatti. There are six (06) municipalities and 22 town panchayats. The district consists of eight (08) community development blocks and 98 revenue villages, out of which 80 villages are inhabited and remaining 18 villages are un-inhabited.

The economy of the district is dependent on agricultural activities & resources. The climate of the district is favourable for cultivation of paddy, sugarcane, cotton, vegetables and spices. Major horticulture crops cultivated in the district area mango, banana, grapes, guava and aonla, tropical vegetables like ladies finger, tomato, brinjal, onion, temperate

¹ **Scheduled Areas** are areas in India with a preponderance of tribal population subject to a special governance mechanism wherein the central government plays a direct role in safeguarding cultural and economic interests of **scheduled** tribes in the **area**.

vegetables like cauliflower, beetroot and knol-khol, spices and condiments like pepper and cardamom and plantation crops like coffee and tea.

Apart from agricultural activities, people of the district are involved in various business or industrial activities like cotton ginning, extraction of oil from various oil seeds, cotton and chilly trading etc. Handloom weaving is the also a major household industry in the district.

The brief demographic characteristic of the district is given in the table below:

No. of Households	3,38,112	Household Size	4
Total Population	12,45,899	Population (0-6 age)	1,19,661
Male	6,25,683	Boys (0-6 age)	61,873
Female	6,20,216	Girls (0-6 age)	57,788
Sex Ratio	991	Sex Ratio (0-6)	934
Population (SC)	2,58,200 (20.72%)	Population (ST)	1,835 (0.15%)
Male	1,29,900	Male	954
Female	1,28,300	Female	881
Literates	8,70,080	Literacy Rate (in %)	77.26
Male	4,79,403	Male	85.03
Female	3,90,677	Female	69.46
No. of Workers	5,91,642 (47.49%)	Cultivators	38,367 (6.48%)
Male	3,68,900 (62.35%)	Agricultural Labours	3,15,161 (53.27%)
Female	2,22,742 (37.65%)	Household Industrial Workers	14,939 (2.53%)
No. of Main Workers	5,30,591 (89.68%)	Other Workers	2,23,175 (37.72%)
No. of Marginal Workers	61,051 (10.32%)		
<i>Source: Census of India, 2011 (District Handbook)</i>			

According to Census of India 2011, the district has total population of 12,45,899 out of which 50.22% are male and 49.78% are female with sex ratio of 991 which is lower than the state sex ratio (996). The population density in the district is 434 persons per sq km.

The district has literacy rate of 77.26% which is lower than that of the state average of 80.09%. The male literacy rate is 85.03% and female literacy rate is 69.46%, creating a gender gap in literacy rate of 15.57% in the district. In the district, the Scheduled Caste and Scheduled Tribe population is 20.72% and 0.15% respectively of the total population. There are very low number of Scheduled Tribe households in the project area and there are no physical interventions planned in the downstream areas. These areas and the ST households will be taken into account during the preparation and implementation of Emergency Action Plan for Malanar Dam.

Work participation rate of the district is about 47.49% and gender gap in work participation rate is 24.70%. About 6.48% of the workers are cultivators and 53.27% are agricultural labourers. About 40.25% of work force is engaged in other than agricultural activities including 2.53% household industrial workers.

3.4 CULTURAL ENVIRONMENT

List of National Monuments in Tamilnadu and list of State Protected monuments in Tamilnadu have been reviewed. There are protected monuments identified by Archaeological Survey of India however none of them are in the vicinity of the project

4.1 SUB-PROJECT SCREENING

The subproject screening is undertaken following a three step screening methodology as described in ESMF. Process of risk /impacts identification is done using screening process considering the proposed interventions at each dam as provided in the Project Screening Template using first screening format (SF-1). Applicable interventions are further classified based on their location i.e. within dam area or outside the dam area. Each activity is reviewed for the applicability under-sub project, location of applicable activity and likely risks and impacts. The SF-1 format is used to ascertain the types of E&S risks for each of the proposed rehabilitation activity e.g. Risk/Impact on Water Quality, Fisheries, Conservation Area, Protected Area, Ecology, Physical Environment, Cultural Environment, Tribal Presence, Private Land/Assets/Encroachers/Squatters, Labor, Migrant Labor and GBV risks – each of these corresponding to the ESS 2-8.

The second format (SF-2) is used to assess the extent of risk/impact intensity for each of the identified E&S risk and is used to categorize the risk level as Low/Moderate/Substantial/ High. Finally, using a third E&S risk summary format (SF-3), the risk categories for all different types of E&S risk and impacts is summarized and the highest of the risk categories is assigned as overall risk category for the given Dam sub-project. Based on the above findings, the ESDD report recommends Risk category of the Dam sub-project – whether it is Low/Moderate/Substantial/High and types of instruments that need to be prepared as part of the ESMP along with the responsibilities and timelines.

Outcome of three stage screening exercise is discussed below.

Step I Screening (using Form SF-1): Sub-Project Component, Construction Support Preparatory Intervention related vs Nature of Risk/Impact

Screening indicated that all project components related activities are limited to within the dam area/premises. Due to nature of these activities, likely impacts will be on physical environment in terms of air pollution, noise pollution and waste generation. None of the proposed structural interventions involve acquisition of private land and/or private assets. These activities in no way cause restriction on access to land or use of resources by local communities and there is no economic displacement envisaged due to the sub-project. Activities interfacing with water bodies – river/reservoir will have risk of spillage of chemicals, construction material, and debris leading to water pollution and impacts on fishes.

