



Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 03/26/2020 | Report No: ESRSA00478



BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
India	SOUTH ASIA	P170873	
Project Name	Second Dam Rehabilitation and Improvement Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Water	Investment Project Financing	4/6/2020	6/24/2020
Borrower(s)	Implementing Agency(ies)		
Ministry of Jal Shakti, Government of India	Government of Rajasthan, Water Resources Department, Government of Karnataka, Water Resource Department, Government of Manipur, Water Resources Department, Bhakra Beas Management Board (BBMB), Government of Madhya Pradesh, Water Resource Department, Government of Maharashtra, Water Resource Department, Government of Chhatisgarh Water Resources Department, Kerala State Electricity Board, Central Water Commission (CWC), Ministry of Jal Shakti, Government of Gujarat, Government of Kerala, Water Resource Department, Government of Tamil Nadu, Water Resource Department, TANGEDCO, Meghalaya Energy Corporation Limited,		

Public Disclosure



Government of Orissa Water Resources Department

Proposed Development Objective(s)

The project development objective (PDO) is to increase the safety of selected dams and to strengthen dam safety management and financing in India.

Financing (in USD Million)	Amount
Total Project Cost	715.00

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]

The proposed Dam Rehabilitation and Improvement Project – 2 (DRIP – 2) will build on the lessons and successes of the first DRIP. The project will finance structural improvements but would break with the prevailing ‘build-neglect-rebuild’ approach by giving greater emphasis to establishing sustainable mechanisms for financing regular O&M and periodic dam rehabilitation, enhancing State capabilities to manage these critical assets through institutional reform and strengthening, and introducing risk-based dam management. The project would address dam safety concerns in the participating States (including institutional reforms and modernization, instrumentation, etc.), although dam rehabilitation per se will focus on a selection of dams within the States.

D. Environmental and Social Overview

D.1. Project location(s) and salient characteristics relevant to the ES assessment [geographic, environmental, social] The project shall cover 18 states and around 300 dams , located in mountainous, flat and coastal terrain area of India. Most of mountainous areas of the country are located in seismologically high active zone and are rich in biodiversity. Similarly, coastal areas are also rich in terrestrial and aquatic ecology. Plain areas have large habitation, forests areas and are prone to floods in many areas. Impacts from project activities are anticipated on water resources, air quality, terrestrial ecology, natural resources, occupational health and safety of workers/ public and land resources from disposal of muck and other wastes which will vary depending on extent of dam rehabilitation activities proposed. Recent events of dam failures resulting in heavy floods and siltation in the state of Maharashtra and earlier in Kerala has brought in aspects of dam safety , sediment management in the current project and will also be included as part of risk analysis under ESA. The project involves minor to major civil works for rehabilitation of dams and appurtenance structures and institutional strengthening for long term stability of the dams. The minor work may involve repair of gates valves, spillways and bottom outlet and electric and electronics components while major work may involve construction of hydrological structures like additional spillways.

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The populations in participating states are: Telangana (84,580,777), Chhattisgarh (25,545,198), Goa(1,458,545), Gujarat (60,439,692), Karnataka(61,095,297), Kerala(33,406,061), Madhya Pradesh (72,626,809), Maharashtra (112,374,333), Manipur (2,855,794), Meghalaya (2,966,889), Odisha (41,974,218), Punjab (27,743,338), Rajasthan (68,548,437), Tamil Nadu (72,147,030), Uttar Pradesh (199,812,341), and West Bengal (91,276,115). Most of the participating states have tribal population -- Andhra Pradesh (5.3%), Chhattisgarh (30.6%), Goa (10.2%), Gujarat (14.8%), Karnataka (7%), Kerala (1.4%), Madhya Pradesh (21.1%), Maharashtra (9.4%), Manipur (40.9%), Meghalaya (86.1%), Odisha (22.8%), Rajasthan (13.8%), Tamil Nadu (1.1%), Telangana (9.3%), Uttarakhand (3.2%), Uttar Pradesh (0.6%), and West Bengal (5.6%). States namely Andhra Pradesh, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana have Fifth Schedule Area, while the state of Meghalaya has Schedule VI areas. Nearly 60% of the population are engaged in primary occupation, while approximately 17% are engaged in secondary and around 23% are engaged in tertiary sectors. States such as Rajasthan, Uttar Pradesh and Chhattisgarh have high levels of poverty. Besides, there are large sections of population in coastal areas in states of Odisha, Andhra Pradesh that have faced extreme climate events in the recent years and are very vulnerable.

D. 2. Borrower's Institutional Capacity

Central Water Commission (CWC) under the Ministry of Jal Shakti at the Central level and Implementing agencies (IA) at the State levels will be main implementing agencies for all activities under the different project components. CWC and some of the participating states (Kerala, Karnataka, Tamil Nadu, Odisha) participated in DRIP 1 project and hence are familiar with the World Bank's environmental and social safeguard policies and related requirements.

At appraisal stage, 10 dams are being taken up across the two states of Rajasthan and Manipur – both of which are new states under DRIP. Additionally, Central Water Commission at the Central level too shall be key nodal implementing agency. Assessment of institutions in these three implementing agencies – Central Water Commission (CWC), Rajasthan Water resources Department (Rajasthan WRD) and Manipur Water Resources Department (Manipur WRD), indicates that these agencies have negligible or low capacity towards management of E&S issues. No in-house staff personnel with requisite skills or experience are available. However, in case of CWC, a Project Management Consultant firm contracted under DRIP 1 continues to provide support on E&S issues.

Under DRIP 2 Central Project Management Unit (CPMU) and State Project Management Unit (SPMU), dedicated Environmental and Social staff are proposed to be hired and made available with the project throughout project period. The PMC supporting the CWC too shall have additional E&S personnel to support actions envisaged under ESCP and ESMPs. However, in view of new Environmental and Social Framework (ESF), awareness and capacity is required to be built for all implementing agencies – old and new and hence, capacity building will be an area of continued focus. An institutional assessment from environmental, social and safety point of view would be part of each Environmental Social Due Diligence (ESDD) for the low to moderate risk sub projects and in the Detailed Environmental Social Impact Assessment (ESIA) for Substantial to High risks sub projects along with necessary measures to address those gaps agreed to be undertaken in the project.