Pre-construction and construction stage major auxiliary or preparatory intervention are within dam area as well as beyond dam area. Deployment and haulage of heavy machinery,

setting up of workshop, operation of concrete mixture and heavy pumps will be within dam area. Other activities such as labour camp and debris disposal will be beyond dam area. Activities involving machinery and equipment will have impacts on physical environment. Transportation of material, debris disposal and labour camp are likely to generate pollution and impact on physical environment.

Project will involve project managers and supervisors, contracted workers – these would also include migrant workers as all the required labour will not be fully supplied locally for a number of reasons, such as worker's unavailability and lack of technical skills and capacity. There is no habitation in surrounding areas. Construction contractors are expected to stay at/near dam, set up construction equipment and machinery near work location at pre-determined/approved sites. Influx of skilled migrant labour, albeit few in numbers, for construction works is likely. The labour will stay outside the dam premises; hence risk of SEA/SH is likely.

Non-structural interventions including Emergency Action Plan and Dam Break Analysis have been completed in year 2020 and 2019 respectively. During implementation, project will reach out to downstream population including disadvantaged and vulnerable persons and tribal households. During implementation of EAP, population in vulnerable areas under different release scenario will be identified and contacted through public consultation meetings. Communities will be made aware about the warning systems and do's and don'ts during such scenarios.

Output of this screening is enclosed as **Annexure I**.

Step II Screening (using Form SF-2): All applicable activities identified as having potential risks/impacts that were identified through Step I screening, are further screened for associated sub-activity and evaluated for the extent of risk. Sub-activity's Risk/Impact intensity is further categorised as Low (L), Moderate (M), Substantial (S) or High (H) based on following criteria:

Low	:	Localized, Temporary and Negligible
Moderate	:	Temporary, or short term and reversible under control
Substantial	:	Medium term, covering larger impact zone, partially reversible
High	:	Significant, non-reversible, long term and can only be contained/compensated

Occupational Health and safety: OHS is a substantial risk activity in almost all cases and is not being considered under screening criteria. Occupational health and safety is considered an important requirement of every project irrespective of size and type of the projects. It will be part of Contractor's ESMP.

Analysis of extent of risk/impact for sub-activities resulted in identification of following activities as having Moderate Risks/impacts.

- Special repairs to masonry portion of dam: u/s face treatment
- Labour Camps involved (location within dam premises or outside)

- Major Debris Disposal involved

All other activities are categorized as low risk activities. E&S risks of none of the sub-activities for this sub-project is categorized as either Substantial or High risk. **The outcome of Screening is enclosed as Annexure II.** In case of GBV/SEAH, this site was assessed as Low risk. Based on consideration of all the above, summary of Risk/Impact (as per outcome of SF-2) is summarised for major sub-project activities under **Table 4.1 below.**

Table 4.1: Summary of Identified Risks/Impacts in Form SF-3

Project Activity	Environment Risks						Social Risks				
	Air, water, noise, land use, Soil, Resource use	Pollution downstream and upstream	General Ecology	Protected Area (Wild Life Sanctuaries, National Park and other natural habitat even if not protected)	Other RET species (flora and fauna) outside protected areas	Fish and Aquatic life within dam water body	Land	Tribal	Labour	Cultural heritage	GBV/SEAH
Civil (within Dam Boundary)	M	L	L	None	None	L	L	L	M	None	L
Hydro Mechanical	L	L	L	None	None	L	L	L	M	None	L
Instrumental SCADA, surveillance	L	L	L	None	None	L	L	L	L	None	L
Painting	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Road work	L	L	L	None	None	L	L	L	L	None	L
Safety measures (Siren, Lighting)	L	L	L	None	None	L	L	L	L	None	L
Major Civil Work like Additional Spill Way	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Major Hydraulic Structure (tunnelling)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Major Civil Work extending beyond Dam Area Like training Structure	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Additional activities for Tourism /Solar/Fisheries/ Water recreation enhancement	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Criteria for Risk Evaluation:

Low: Localized, temporary and Negligible

Moderate: temporary, or short term and reversible under control

Substantial: medium term, covering larger impact zone, partially reversible

High: significant, non-reversible, long term and can only be contained/compensated

Occupational Health and safety: OHS is a substantial risk activity in almost all cases and is being treated separately through OHS plan in accordance with WB ESHS guidelines and shall be applicable to all sub-projects. Hence is not being considered under screening criteria.

4.2 STAKEHOLDER CONSULTATION

Stakeholder consultation was made at dam on 20/06/2020; taking all required precaution under Covid19 advisory. It was attended by permanent staff of the generation staff, Dam staffs and local people. In addition, questionnaires were prepared and shared with stakeholders for submission of written response. List of participants is enclosed as **Annexure III** and filled up questionnaires as submitted by stakeholders are added at **Annexure IV**.