By June 2020, CWC and the two states – Rajasthan and Manipur will establish and maintain an E&S organizational structure with qualified staffs to support management of E&S risks including at least one Environmental Expert, one Social Expert for ensuring reviews of ESMS, compliance and monitoring with the Bank's ESF and ESS's at the State level and as appropriate at the Central PMU (HQ) level and ensure to be on rolls throughout project period.



II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC)

High

Environmental Risk Rating

High

The environmental risk rating of the project at appraisal stage is "High". Nature of activities in most of the rehabilitation proposals (sub projects) in DRIP-1 were local and dam specific and were categorised to be of low to moderate impacts except five to seven dams out of more than two hundred where large infrastructure (like spillway, dam section improvement etc.) or significant impact based activities (such as sediment management within dam , rehabilitation /construction works on the dam in the vicinity or in conservation reserve) were undertaken, wherein impacts observed were high. The nature of activities known at appraisal stage in the DRIP-2 project are similar to the ongoing DRIP-1 project and involve structural and/or non-structural measures for ensuring dam safety. Structural measures include measures for seepage reduction (grouting, geomembranes, etc.), hydrological and structural safety enhancement measures (e.g., rehabilitation/ installation of additional spillways, fuse plugs), refurbishment of electrical-mechanical equipment (e.g., hydraulic gates), rehabilitation of foundation damages (cavities, piping, etc.), strengthening of dam concrete, masonry, and embankment structures, and improving associated facilities (e.g., access roads).

The appraisal stage understanding from Environment Social Due Dilligence (ESDS) assessments conducted for 10 dams in the state of Rajasthan and Manipur have found that all such proposals (sub projects) can be categorised as activities and have low to moderate risks. Most of the structural interventions were seen to be confined within the dam premises and are being carried out in areas with restricted access, and therefore will not have direct interface with the population around dam sites except impact on the community health and safety from the vehicles and equipment that transport construction materials and workers to the project sites. However, since DRIP-2 project is expected to be in 18 states and with varying geographical , environmental and social sensitivities, there is likely possibility that some sub project activities such as ; spillway rehabilitation / construction , sediment management , rehabilitation / strengthening of concrete, masonry, and embankment structures of dams, etc. or some of the sub projects may be located in or close to reserved forests or protected areas etc. may be categorised to be of substantial to high risk. Under component 2 of the project enhancement activities for dams operators to help generate operation and maintenance fund for sustainable operations with additional pilot activities like tourism , floating solar etc have been envisaged and would be proposed in future. These unknown activities also need to be seen from environmental and social risks perspective in the project. These risks are not yet fully known in the project. Additionally, capacity of the project proponents i.e states and Central Water commission to undertake implementation of environmental aspects assessed at this stage is low,hence the environmental risk of the project has been kept "High" at the appraisal stage.

In order to meet the challenge of unknown investments of varied nature at this stage, project has prepared a Environmental and Social Management Framework (ESMF) which lays down the procedures from screening of activities to finalisation of appropriate mitigation instruments for all types of impacts and risks i.e standard ESMP with appropriate guidelines and environmental code of practices for low to moderate risk sub projects and detailed ESIA for substantial to high risk sub projects. ESMF also includes preparation , approval and monitoring protocols to track

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ESMPs and provides institutional capacity building approaches for the project staff for an effective management of environmental and social implementation.

Social Risk Rating

High

Under DRIP II, the nature of structural activities is anticipated to be like those under DRIP -I wherein most of the activities of rehabilitation were localized in nature except in case of a few dams that had major structural interventions such as Spillway construction, new office buildings for Dam Safety directorates, etc. Under DRIP 2, however, there are new additional activities such as the Pilot interventions that relate to tourism, water recreation activities, floating Solar etc.

At appraisal stage, ESDDs were conducted for 10 dams in the states of Rajasthan and Manipur. The proposed rehabilitation works largely relate to minor civil work, electro-mechanical and instrumental work confined to existing Dam area itself. In a few dams, rehabilitation of existing access roads, rehabilitation / construction of drainage system, repair of roads on dam crest, fencing etc. are proposed. ESDD indicates that interventions are within the dam premises and encumbrance free land for these interventions is available with the respective IA. Though some of these dams are located within designated tribal areas, the proposed interventions are mainly rehabilitation works either on the dam structure or within premises and do not result in any direct or indirect impacts on the tribal groups. On the contrary, the civil works will generate work opportunities, albeit limited in numbers that shall benefits these groups as well. In a few cases, there will be construction stage impacts e.g. diversion of traffic, temporary loss of access, etc. Skilled migrant labor is likely but very few e.g. 30-50 and as these workers and their labor camps will be housed within dam premises and distant from habitations thereby minimizing the SEA/SH risks. Based on these findings, risk rating for these 10 dams ranges from Low to Moderate.

In terms of social risk rating at the Project Appraisal stage, the rating is retained as High for the following reasons:

- i) the nature and extent of risks and impacts in the remaining number of dams would be known at different periods during implementation. These could involve: adverse social impacts on land, private and community owned assets including structures, trees and crops in areas identified for land taking, besides on assets that belong to Non-titleholders, and could include physical and economic displacement and cultural heritage issues, besides labor and SEA/SH risks;
- ii) as a few dams are likely to be in areas with significant tribal presence, nature and extent of impacts would be known based on the ESIA that would be carried and it is likely there could be instances where FPIC could be required;
- iii) three of the IAs – Rajasthan WRD, Manipur WRD and Central Water Commission, have low capacity to address E&S risks. Even though four of the eight IAs in DRIP I are also involved in DRIP 2, and some capacity for Management of E&S risks and impacts, has been built in this regard, the capacity of majority of the borrowers is low;
- iv) the geographically widespread nature of the project would be a challenge to effectively monitor Social risks and issues.

In order to meet the challenge of unknown investments of varied nature at this stage, project has prepared a Environmental and Social Management Framework (ESMF) which lays down the procedures from screening of activities to finalisation of appropriate mitigation instruments for all types of impacts i.e standard ESMP with appropriate plans for low to moderate risk sub projects and detailed ESIA for substantial to high risk sub projects. ESMF also includes preparation, approval and monitoring protocols to track ESMPs and provides institutional capacity building approaches for the project staff for an effective management of environmental and social risks and impacts.



B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1. General Assessment

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Overview of the relevance of the Standard for the Project:

DRIP II envisages structural and non-structural measures for 300 dams. Structural measures such as seepage reduction (grouting, geomembranes), hydrological and structural safety enhancement measures (e.g., rehabilitation / installation of additional spillways, fuse plugs), strengthening of electrical-mechanical equipment (e.g., hydraulic gates), rehabilitation of foundation damages (cavities, piping, etc.), strengthening of concrete, masonry, and embankment structures of dams, and improving associated facilities with dams (e.g., access roads). Non-structural measures could include dam safety instrumentation, monitoring, surveillance, inspection and reporting protocols for dam safety review/assessment; flood forecasting and early warning systems; integrated reservoir operations including streamflow forecasting for climate resilient dam management; preparation and implementation of Emergency Preparation Plans (EPPs); and preparation and implementation of sediment management plans. Structural and non-structural measures will be identified in dam rehabilitation / safety enhancement plans that are prepared after conducting thorough investigative studies and dam safety assessments to ensure appropriateness of interventions for dam rehabilitation and improvements. Dam safety assessment including adequate investigation, survey, and risk analyses, as required under ESS4 will be undertaken at early stages of project implementation before dam rehabilitation /safety enhancement proposals are prepared / finalised along with the review / recommendations of the Dam Safety Review Panel of the respective states and implementing agencies. Further detailed are provided by the Good Practice Note on Risk-Informed Dam Safety Management under the ESF/ESS4 (World Bank, March 2020). The environmental risks anticipated under the project arise from the fact that the project is spread across in the 18 states across India with fragile and climate vulnerable terrain but is clearly focusing dam rehabilitation activities. Addressing environmental and social risks and impacts from dams through various rehabilitation measures is required because unmanaged and unmitigated environmental impacts could result in negative consequences. Under land and water resource management, risks could arise from structural measures like; grouting, installation of geomembranes, construction of additional spillways, fuse plugs, refurbishment of electric-mechanical facilities such as hydraulic gates, remedial works of foundation damages (cavities, piping, etc.), rehabilitation / strengthening of concrete, masonry and embankment structures of dams, and improving associated facilities with dams (e.g., access roads). The other risks such as occupational Health and safety of workers, disposal of construction wastes, air, noise and water quality, in case of most of the sub projects to be anticipated. The nature and extent of Social risks and impacts in the remaining number of dams would be known at different periods during implementation. These could involve: adverse social impacts on land, private and community owned assets including structures, trees and crops in areas identified for land taking, besides on assets that belong to Non-titleholders, and could include physical and economic displacement and cultural heritage issues, besides labor and SEA/SH risks. At appraisal stage, assessments were conducted of 10 dams from states of Rajasthan and Manipur. Environmental Social Due Diligence (ESDDs) indicate that rehabilitation proposals largely relate to minor civil work, electro-mechanical and instrumental work confined to existing Dam area itself. In a few dams (Bisalpur, Matrikundia, Mahi-Bajaj and Chappi), rehabilitation of existing approach roads, rehabilitation / construction of drainage system, repair of fencing, etc. are proposed. The ESDD brings out that such activities are concentrated within dam area and impacts are also localized with categorization as low to moderate risks. There is no direct impact due to construction of activities envisaged in such dams. None of the dam is in the protected areas, except one dam (Jawai Dam) which is close to conservation area but without any direct impact due to proposed activities. The impacts envisaged are of



construction stage which can be managed appropriately with construction stage guidelines on camp site management, debris disposal and keeping a tab on occupational health and safety aspects. Fishing activities are prevalent in some of the dams, but interventions will not directly or indirectly impact the livelihoods of the fishing activities. In Rajasthan 2 of 8 dams are located within Schedule V areas (with preponderance of tribal population. Lands for these interventions are available with respective IA and there will be only construction stage impacts e.g. disruption/diversion of traffic, temporary loss of access, etc. Measures such as alternate access, traffic management plans would be included in Contractor-ESMP to address such impacts. Skilled migrant labor (30-50) is likely but very few. The interventions will benefit all downstream communities in flooding areas through reduced likelihood of dam breach and consequence of catastrophic flooding events in case of dam failure or uncontrolled release of water. Moreover, other indirect benefits would be provided work opportunities, albeit limited, shall accrue to the local population and would be monitored as part of periodic E&S progress reports and overall annual audit of ESCP implementation. Non-structural interventions such as flood warning system and Emergency Action Plan (EAP) will also be beneficial for reducing negative impacts on downstream communities not just in case of potential dam breach but also discharge of a large amount of floods without dam failure. Activities carried in the midst of tribal population will need additional culturally appropriate outreach efforts that would be included in the Stakeholder Engagement Plans within ESDDs. In order to meet the challenge of unknown investments of varied nature, project has prepared a Environmental and Social Management Framework (ESMF) that lays down the procedures from screening of activities to finalisation of appropriate mitigation instruments for all types of impacts and risks i.e standard ESMP with appropriate guidelines and environmental code of practices for low to moderate risk sub projects and detailed ESIA for substantial to high risk sub projects. ESMF also includes preparation , approval and monitoring protocols to track ESMPs and provides institutional capacity building approaches for the project staff for an effective management of environmental and social implementation. As and when more states/IAs join the project, the ESDD/ ESIA for the remaining dams will be undertaken by ESIA consultants during project implementation in accordance with process of risk categorisation laid down in Environment and Social Management Framework (ESMF) prepared. Following process steps have been included in the ESMF to screen newly proposed sub projects: i) All sub-projects shall undergo Environment and Social Due Diligence (ESDD) using E&S screening checklist to identify risk category, wherein it has been described for all low to moderate risks a standard ESMP with relevant guidelines will be prepared and implemented. For all sub-projects categorized as Substantial to High risk will undergo a detailed Environment and Social Impact Assessment (ESIA) for which a Terms of Reference has been included in the ESMF. All such ESIA and relevant mitigation plans shall be reviewed by the Bank before implementation. All such ESDDs/ ESIA and ESMPs will be completed prior to issue of bid for activities under each dam; ii) all tourism activities (under Component 2) of the project shall undergo E&S screening and the findings shall be shared with Bank for its endorsement on the identified risks, before taking up such activities. Those identified as Substantial or High risks shall be required to carry out detailed ESIA and approval from Bank. These activities will also be monitored by same institutional arrangement proposed under above mentioned ESMF; iii) ESMF describes institutional arrangements to oversee implementation and monitoring of ESMPs and ESCP provisions; iv) An Annual Audit of Environmental and Social Commitment plan of all States and Implementing Agencies (IAs) shall be undertaken by Central Project Management Unit (CPMU) and will be shared with the World Bank. The project has an ESCP which will be part of legal agreement with all participating states and Implementing agencies (IAs). All states and Central PMU will abide by process steps and guidelines of ESMF and same will be included in ESCP. Each state and IA will prepare an ESCP in agreement with the Bank that cover the material measures and actions that are required for the project to achieve compliance with the ESSs over a specified timeframe and indicate responsibilities. It will consider the findings of the environmental and social assessment, the Bank's environmental and social due diligence and the results of engagement with stakeholders. To