Following is the outcome of the stakeholder consultation:

1. All the participants welcomed the proposed interventions relating to dam safety and ensured that our DRIP work will not affect the villages during execution.
2. Agriculture is the main occupation of people in downstream of the dam.
3. Plantations of is the main occupation of people nearer to the dam.
4. There are no pending issues regarding dam construction related resettlement.
5. The participants explicitly mentioned that the dam is their lifeline and strengthening works will help their long-term livelihood and therefore welcomed such information.
6. Participants have expressed that they do not have any grievances and as such no grievances were ever reported from their communities/neighbourhoods.
7. Surplus water from Manalar Dam is passes through dense Suruli reserve forest, Suruli falls and joins with Periyar river. There are no stakeholders on downstream of the dam within 5 Km.
8. Participants have requested necessary action to develop Tourism and fisheries in the dam area.
9. Participants also requested to take necessary action to rehabilitate the Un-occupied TNEB quarters which are now at damaged condition and rented. The income generated through tourism, fisheries and rent may be utilized for dam maintenance.
10. Participants wanted renovation of the approach road to Manalar dam from main road which



at present in very bad condition.

Based on these findings relating to both structural and non-structural interventions, potential stakeholders were categorized as Affected stakeholders, Other interested stakeholders and Disadvantaged & vulnerable stakeholders.

Affected Stakeholders: There are no affected persons who shall be directly or indirectly adversely affected by the proposed interventions.

Other interested stakeholders: In relation to structural interventions, these would be contractors, project management consultants, regulatory bodies/ institutional stakeholders such as revenue, environmental Authorities, etc. In relation to non-structural interventions, these would be communities living downstream including farmers; village heads, community leaders; district administration, police, state disaster management authority, revenue department, electronic and print media, etc. These communities would be key stakeholders requiring to be involved in the preparation and implementation of Emergency Action Plan (EAP).

Disadvantaged and vulnerable persons and groups: Illiterate persons, physically challenged, women, children and elderly would be key stakeholders – requiring special focus and outreach to ensure that they are well informed about the provisions of the EAP.

Communities welcomed such interactions and indicated that they would prefer Dam authorities conduct one such face-to-face meeting, once a month at a convenient location to inform of developments/interventions relevant to them. They welcomed other means of information such as advertisements in the local papers etc, but preferred to have face to face interactions at least once a month.

4.3 DESCRIPTIVE SUMMARY OF RISKS AND IMPACTS FROM ACTIVITIES BASED ON SCREENING

Based on the above screening analysis, potential impacts and risks from the sub-project are summarised below:

Environmental Impacts and Risks

1. Environment risks and impacts, as assessed above, for various project activities under this sub-project are categorised as Low and Moderate due to localised nature of proposed activities i.e. activities remain limited to dam area except for labour camp and muck/debris disposal.
2. Execution of civil and hydro-mechanical work within dam body will generate localised impacts on physical environment and resource use; pose risk of exposure of workers requiring personal protective equipment (PPE) use.
3. Civil work interfaced with water body pose risk of water pollution and impact on fish fauna.
4. Construction waste and muck from repairs to masonry portion of dam like u/s face treatment, approach road etc require careful disposal at pre-identified and approved site to minimise the risk of pollution on this count.

5. Rehabilitation work would require labour to work on various sections of dam involving working at height, working in confined spaces, working on reservoir side, etc; Further, workers will also be exposed to dust and noise and will have to handle chemicals/gases for some of the works; these will lead to occupational health and safety risks.

Social Impacts and Risks

1. As the interventions are within the dam premises and on the dam structure, there shall be no adverse impacts on land and assets due to any sub-component or sub-activities
2. The dam is not located in the Schedule V area. Though there are Scheduled Tribes households in the vicinity, these are mainstreamed into the overall society and do not meet the characteristics outlined in ESS 7. There will be no physical interventions.
3. Influx of migrant labour will be low as these works require only few but very skilled labour. Also, these workers will mostly operate from labour camps within the dam premises/proximity and hence there would be minimal interface with communities and therefore significantly lower SEAH/GBV risks.
4. Waste generation from labour colony can pollute drinking water sources of community, risk is low and can be mitigated by providing adequate sanitation facilities.
5. No impacts are envisaged on cultural heritage as no such sites are identified in project vicinity.
6. Labour related risk would include:
 - Safety issues while at work like injuries/accidents/ fatalities leading to even death, while at work; Occupational health and safety risks due to exposure of workers to unsafe conditions while working at heights, working using lifts, handling of equipment and machinery, exposure to air and noise pollution etc. will be addressed through OHS guidelines.
 - Short term effects due to exposure to dust and noise levels, while at work
 - Long term effects on life due to exposure to chemical /hazardous wastes
 - Inadequate accommodation facilities at work force camp, including inadequate sanitation and health facilities
 - Sexual harassment at work
 - Absence or inadequate or inaccessible emergency response system for rescue of labour/workforce in situations of natural calamities.
 - Health risks of labour relating to HIV/AIDS and other sexually transmitted diseases
 - Non-payment of wages
 - Discrimination in Employment (e.g. abrupt termination of the employment, working conditions, wages or benefits etc.)
 - Unclear terms and conditions of employment
 - Discrimination and denial of equal opportunity in hiring and promotions/incentives/training opportunities
 - Denial for workers' rights to form worker's organizations, etc.
 - Absence of a grievance mechanism for labour to seek redressal of their grievances/issues

5.1 CONCLUSIONS

5.1.1 Risk Classification

As per the ESDD exercise, risk/impacts that have been identified relate to Water Quality, Physical Environment, labour and SEAH/GBV. The summarised environmental and social risks of identified activities with level of risk is presented in previous chapter. Environment risks of air, water, noise, land use, soil and resource use for special repairs to masonry portion of dam like u/s face treatment are Moderate. Similarly, environment and social risk of labour camp and disposal of debris has been identified as moderate. Risk of all other activities has been identified as Low. These risks are low to moderate and localised, short term and temporary in nature which can be managed with generic ESMP and guidelines.

Hence the overall risk of this sub-project Dam is categorized as Moderate. OHS is a substantial risk activity and is being treated separately through OHS plan in accordance with WB ESHS guidelines.

5.1.2 National Legislation and WB ESS Applicability Screening

The applicability analysis of GOI legal and regulatory framework indicates that while, there are various legislation which will have to be followed by the contractor for the protection of environment, occupational health and safety of workers and protection of workers and employment terms. None of Indian legislation is applicable warranting obtaining clearance prior to start of construction/improvement work.

In addition to overarching ESS1, four ESS standards are found relevant to this sub-project as per reasons given in **Table 5.1** below:

Table 5.2: WB ESF Standards applicable to the sub-project

Relevant ESS	Reasons for Applicability of the standard
ESS2: Labour and Working Conditions	Due to engagement of Direct worker, Contracted workers and Community workers (likely for EAP and other non-structural interventions) for rehabilitation work
ESS3: Resource Efficiency, Pollution Prevention and Management	Civil and hydro-mechanical work including resource consumption; requiring protection of physical environment and conservation of resources
ESS 4: Community Health and Safety	Rehabilitation work, although limited to dam complex, can increase community exposure to risk and impacts; directly or indirectly.
ESS 10: Stakeholder Engagement Plan	For engagement of stakeholders in all structural and non-structural measures e.g. implementation of Early flood Warning system, siren systems, broadcasting facilities, Emergency Action Plan etc.

5.2 RECOMMENDATIONS

5.2.1 Mitigation and Management of Risks and Impacts

Since risks and impacts are low to moderate category, a standard ESMP customised to sub-project will be prepared in accordance with the ESMF. It shall cover the following aspects:

- a. SPMU shall customise the standard Environmental and Social Management plan (ESMP) that has been provided in the Environmental and Social Management Framework (ESMF) and make it part of bid document for effective adherence by contractors.
- b. ESMP will provide due measures for labour management and protection of environment quality and resource conservation (during handling of resources) in line with ESF standard ESS2 and ESS3 respectively. Likewise, due attention will be given to Occupational Health and Safety of workers and community in line with the requirements of ESS4 and World Bank Group guidelines on Occupational Health and Safety (OHS). SPMU/IA shall customise the standard ESMP in line with outline provided in the ESMF and ensure its adherence by contractor. The customised ESMP will address the following:
 - Gender Based Violence or SEA/SH related actions (ESS1)
 - Labour Management Procedure (ESS2)
 - Resource Efficiency and Pollution Prevention (ESS3)
 - Community Health and Safety (ESS4)
 - Stakeholders Engagement Plan (ESS10)
- c. Contractor shall submit BOQ as per ESMP of the sub project.

Mitigation plans to meet requirements for relevant Standards with responsibility and stages are given in **Table 5.2** below:

Table 5.3: List of Mitigation Plans with responsibility and timelines

WB-ESS Triggered	Mitigation Instrument	Responsibility	Timelines
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	<ul style="list-style-type: none"> Gender Based Violence or SEA/SH related actions 	SPMU/IA	Before mobilization of contractor
ESS2: Labour and Working Conditions	<ul style="list-style-type: none"> Labour Management Procedure (LMP) including OHS management plan 	SPMU/IA	Before mobilization of contractor
ESS3: Resource Efficiency, Pollution Prevention and Management	<ul style="list-style-type: none"> Pollution Prevention and Environment Quality Management Plan (PPEQMP) 	SPMU/IA	Before mobilization of contractor
ESS 4: Community Health and Safety	<ul style="list-style-type: none"> Community Health and Safety Management Plan (CHSMP) 	SPMU/IA	Before mobilization of contractor
ESS 10: Stakeholder	<ul style="list-style-type: none"> SEP in accordance 	SPMU/IA	By negotiation

WB-ESS Triggered	Mitigation Instrument	Responsibility	Timelines
Engagement Plan	with project SEF		

ESDD and ESMP will be placed on the www.damsafety.in website as well as other accessible locations such as the office of Engineer in Charge at Dam site as well at SPMU for reference and record. These documents would be disclosed/disseminated through other appropriate means like project meetings, workshops etc. Each IA will translate these documents in their local language, if required, and will upload in their respective websites and also make available at other accessible locations.

5.2.2 Institutional Management, Monitoring and Reporting

ESMP will be customized for the sub project by SPMU/IA from standard ESMP included in ESMF and shall be shared with CWC by SPMU for their review/endorsement and approval before including in the bid document.