minimise such risks identified an ESMP based on the of categorisation of the sub projects (low to moderate or substantial to High) will be prepared along with Plans required under relevant ESS. Due diligence on risks and impacts on disadvantaged or vulnerable individuals or groups was ensured by inclusion in: i) terms of reference for the studies, ii) sections in the ESDD. Disadvantaged and Vulnerable households defined under the project include: ST, family/household headed by women/female, physically challenged, Below Poverty Line (BPL) and illiterate persons/households, landless and marginal farmers, Scheduled Caste households. GBV risks rating based on risk assessment tool, is low and GBV framework developed that describes actions commensurate to risk levels

ESS10 Stakeholder Engagement and Information Disclosure

All dams shall have: i) structural interventions that shall be carried out either on the Dam structure or within its premises and with very nil or minimal interface with downstream communities including fishing communities, farmers cultivating on land parcels where water recedes; and ii) non-structural interventions such as EAP, early flood warning system. Previous engagement activities involved dam officials informing village representatives (sarpanch) of all downstream villages as well as the local administration (Sub-Divisional Magistrate office); and SDM office announcing vide loudspeaker to downstream villages and convey the message. Based on these ESIA findings relating to both structural and non-structural interventions for 10 dams, potential stakeholders were categorized as follows:

- i) Affected parties: there are no affected persons who shall be directly or indirectly adversely affected by the proposed interventions. However, all communities in the vicinity particularly the downstream users, farmers, fishing communities shall be indirectly and positively benefited by the dam safety interventions
- ii) Other interested stakeholders: Segregating the stakeholders by structural and non-structural measures, these would be potential contractors, Project Management consultants, either regulatory bodies/institutional stakeholders such as Revenue, Environmental Authorities, etc. In relation to non-structural interventions such as early warning system and EAP (a document that needs to be both disseminated and consulted upon to elicit feedback), these would include: communities living downstream including farmers; Fishing Contractors; village heads (Sarpanchs), community leaders; district administration; police, state disaster management authority, revenue department; electronic and print media, etc.
- iii) Disadvantaged and vulnerable persons and groups would include Illiterate persons, physically challenged, women and elderly. Such groups will need special focus and outreach efforts to inform them of project developments, provisions and actions of the EAP. Also, as there are tribal communities in downstream in many of these dams, suitable IEC material will be developed to ensure effective communication.

Under revenue generation component, tourism and water recreational activities, solar, fisheries, etc. would be taken up in some of dams and are likely to result in permanent structures and might result in adverse direct or indirect impacts to persons/communities. Though all dams have largely similar nature of proposed interventions, there would be some dams with some additional activities under rehabilitation and /or revenue generation. Hence the nature and scope of stakeholder engagement need to be proportionate to the nature and scale of the project and its potential risks and impacts. Hence, at the appraisal stage, based on the ESIA's and interactions with three agencies – Central Water Commission, Rajasthan Water Resources Department and Manipur Water Resources Department a Stakeholder Engagement Framework (SEF) has been prepared for the overall project.

The SEF comprises: a) process to be followed for identification of stakeholders; b) requirements as per legal and regulatory framework (Right to Information act, 2005) and Bank policy on access to information; c) description of nature and type of information to be disclosed with sufficient time for eliciting feedback; d) lay down modes (e.g. PA system, public meetings, whatsapp/SMS, household surveys, consultations) and frequency of such information



disclosure (of plan and procedure documents; advertisements on civil work contracts and work opportunities), by category of stakeholders including disadvantaged and vulnerable persons & groups. It will also include specific modes of engagement for dams wherein communities would be involved in the tourism development aspects. The SEF details the institutional arrangements for implementation & monitoring of the activities – including reporting back on the results of stakeholder engagement activities to stakeholder groups, and budget. Finally, the SEF presents a two or three grievance redressal mechanism that shall be made operational at all Dam sites, if not operational already. SEF details the GRM in terms of principles to be followed in its constitution including mandatory female representation, process for receiving and redressing, meeting norms, timelines for resolution and escalation provision.

The Project SEF shall form the basis for development of Stakeholder Engagement Plan at each Dam commensurate to the nature and type of interventions and stakeholders. This SEP will be included as part of the ESDDs/ESIAs report for each dam. Each of implementing agencies involved in the project at appraisal stage, shall disclose these dam specific procedures on their website and also summary of the same (in local language) at key locations for easy access of communities. Later, when IAs join the project, they shall SEF, develop, disclose, and implement dam specific procedures, in accordance with the SEF. In respect of review, Bank shall review and monitor implementation of these procedures for projects with risk category of S or H, while CWC will monitor the implementation of projects categorized as risk level of L or M.

The exact composition of stakeholders may change as a result of changes to the project design or shifting circumstances during project implementation, prompting updates to the SEF, which will be a living document and will be updated accordingly if needed during implementation and this shall be a condition in ESCP

B.2. Specific Risks and Impacts

A brief description of the potential environmental and social risks and impacts relevant to the Project.