SPMU/IA will designate Nodal Officer(s) (full time in-house engineering staff with E&S expertise) to coordinate and supervise E&S activities. They shall be at the level of Executive Engineer/ Deputy Directors and shall provide commensurate time to comply with E&S related activities. Brief TORs for these Nodal E&S officers is included in ESMF. The SPMU, in case in-house expertise not available, will hire the qualified staffs on need basis to support management of E&S risks including Environmental and Social Experts for ensuring compliance with the Bank's ESF and ESS's and ensuring that these activities shall be implemented as per the procedures.

SPMU/IA shall advise contractors about applicable legislative requirements and ensure that contractors prepare its own ESMP (C-ESMP) as outlined in ESMP for this sub-project and submit compliance reports to SPMU/IA on quarterly basis. SPMUs will share regular implementation status of ESMPs to CWC and The World Bank in line with ESMF on quarterly basis.

SPMU/IA shall establish and operationalize a grievance mechanism to receive and facilitate resolution of complaints and grievances, from the communities and other stakeholders including implementation partners. GRM works within existing legal and cultural frameworks and shall comprise project level and respective State level redressal mechanisms. Most Project related grievances could be minor and site-specific.

EMC (Engineering and Management Consultant) for the project will have sufficient staff with skills on Environment and Social aspects. Awareness raising and capacity building on the new Environmental and Social Framework (ESF) need to be carried out for the environment and social staff engaged and this will be an area of continued focus, with a view to generate awareness at to dam level. EMC will develop formats for regular supervision and monitoring on E&S issues and undertake site visits/ inspections of the dam sites to monitor for compliance; collate and review QPRs and set up a monitoring and reporting system on E&S issues.

Overall, the proposed activities within this dam sub-project have low to moderate risks resulting in the overall sub-project to be categorized as Moderate risk category. These risks and impacts can be effectively mitigated with effective implementation of mitigation plans by SPMU/IA, Contractors and monitoring by EMC, SPMU and CWC.

Annexure I: Form SF1

Sl. No	Project Component	Applicable (A), Not Applicable (NA)	Environment and Social Risk Associated within dam area (DI), Beyond Dam Area (DE)	Likely Nature of Risk/Impact Water Quality (WQ), Fisheries (F), Conservation Area (CA), Protected Area (PA), Ecological (E), Physical Environment (PE), Cultural (C), Tribal Presence (T), Impact on private land/assets/encroachers/squatters (LA), Labor (L), GBV risks (G), (Write whichever is applicable)
1	2	3	4	5
A	Nature of Project Component and related sub activity Related			
1	Reservoir Desiltation	NA		
2	Major structural changes – Spillway construction (Improving ability to withstand higher floods including additional flood handling facilities as needed.)	NA		
3	Structural strengthening of dams to withstand higher earthquake loads	NA		
4	Structural Improvement/Repair work - upstream of Dam site (interfacing dam reservoir) (like u/s face treatment etc.)	A	DI	WQ, F, E, PE, L, G
5	Structural Improvement/Repair work -Downstream of Dam site (with no interfacing with dam reservoir)	A	DI	PE, L, G
6	Re-sectioning earth dams to safe, stable cross sections	NA		
7	Hydro-mechanical activities with interface with dam reservoir	A	DI	WQ, PE, L, G
8	Hydro-mechanical activities Downstream of Dam site (with no interfacing with dam reservoir)	A	DI	PE, L, G
9	Instrumentation, General lighting and SCADA systems	A	DI	PE, L, G
10	Basic Facilities (like access road improvement, renovation of office, etc)	A	DE	PE, L, G
11	Utility installation like standby generator, or setting up solar power systems	A	DI	PE, L
12	Painting of dam u/s or d/s or both faces	NA		
13	Water recreation activities	NA		
14	Tourism Development	NA		
15	Installation of Solar power/floating solar	NA		
16	List any other component not listed above			
B	Pre-construction and construction stage major auxiliary or preparatory			

Sl. No	Project Component	Applicable (A), Not Applicable (NA)	Environment and Social Risk Associated within dam area (DI), Beyond Dam Area (DE)	Likely Nature of Risk/Impact Water Quality (WQ), Fisheries (F), Conservation Area (CA), Protected Area (PA), Ecological (E), Physical Environment (PE), Cultural (C), Tribal Presence (T), Impact on private land/assets/encroachers/squatters (LA), Labor (L), GBV risks (G), (Write whichever is applicable)
1	2	3	4	5
	intervention			
1	Acquisition (diversion of forests land for non-forest purposes) of forest land	NA		
2	Acquisition of private land Resettlement and Rehabilitation (including physical or economic displacement/impact on livelihood;	NA		
3	Temporary loss of business or Damages to crops or trees or structures outside the ROW during Construction activities by Contractor	NA		
4	Borrowing earth to meet Borrow materials requirement	NA		
5	Sourcing of Quarry materials	NA		
6	Blasting	NA		
7	Setting up Labour Camps (location within dam premises or outside)	A	DE	WQ, PE, L, G
8	Heavy machinery deployment and setting up maintenance workshop	A	DI	PE, L, G
9	Setting up Hot mix plant	NA		
10	Deployment of Concrete mixture and heavy pumps	A	DI	PE, L, G
11	Temporary land acquisition	NA		
12	Need of Tree felling/ vegetation clearance	NA		
13	Disposal of large amount of Debris	A	DE	PE, L, G
14	Transport of large construction material	A	DE	PE, L, G
15	Utility shifting	NA		
16	Discharge of reservoir water (lowering of reservoir water involved)	NA		

Note: Occupational Health and Safety aspects / impacts/ risks are considered important part of any dam project and this risk is separately classified. It shall be managed as per defined OH&S plans in every project irrespective of size and type of project.