ESS2 Labor and Working Conditions

Review of the national legal provisions on labor indicate that these cover all requirements in ESS2 except relating to community workers and a functional GRM for different types of workers. Based on the findings of the ESIA for the first 10 dams, the categories of project workers shall include:

- i) Direct workers – all the dam site officials and personnel involved in the project activities;
- ii) Contracted workers as all IA would engage Contractors to undertake rehabilitation works; agencies/firms to support core service functions such as SCADA systems, etc. These contractors shall bring skilled Migrant workers for some of more specialized tasks; and
- iii) community workers (or volunteers particularly for EAP).

Also, given the specialized nature of most of these tasks, it is anticipated 50-70 workers, would be working but across a time ranging from 24-36 months at different dams.

Identified risks include: Non-payment of wages by Employer; Non-payment of benefits (compensation, bonus, maternity benefits etc.) by Employer; Discrimination in Employment (e.g. abrupt termination of the employment, working conditions, wages or benefits etc.). in respect of risk of Sexual Exploitation and Abuse/Sexual Harassment resulting from influx of migrant labor, the possibility limited at all dams except two (Som Kamla Amba and Imphal barrage), as works are to be carried out either on dam structure or well within the dam premises.



Hence in accordance with this requirement, a Labor Management Procedure would be developed by each IA, at least one month prior to mobilization of contractor for civil works. The procedure would clearly lay down and spell out the requirements relating to provision of terms and conditions of employment; promoting of non-discrimination and equal opportunity; worker's organization etc. besides a mechanism to redress grievances mechanism to the direct and contracted workers.

Given the specialized nature of most of the tasks, large number of unskilled workers are not anticipated, except in a few dams that might involve major civil works. To address this issue, the contractor, as part of the C-ESMP, will prepare a Labor Influx Management Plan that shall comprise provisions: for source all unskilled labor from within the project area and its vicinity. Skilled labor force, if unavailable locally, would be brought in from outside the project area either from within or outside the state. Further, the Contractor shall develop a Workers' Camp Management Plan (as part of C-ESMP), to address specific aspects of the establishment and operation of workers' camps e.g. cordoning of separate areas for labor camps and material storage; conduct training programs on HIV/AIDS and other communicable diseases; develop a complaint handling mechanism for the workers.

In addition, the ESHS norms, applicable construction stage labor laws, ESHS metrics for periodic reporting would be a part of the bid documents. In addition, the contractor obligations to manage adverse impacts, if any is clearly reflected in the contractual obligations of the Civil Works Contractor with appropriate mechanisms for addressing non-compliance. The ESMP outline the various measures that need to be considered to prepare contractor's OHS plan which will be part of Contractor's ESMP (C-ESMP). World Bank shall review the contractor's OHS Plan to ensure it is acceptably comprehensive and detailed

ESS3 Resource Efficiency and Pollution Prevention and Management

Various natural resources such as water, sand, gravels, earth and chemical compounds may be required for different dam rehabilitation activities and access road constructions. Optimal use of these resources will be essential with the use of best construction practices and reuse of construction/demolition waste. Commitment for optimal use of resources and adoption of guidelines for optimal use of required resources following the principle 3R (recycle, recovery, reuse) principle of pollution prevention will be taken from borrower as part of ESCP. In addition to resource efficiency measures, use of technicality and financially feasible and cost-effective options will be promoted as part of mitigation measures to avoid or minimize project related air emissions, and effective management of solid and hazardous waste. Dams have waste land areas and large water storages. Sustainable use of dam resources shall be explored for renewable energy generation and income generation activities. Thus, potential of solar power generation shall be assessed, and efforts shall be made to implement such sub projects which will also contribute, indirectly, in reduction of GHG emissions.

As per current ESDD of ten dams undertaken during appraisal, use of resources such as water and power during construction, pollution generation from storage and handling of material, generation of waste, use of paints and other chemicals for construction activities and transportation of raw materials etc. are some of the risks which have been identified. Risk associated on soil quality due to disposal of muck has been observed. These risks are construction stage and can be handled as per standard practices of camp site management and appropriately



planned Muck and Debris Disposal. Going forward it has been recommended to have Resource conservation Plan and Muck Disposal Plan under the ESMP. Construction Management guidelines for material handling and spills in to the water especially paint etc. will be incorporated in the ESMP/ ESMF.

In addition to ESF, the World Bank Group Environmental Health & Safety Guidelines will also be taken care in the project through ESMP preparations both for low to moderate and substantial to High sub projects. Notwithstanding that cleaner alternatives would be sought for energy generation, the project will also estimate GHG emission, also, the project could have an impact on the water availability during construction and/or operation, and for that a water management plan will also be prepared. The project will ensure cleaner production principles for the proposed activities. Such a Plan document shall be prepared and included as part of the ESDD/ESIA reports. These shall be prepared by the respective IA with support of ESIA consultants; disclosed by the IA on its website and other accessible location. ESMP will be developed prior to issuance of the bids and will also be included in the bid documents of each sub projects. Such requirement will be stated as a requirement in the ESCP – that shall be signed by all IAs participating in the project.

ESS4 Community Health and Safety

Dam safety is intrinsic part of the project. Natural hazards, such as earthquake, cyclones / landslides/debris flow, etc. do exist in many sub project areas. Potential risk of accident and incidence do exist during rehabilitation /construction and operation stages of the project as in today. Dam safety assessments of all dams are required per ESS4 in a risk-informed manner and will be undertaken as per the Guidelines for Assessing and Managing Risks Associated with Dams (CWC, February 2019) and the Good Practice Note on Risk-Informed Dam Safety Management (World Bank, March 2020)early in the project preparation as basis for identifying / assessing priority remedial measures both in structural and non-structural aspects, and preparing the design / construction plan of dam rehabilitation and safety improvement works as well as dam safety plans. As these dam safety related reports are highly technical ones involving safety and security related information, they will be prepared as separate documents from ESDD/ESIAs. Whilst dams are designed against extreme natural hazards, such as Probable Maximum Flood, Maximum Credible Earthquake, etc., possibility of unforeseeable extreme events occurrence beyond design standards cannot be rules out. The resilience enhancement measures including consideration of likely effect of climate changes for dam rehabilitation /enhancement works and structural / operational modifications can minimize such probability to a larger extent as elaborated in the aforementioned GPN.