Annexure II: Form SF2

Sl. No	Applicable Sub-Project Component/ Construction preparatory Work-related Sub activity (As per SF-1)	Nature of Risk (Conforming to Column 5 of SF-1) and nature of sub activity	Elaborate cause (risk) and its effect (Impact) on environment /social	Risk/Impact intensity for each type of risk/impact Low (L) , Moderate (M), Substantial (S), High (H)
1	2	3	4	5
A	Project Component Related			
1.	Structural Strengthening/Improvement/Repair work -upstream of Dam site			
a	Special repairs to masonry portion of dam: U/s face treatment -	WQ, F, PE, L, G	Air pollution, noise pollution, risk of spillage of wastewater, risk of reservoir water contamination and impact on fishes, generation of construction debris, Labour and GBV risk	M
b	Dam pier chipping, plastering & colour washing	WQ, PE, L, G	Air pollution, noise pollution, water pollution, Labour and GBV risk	L
C	Earth slip protection measures	WQ, PE, L, G	Air pollution, noise pollution, risk of reservoir water contamination due to construction/excavation debris/muck getting into reservoir, generation of, Labour and GBV risk	L
2.	Structural Improvement/Repair work - Downstream of Dam site (with no interfacing with dam reservoir) (like repair of parapet walls, damage spillway crest, downstream training walls, etc.)			
a	Grouting and Counter weight	WQ, L, G	Impacts on water quality, Labour and GBV risk	L
3.	Hydro-Mechanical activities Down - stream of Dam Site (with no interfacing with dam reservoir)			
a	Scour vent bell mouth and trash rack panels repairing	PE, L, G	Generation of waste material from packaging etc, noise pollution, Labour and GBV risk	L
4.	Instrumentation, General lighting and SCADA systems			
a	Electrification and lighting on the top of the Dam, gallery	PE, L, G	Generation of waste material from packaging etc, Labour and GBV risk	L
5	Basic Facilities Improvement			

Sl. No	Applicable Sub-Project Component/ Construction preparatory Work-related Sub activity (As per SF-1)	Nature of Risk (Conforming to Column 5 of SF-1) and nature of sub activity	Elaborate cause (risk) and its effect (Impact) on environment /social	Risk/Impact intensity for each type of risk/impact Low (L) , Moderate (M), Substantial (S), High (H)
1	2	3	4	5
a	Special repairs/constructions/improvements to buildings including electrification and fencing	PE, L, G	Air and noise pollution, Labour and GBV risk	L
B	Special repairs to Approach road to Dam entrance	PE, L, G	Air and noise pollution, Generation of muck and construction debris, Labour and GBV risk	L
c	Special Repairs to Quarters	PE, L, G	Air and noise pollution, Labour and GBV risk	L
d	Standby Generators	PE, L	Air and noise pollution, Labour risk	L
B.	Pre-construction and construction stage major auxiliary or preparatory intervention			
1	Setting up Labour Camps (location within dam premises or outside)	WQ, PE, G	Wastewater generation from domestic activities, waste generation, GBV risk within labour and involving community.	M
2	Heavy machinery deployment and setting up maintenance workshop	PE, L, G	Heavy machinery will be deployed for repair and maintenance of hoists and for other activities - risk due to machine handling, waste, wastewater and air emissions from machines operations, hazardous waste generation from oil waste	L
3	Deployment of concrete mixture and heavy pumps	PE, L, G	Concrete mixture and pumps will be deployed for road repair and other civil works and dewatering - risk due to machine handling, waste generation, wastewater and air emissions from operations, hazardous waste generation from oil waste, Labour and GBV	L

Sl. No	Applicable Sub-Project Component/ Construction preparatory Work-related Sub activity (As per SF-1)	Nature of Risk (Conforming to Column 5 of SF-1) and nature of sub activity	Elaborate cause (risk) and its effect (Impact) on environment /social	Risk/Impact intensity for each type of risk/impact Low (L) , Moderate (M), Substantial (S), High (H)
1	2	3	4	5
			risks	
4	Disposal of large amount of Debris	PE, L, G	Debris will be generated from various repair activities, risk during debris handling, air and noise emissions from debris handling and transportation, water pollution risk due to debris finding its way to water body, and GBV risk due to labour involvement	M
5	Transport of large construction material	PE, L, G	Material will be transported from various vendors and suppliers to site for civil, hydro-mechanical work and instrumentation, air and noise emissions from transportation, Labour and GBV risk	L

Criteria for Risk Evaluation:

Low: Localized, temporary and Negligible

Moderate: temporary, or short term and reversible under control

Substantial: medium term, covering larger impact zone, partially reversible

High: significant, non- reversible, long term and can only be contained/compensated

Occupational Health and safety: OHS is a substantial risk activity in almost all cases and is being treated separately through OHS plan in accordance with WB ESHS guidelines and shall be applicable to all sub-projects. Hence is not being considered under screening criteria.