The larger construction activity such as additional spillway construction may have risk to ecosystem services which may have results in adverse health and safety risk to depended community. ESIA's for each such sub project or dam shall be made including effect of climate change and mitigation measures; to eliminate or minimize such impacts and a comprehensive ESMP shall be prepared. Various measures for protection of occupational health and safety are defined under DRIP I. Emphasis will be given in designation of environment and occupational health and safety officers at each sub project and strengthening their capacity through workshops and training programmes and exposure visits.

It will also be ensured that dam safety assessments as well as design and construction supervision of rehabilitation / safety enhancement works should be undertaken by qualified experts. A set of required investigation, survey and analyses should be covered for proper safety assessment and design of remedial works. The risk assessment should



also be undertaken in a commensurate manner with potential risk of dams (failure likelihood of existing dams and downstream hazard/consequence in case of failure and/or uncontrolled release of water) and complexity of remedial works. Such assessments should be carried out covering hydrological, geological/geo-technical, seismic, and other operational risks in a comprehensive manner. The results of dam safety /risk assessment as well as adequacy of proposed remedial works and quality of construction works should be periodically reviewed by independent Dam Safety Review Panels to be established by the participating States and other Implementing agencies. The DSRP TORs and qualification of members have been reviewed and considered adequate (to be done for appraisal). Also, dam safety plans should be prepared including: (i) plan for construction supervision and quality assurance, (ii) instrumentation plan (iii) operation and maintenance plan (iv) emergency preparedness plan. The dam sites will ensure security and safety personnel. The plan for construction supervision and quality assurance, preliminary operation & maintenance plan, and framework plan for emergency preparedness along with the estimated budget have been prepared in a satisfactory manner. The instrumentation plan is to be incorporated into the detailed design and bidding documents. The upgraded O&M plans and EPP will be completed during the early phase of project implementation period. (All these aspects are to be confirmed during appraisal).

The current ESDD of ten dams undertaken during appraisal indicates risk of labour involvement for works and their stay at site for a period of ranging from some months to about 3 years. Labour intensive work always involves risks of accidents such as working at heights, working on upstream body of dam, underground activities, etc. The project is likely to involve direct labor, contract labor and community workers. Labor Management Procedure (LMP) and Community Health Management Plan shall be prepared as part of ESMP and will be included for all sub projects. Such a Plan document shall be prepared and included as part of the ESDD/ESIA reports. These shall be prepared by the respective IA with support of ESIA consultants; disclosed by the IA on its website and other accessible location. ESMP will be developed prior to issuance of the bids and will also be included in the bid documents of each sub projects. Such requirement will be stated as a requirement in the ESCP – that shall be signed by all IAs participating in the project. Commitment shall be taken from borrowers as part of ESCP for protection of health and safety of workers/community, traffic/road safety, safe management of hazardous materials, allocation of adequate resources for implementation of proposed protection measures and all time emergency preparedness and response

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

At the appraisal stage, ESDD findings indicate that: i) these proposed interventions are limited to the existing dam and will take place on the existing dam structure and within its premises; ii) the boundary fencing component in couple of dams – Mahi Bajaj Sagar and Bisalpur Dam, will not obstruct access to facilities/ livelihoods of the local communities; iii) there are no legacy issues from the time of construction of these dams that relate to compensation, displacement or resettlement; iv) in a few dams such as Matrikundia, Chhapi, Sukhi Selwada, there have been instances some encroacher farmers cultivating on government land along the reservoir, when the water level recedes. Such practices too, won't get disturbed due to the proposed dam safety interventions but on the contrary, are likely to benefit from it; v) some land parcels downstream at Matrikundia, Chhapi dams, have been damaged due to heavy discharge and have resulted in a few pending compensation issues that are judicial review. Hence, at the pre-construction stage, none of the proposed activities/interventions, involve acquisition of private land and/or private assets; in no way cause restriction on access to land or use of resources by local communities; and there is no economic displacement. There might be temporary impacts such as disruption to vehicular movement during



construction at Imphal Barrage – wherein findings indicate heavy usage of the barrage road. These might result in temporary inconvenience, but do not involve disruption or loss of access to assets by communities.

However, rehabilitation proposals involving major construction activities e.g. Additional Spillway or medium scale construction works e.g. creation of permanent structures for tourism, solar power generation, etc., are likely to come up during project implementation. Such activities, if taken up, might result in adverse impacts on land and/or assets and/or result in physical and/or economic displacement. Hence, in order to address such aspects, a RPF (as part of the ESMF) would be developed that would be based on applicable national and state regulations and ESS 5 requirements and contain measures to bridge the identified gaps.

The RPF shall include provisions for: compensation at replacement cost i.e without depreciation, and assistance to non-title holders – squatters and encroachers; one-time subsistence grant or transitional support; shifting assistance; assistance provisions to cover temporary loss of business, etc.; notice period of appropriate duration to vacate occupied land; provisions to salvage the affected materials; additional or special measure for those identified as disadvantaged and vulnerable groups e.g. SC, STs, Below Poverty line families; and support for training for skill development, counselling towards livelihood support/restoration. Based on the RPF, the IAs will undertake a SIA and prepare Abbreviated RAP or RAP, prior to issuance of bids. It shall be translated into local language and disclosed by the IA on its website and accessible locations. Preparation of such a document shall be stated as a requirement in the ESCP that shall be signed by all IAs implementing the project.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

Most of dams has rich biodiversity around it. Some of these dams may be located close to reserve forest areas or protected areas. Construction of larger structures like spillway may lead to cutting of larger number of fully grown trees and/or diversion of forest area and changes in water flow may have impacts on aquatic ecosystems. Meaning it may have high risk to ecosystem service and needs to be adequately address through appropriate avoidance, minimization or mitigation and compensatory measures.

As per the appraisal stage ESDD conducted for 10 dams, only Jawai dam located in Rajasthan state is in proximity to declared conservation areas of the state. However, It is an old dam and no intervention has been proposed inside the conservation area. The risks can be mitigated using construction stage Bio-diversity Management guidelines.