Annexure III: Stakeholder's consultation: List of Participants

Sl. No.	Name	Relation with Dam – Staff, contractor, worker, full time/part time, local, NGO.	Mobile Number	Address (at least village name)
1.	Er. S. Anand	Executive Engineer/ Civil/ DRIP/ Periyar Lower Camp	9445442371	Periyar Lower Camp
2.	Er. M. Dharmar	Assistant Executive Engineer /Civil /DRIP/Periyar Lower Camp	9445360728	Periyar Lower Camp
3.	Er. M. Ravikumar	Assistant Executive Engineer /Mech /DRIP/Periyar Lower Camp	9786181279	Periyar Lower Camp
4.	Er. S.S.C. Murali Kumar	Assistant Engineer/ Electrical/ DRIP/ Periyar Lower Camp	9445360731	Periyar Lower Camp
5.	Er. R. Dinesh	Assistant Engineer/ Civil/ Tirunelveli Generation circle/ Eravangalar.	8883632931	Eravangalar
6.	Mr. T. Anna Durai	Gauge Reader/ Civil Maintenance/ Eravangalar.	9488476929	Eravangalar
7.	Mr. A. Bava mohideen	Sr. SBA/ Electrical/ Highwavys.	8903257326	Main colony, Highwavys Estate.
8.	Mr. S. Soundhara Rajan	Public from Highwavys Estate.	9488987858	Main colony, Highwavys Estate.
9.	Mr. G.K. Balamurugan	Public from Highwavys Estate.	9443933121	Main colony, Highwavys Estate.
10.	Mr. N. Ingersol	Public from Manalar Estate.	9486374225	Manalar Estate.
11.	Mr. B. Anthony samy	Public from Highwavys Estate.	9489403791	Highwavys Estate, Megamalai.
12.	Mr. K. Senthil	Public from Highwavys Estate.	9442748801	Senthil Hotel, Highwavys Estate.
13.	Mr. Seeralan	Public from Highwavys Estate.	9488179118	Main colony, Highwavys Estate.

Annexure IV: Filled up Questionnaires by Stakeholders

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : T. Anna Durai
ADDRESS : Agave road, Civil maintenance
Eravayalar.
Mobile No : 948847 6929

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	No
2. Are they dependent on dam in any way for their livelihood?	No
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	No
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	No
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	No
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	No
7. Are you aware of local women affected in any way by dam operations?	No
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	yes.

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	NO
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	mobile, through village administration officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	NO.
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	1, generation of power through Sunuliyan powerhouse. 2) partially metay irrigation & drinking water needs of theni & madurai District.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	NO NA yes Address mentioned as above.
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	NO.
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	in Pisciculture may be allowed and entrusted to local village people society to generate income for dam maintenance as well as for local community.

Date: - 20.06.20

3. J. J. J. J. J.
Signature

Place: - Manalar

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : A. Baramahideen
ADDRESS : Sr. SBA / Electrical
Highways
Mobile No : 8903257326

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	No
2. Are they dependent on dam in any way for their livelihood?	No
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	No
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	No
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	No
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	No
7. Are you aware of local women affected in any way by dam operations?	No
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	Yes

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	NO
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	mobile, through village administration officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	No
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	i) Generation of power through Sursuliya powerhouse. ii) partially met out irrigation & drinking water needs of Thari & Medurau District.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	NO NA Yes Address mentioned as above.
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	No
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	i) we welcome the dam work and improvement work in manalar dam. ii) Road work may be taken up. iii) park may be maintained at dam site to develop tourism.


Signature

Date: - 20.06.2020

Place: - moralar

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : S. Sowdhan Rajan
ADDRESS : main colony, Highway's Estate
Chinnamanur,
Thani District.
Mobile No : 9488987858

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	No
2. Are they dependent on dam in any way for their livelihood?	No
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	No
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	No
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	No
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	No
7. Are you aware of local women affected in any way by dam operations?	No
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	yes

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	no
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	mobile, through village - Administrative officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	no
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	1) Generation of power through surplus power house. 2) partially meet irrigation & drinking water needs of Thiruvananthapuram District.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	no NA yes. Address mentioned as above
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	no.
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	(i) Park may be maintained out dam site to develop tourism. (ii) To improve the road to approach dam.

Date: - 20.06.2020

[Signature]
Signature

Place: - Manalor.

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : Cn. V. Balaraman
 ADDRESS : main colony, Highway Estate
Chinnamanur,
Theni District.
 Mobile No : 9443923121

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	NO
2. Are they dependent on dam in any way for their livelihood?	NO
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	NO
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	NO
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	NO
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	NO
7. Are you aware of local women affected in any way by dam operations?	NO
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	Yes.

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	NO
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	mobile, through village - Administration officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	NO
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	1) Generation of power through suruliyar power house. 2) partially met out irrigation & drinking water needs of Thanjavur & Madurai District.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	NO NA yes Address mentioned as above.
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	NO
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	i) we welcome the dam rehabilitation and improvement works in Manalar Dam. ii) road are at very damaged condition road work may be taken up.

Date: - 20.06.2020

Lakshminarayanan
Signature

Place: - Manalar.