All the risks and impacts relevant to ESS6 will be assessed as part of the ESDD/ ESIA and as per the procedures laid down in the ESMF of the Project. The mitigation hierarchy will be applied to manage E&S risks and impacts and ESMPs shall be prepared. If required, a separate Biodiversity Management Plan (BMP) will be prepared. Such a Plan document shall be prepared and included as part of the ESDD/ESIA reports. These shall be prepared by the respective IA with support of ESA consultants; disclosed by the IA on its website and other accessible locations. Preparation of such a document prior prior to commencement of construction shall be stated as a requirement in the ESCP – that shall be signed by all IAs participating in the project.



ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

The project is likely to cover 18 states & 20 IAs, of which many have significant amount of tribal population such as Odisha, Chhattisgarh, Madhya Pradesh, Meghalaya, West Bengal, etc. Many of these same states also have areas that are declared as Schedule V and VI areas as defined by the Constitution.

At appraisal stage, ESIA findings indicate that: i) 2 of the 10 dams i.e. Mahi Bajaj Sagar and Som Kamla Amba dams in the state of Rajasthan are in Schedule V areas i.e. areas that have a preponderance of tribal population as declared by the constitution; ii) the state of Manipur however does not have such designated Schedule areas; iii) rest of the dams in both the states have tribal population in the vicinity but these groups are well-mainstreamed into overall society, and do not meet with the characteristics outlined in the ESS; iv) the proposed structural rehabilitation works are being carried out on the existing dam structure and within dam premises and not leading to any new infrastructure; iv) non-structural interventions such as early flood warning system and EAP, would be taken up in midst of tribal population groups. Hence, for these groups, additional outreach efforts will be made through usage of culturally appropriate IEC material towards information dissemination/consultation, particularly during preparation of EAP. These details would be provided within the ESDDs.

Hence a Tribal development Framework would be developed as part of the ESMF by project appraisal. The framework would detail the process to be followed based on the risk categorization; approach to engagement of these groups, implementation arrangements and monitoring. The framework would clearly state that FPIC would be undertaken in sub-projects involving impacts on land, livelihood, cultural heritage and in cases requiring relocation and in case FPIC cannot be ascertained, the project will not proceed with those activities. The framework will be developed in accordance with provisions of the ESS 7 and existing state & national legal and regulatory framework. As and when other states & IAs join the project, ESDD/ESIAs would be carried out for all interventions proposed at each proposed dam and based on the findings, if need be, Tribal Development Plans (TDPs), will be developed before commencement of works and included within the ESDDs and as separate plans for sub-projects categorized as Substantial or High.

Such Plan documents shall be prepared at least one month before commencement of preparation of EAP, will be disclosed by the respective IAs. The requirement to prepare such plans, their translation and disclosure by the respective IAs shall be stated in the ESCP, that shall be signed with all IAs implementing the project.

ESS8 Cultural Heritage

At appraisal stage, locational sensitivity analysis undertaken as part of ESDDs for the 10 dams indicate that none of the dams involve activities close to any such culturally sensitive location. Only Bisalpur dam has a protected Monument, partially submerged behind dam called Bisaldeo temple, a monument of National Importance as designated by Archaeological Survey of India (ASI) but no project activity or intervention are proposed close to this monument.

The project is rehabilitating existing dams thus envisaging low risks and impacts to cultural heritage at this stage. However, possibility of chance find will be included for construction activities. Appropriate provision and measures shall be made under Environment and Social Management Plan and contractor's contract to deal with chance find



and its recovery and preservation. If any such cultural heritage is identified, a cultural heritage management plan shall be developed.

Such a Plan document shall be prepared and included as part of the ESDD/ESIA reports. These shall be prepared by the respective IA with support of ESIA consultants; disclosed by the IA on its website and other accessible location. ESMP will be developed prior to issuance of the bids and will also be included in the bid documents of each sub projects.

Such requirement will be stated as a requirement in the ESCP – that shall be signed by all IAs participating in the project

ESS9 Financial Intermediaries

At this stage, no FIs are proposed to be involved. However, relevance of this ESS will be revisited during project implementation

B.3 Other Relevant Project Risks

Considering the project covers many states including those which are susceptible to seismic activities, earth quakes will be another risk worth considering under the project.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways	Yes
OP 7.60 Projects in Disputed Areas	No

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III. BORROWER’S ENVIRONMENTAL AND SOCIAL COMMITMENT PLAN (ESCP)

DELIVERABLES against MEASURES AND ACTIONs IDENTIFIED	TIMELINE
ESS 1 Assessment and Management of Environmental and Social Risks and Impacts	
All IAs will establish and maintain an E&S organizational structure with qualified staffs to support management of E&S risks including at least one Environmental Expert, one Social Expert for ensuring reviews of ESMPs, compliance and monitoring with the Bank’s ESF and ESS’s at the State level and as appropriate at the Central PMU (HQ) level and ensure to be on rolls throughout project period.	06/2020
CWC/ Central PMU to ensure that State WRD/ IA to undertake Environment and Social Due Diligence (ESDD) using the E&S screening checklist to identify risk category of each sub-project, as per procedures laid out in Environment and Social Management Framework (ESMF) of the Project and take measures to develop commensurate ESMPs.	06/2020
All tourism related activities (as described in Component 2 of the project) shall undergo E&S screening and the findings shall be shared with the Bank for its endorsement. All ESMPs of the sub projects	12/2020



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under dam activities and tourism and other activities under component -2 of high and substantial risks shall be reviewed by CWC and will be shared with the Bank for approval before the award of such works.	
CPMU and SPMU will ensure compliance of any legal or statutory clearance/ permission / consent/ permit, if required for any sub project activity.	12/2020
Ensure incorporating relevant aspect of ESMP (E&S mitigation measures, Bill of Quantities (BOQ's, Technical Specifications, drawings and mitigation cost) and ESCP requirements in bid document for procurement of civil work contractor. All IAs to include in bidding document, an Environmental and Safety Manager and Social cum Community Liaison Officer as Key member of Contractor Team and explicitly list resources that would be mandatory for effective ESHS implementation.	06/2020
CPMU will undertake an Annual Environmental and Social Commitment plan Audit of all IAs from an independent agency and prepare and submit audit report and corrective actions to The World Bank	06/2021
Central IA & State WRD/ IA to obligate contractor to submit C-ESMP prior to starting of civil work and update every six months.	09/2020
Prepare and disclose Gender Base Violence Risk Mitigation Framework (as part of ESMF)	04/2020
Submit Quarterly Progress reports to the Bank on an agreed format not later than 15 days after the end of each quarter on E&S implementation	10/2020
Submit Monthly Progress Reports (MPR) to the Project Management Consultants (PMC) shall summarize the key progress and issues to Bank on an agreed QPR – to be submitted every quarter.	12/2020
ESS 10 Stakeholder Engagement and Information Disclosure	
All IAs to disclose Draft Stakeholder Engagement Framework (SEF) including: (i) Details of Project GRM including date of notification of constitution of GRC members, and (ii) budget for implementation of activities	04/2020
CWC to prepare Annual report on SEP implementation by different dams and disseminate at an “Annual Experience Sharing Workshop” event with participation of all Implementing Agencies	06/2021
ESS 2 Labor and Working Conditions	
Develop a LMP for all type of employees and workers likely to be involved in the project and ensure adherence to LMP in bid document for all contracted agencies to implement	09/2020
Establish a Grievance Redress Mechanism (GRM) and operated by the contracted agencies to address Project workers workplace concerns. State WRD will monitor implementation of these provisions	09/2020



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Contractor to develop & implement OHS plan to maintain safe working environment and workplace. Will include emergency preparedness and response plan; training of workers and remedies for occupational injuries death and disabilities; follow ESHS norms	12/2020
ESS 3 Resource Efficiency and Pollution Prevention and Management	
Contractor ESMP to include hazardous and non-hazardous waste management guidelines to handle material at site. These will include waste oils, empty pain containers where painting is involved and all other hazardous waste if any likely to be generated	09/2020
Contractor ESMP to include construction waste and other waste hazardous Disposal Site Management and Restoration Plan including allocated budget to implement the plan. PMC at CPMU / State WRD/ IA will monitor implementation of this plan.	09/2020
Contractor ESMP to include project’s ‘specific water use and water conservation plan and other resource source and use and conservation plan. Contractor to ensure that resource required is not sourced from unauthorized sources	09/2020
ESS 4 Community Health and Safety	
Contractor ESMP to include Traffic Management and Road Safety Plan, Emergency Response Plan, Labor influx plan, Community Health and Safety Plan (including in relation project workers, risks of labor influx, communicable and non-communicable diseases	09/2020
State WRD/IA will establish and maintain the Dam Safety Review Panel (DSRP) for reviewing and confirming the adequacy of design of rehabilitation and safety improvement works, quality of construction works, and other dam safety measures incl. plans	04/2020
State WRD/IA will submit the dam safety plans including: i) construction supervision and quality assurance plan, ii) instrumentation plan, iii) operation and maintenance plan, and iv) emergency preparedness plan	12/2020
ESS 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	
Prepare Resettlement Policy Framework (within ESMF) that is based on applicable national and state laws and ESS 5 and submit to Bank for endorsement prior to disclosure	04/2020
Prepare ARAP/ RAP as per RPF for the overall project, as and when there are activities involving acquisition of land or assets leading to involuntary resettlement impacts; disclose the document after review by the Bank	12/2020
ESS 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	
State WRD/ IA to conduct Biodiversity and conservation plan assessments specially for DAM sites close to conservation areas (e.g. Bisalpur Dam); prepare and disclose Biodiversity conservation guidelines and Plan for all such dams & allocate budgets	12/2020



ESS 7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	
CWC to prepare and disclose Tribal Development Framework for the overall project	04/2020
State WRD/ IA shall prepare and disclose Tribal Development Plans (based on ESDD/ESIA findings) in accordance with the overall Tribal Development Framework	12/2020
ESS 8 Cultural Heritage	
State WRD/ IA to develop a Cultural Heritage Management Guidelines and if required a Plan in sub projects if any such cultural aspects is likely to be affected from any of the dam scheme.	09/2020
ESS 9 Financial Intermediaries	

B.3. Reliance on Borrower’s policy, legal and institutional framework, relevant to the Project risks and impacts

Is this project being prepared for use of Borrower Framework? No

Areas where “Use of Borrower Framework” is being considered:

The borrower/government has not proposed for adoption of borrower E&S framework to address E&S risks of the project. The project will comply with the Bank’s new ESF and ESS. The project is however is subject to the national, state and local permits and clearances as per the existing legal institutional framework. The need to obtain permits and clearances will be recorded in the ESCP.

Public Disclosure

IV. CONTACT POINTS

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Borrower/Client/Recipient

Borrower: Ministry of Jal Shakti, Government of India

Implementing Agency(ies)

Implementing Agency: Government of Rajasthan, Water Resources Department

Implementing Agency: Government of Karnataka, Water Resource Department



Implementing Agency: Government of Manipur, Water Resources Department

Implementing Agency: Bhakra Beas Management Board (BBMB)

Implementing Agency: Government of Madhya Pradesh, Water Resource Department

Implementing Agency: Government of Maharashtra, Water Resource Department

Implementing Agency: Government of Chhatisgarh Water Resources Department

Implementing Agency: Kerala State Electricity Board

Implementing Agency: Central Water Commission (CWC), Ministry of Jal Shakti

Implementing Agency: Government of Gujarat

Implementing Agency: Government of Kerala, Water Resource Department

Implementing Agency: Government of Tamil Nadu, Water Resource Department

Implementing Agency: TANGEDCO

Implementing Agency: Meghalaya Energy Corporation Limited

Implementing Agency: Government of Orissa Water Resources Department

V. FOR MORE INFORMATION CONTACT

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VI. APPROVAL

Task Team Leader(s):	Chabungbam Rajagopal Singh, Halla Maher Qaddumi
Practice Manager (ENR/Social)	David Seth Warren Cleared on 09-Mar-2020 at 09:33:49 EDT
Safeguards Advisor ESSA	Agi Kiss (SAESSA) Concurred on 26-Mar-2020 at 12:39:3 EDT