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : N. Ingarsal
ADDRESS : Manalar Estate, Highway (PO),
Chinnamanur,
Theni (Dt).
Mobile No : 9486371225

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	No
2. Are they dependent on dam in any way for their livelihood?	No
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	No
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	No
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	No
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	No
7. Are you aware of local women affected in any way by dam operations?	No
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	Yes

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	NO
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	Mobile, through village Administrative officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	NO
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	1) Generation of Power through Suruliyar Power House. 2) partially met our irrigation and drinking water needs of Theni and Madurai dist.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	NO NA yes Address mentioned as above.
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	NO
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	i) pond may be maintained at dam site to develop tourism. ii) Tourism bearing by local community may be allowed for income generation for both dam maintenance and local Community.

Date: - 20.06.2020


Signature

Place: - Manalar

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : B. Anthoni Samy.
 ADDRESS : Megamalai post,
Chinnamanur,
Theni District.
 Mobile No : 9489403791

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	No
2. Are they dependent on dam in any way for their livelihood?	No
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	No
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	No
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	No
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	No
7. Are you aware of local women affected in any way by dam operations?	No
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	Yes

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	No
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	Mobile, through village Administrative Officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	No
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	(i) Generation of Power through Sunkilayan Power House. (ii) Partially met but irrigation and drinking water needs of them & residents.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	No NA Yes Address mentioned as above
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	No.
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	i) We welcome the dam rehabilitation and improvements works in Manalar Dam. ii) Roads are at very damaged condition. road work may be taken up

Date: - 20.06.2020

Place: - Manalar.


Signature

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : K. Senthil
ADDRESS : Senthil hotel,
Highways, (Post),
Cinnamanur, Theni (Dt).
Mobile No : 944 274 8801

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	no
2. Are they dependent on dam in any way for their livelihood?	no
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	no
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	no
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	no
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	no
7. Are you aware of local women affected in any way by dam operations?	no
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	Yes

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	no
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	mobile, through village administrative officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	no
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	1) generation of power through Suryajyoti power house. 2) partially met out irrigation and drinking water needs of the community at
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	no na yes address mentioned as above
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	no.
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	pisciculture may be allowed and entrusted to local village people society to generate income for dam maintenance as well as for local community

Date: - 20.06.20.

Place: - manalar


Signature

MANALAR DAM

STAKEHOLDER CONSULTATION:

Stakeholder consultation has been conducted as part of environmental and social impact assessments. The purpose is to assess their responses in understanding the potential risks and prepare mitigation plan to address their concerns.

Stakeholders:

Stakeholders for the project include:

IA stakeholders - CWC, Dam engineers, District Administration, Forest Department, PWD, Tourism and Rural Development Departments, Labor department and TWAD etc.,

NAME : Sheralan.
ADDRESS : Megamalai Estate . main colony
Theni , dt.
Mobile No : 9488179118

Communities: -

Questions	Responses provided / Observations
1. How many villages are in immediate downstream vicinity?	No
2. Are they dependent on dam in any way for their livelihood?	No
3. Does any of these villages were displaced and rehabilitated during the construction of Manalar Dam. Are there any pending compensation issues?	No
4. Is there any R&R affected person known to you who is currently working with the dam authorities? If so, in what capacity (employee/direct worker/contractor)	No
5. Are you aware of any fishing communities living immediately downstream of dam whose livelihood are directly linked with the fishing activities of this dam?	No
6. Are you aware of fishing working seasons, revenue earning, any access to general public for fishing, any suggestion etc.?	No
7. Are you aware of local women affected in any way by dam operations?	No
8. Are you aware of any early flood warning system for this dam, or any other system wherein downstream communities getting regular update during flood season for any uncontrolled release of water?	yes

9. Are you aware of any dam related incident happened in the past wherein some loss of life encountered? If yes, brief summary may be given	NO
10. If you have to contact the dam authorities; how will you contact, through telephone/mobile/e mail/personally?	mobile, through village Administrative officer.
11. In the past, on any occasion, did you contact dam authorities for any specific reason affecting public in general? If so, how did you contact and how was the response of dam authority?	NO
12. Give your views about Manalar dam, how this dam is helping Country, State, district or local communities in meeting its objectives, any specific concern can also be given?	1, Generation of power through Suruliyar power house. 2, partially met out irrigation & Drinking water needs of Thani and Madurai District.
13. (a) Are you aware of any document named Emergency Action Plan (EAP) of the dam? (b) If yes, do dam authorities conduct any annual mock drill or consultation meeting on dam site and invite all stakeholders to inform about various protocols in place and consequences in case dam fails? (c) In future, during stakeholder's consultation meeting, would you like to be a part of these consultation and mock drill activities to be conducted by dam authorities? (d) If yes, how to contact you, please give the corresponding address along with all details to receive the official communication.	NO NA yes Address mentioned as above.
14. Are you a regular follower of official website of dam authorities as a general public, in case you are a contractor, do you follow various tenders' notices being invited for various maintenance of this dam?	NO
15. Any suggestion to improve overall system by dam authorities in any way, please give in brief?	1, NO obstruction fromas to enecutive DRIP works in manalar dam. 2) Road leading to manalar dam is damaged condition road may be related.

Date: - 20.06.2020

Place: - manalar

R. S. Senthil
Signature