MULTIDISCIPLINARY EDUCATION AND RESEARCH IMPROVEMENT IN TECHNICAL EDUCATION

(MERITE)

Environment and Social Management Framework

(ESMF)

Department of Higher Education
Ministry of Education (MoE)
Government of India

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List of Abbreviations

Abbreviations	Details
ACM	Asbestos-Containing Materials
AI	Artificial Intelligence
AICTE	All India Council for Technical Education
AIDS	Acquired Immune Deficiency Syndrome
AIIMS	All India Institute of Medical Science
AISHE	All India Survey of Higher Education
ARAP	Abbreviated Resettlement Action Plan
ATU	Affiliated Technical University
COVID-19	Coronavirus Disease
CPA	Central Project Advisor
CPCB	Central Pollution Control Board
CPGRAMS	Centralized Public Grievance Redress and Monitoring System
CPWD	Central Public Works Department
CRF	Collaborative Research Fund
CRZ	Coastal Regulation Zone
CTGRAMS	Centralized TEQIP Grievance Redress and Monitoring System
CWC	Central Water Commission
DEB	Distance Education Bureau
DG	Diesel Generator
DHE	Department of Higher Education
DST	Department of Science and Technology
EAP	Equity Action Plan
EHS	Environment, Health and Safety
EHSG	Environmental, Health, and Safety Guidelines
EIA	Environmental Impact Assessment
EQA	External Quality Assurance
ESCP	Environmental and Social Commitment Plan
ESF	Environment and Social Framework
ESHS	Environment Social Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environmental Social Management Plan
ESMS	Environmental and Social Management System
ESRC	Environmental and Social Risk Classification
ESS	Environmental and Social Standards
FDI	Foreign Direct Investment
FGD	Focus Group Discussion
FI	Financial Intermediaries
FPIC	Free, Prior, and Informed Consent
GATE	Graduate Aptitude Test in Engineering
GBV	Gender Based Violence
GDP	Gross Domestic Production

Abbreviations	Details
GER	Gross Enrolment Ration
GM	Grievance Mechanism
GRM	Grievance Redress Mechanism
GRO	Grievance Redress Officer
GRS	Grievance Redress Service
GTS	Graduate Tracking System
GVB	Gender Based Violence
HEI	Higher Education Institutions
HIV	Human Immunodeficiency Virus
ICAR	Indian Council of Agricultural Research
ICT	Information and Communications Technology
IDP	Institutional Development Plan
IIDS	Indian Institute of Dalit Studies
IP	Intellectual Property
IPC	Indian Penal Code
IPF	Investment Project Financing
IPPF	Indigenous People Policy Framework
IPR	Intellectual Property Rights
IQA	Internal Quality Assurance
ISF	Innovator Seed Fund
IT	Information Technology
LMF	Labor Management Framework
LMP	Land Management Procedure
LMS	Learning Management System
LWE	Left Wing Extremist
MERITE	Multidisciplinary Education and Research Improvement in Technical Education
MIS	Management Information System
MOOC	Massive Open Online Course
NAAC	National Assessment and Accreditation Council
NBA	National Board of Accreditation
NCTE	National Council for Teacher Education
NEP	National Education Policy
NGO	Non-Governmental Organisation
NIRF	National Institutional Ranking Framework
NMC	National Medical Commission
NNI	Net National Income
NOC	Non-Objection Certificate
NPD	National Project Director
NPIU	National Project Implementation Unit
NPSHEW	National Policy on Safety, Health and Environment at Workplace
NSC	National Steering Committee
OBC	Other Backward Class
OHS	Occupational Health and Safety
PCI	Pharmacy Council of India

Abbreviations	Details
PD	Project Director
PDO	Project Development Objective
PG	Post-Graduate
PIP	Project Implementation Plan
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
PPP	Purchasing Power Parity
PWD	Persons with Disability
QA	Quality Assurance
RAP	Resettlement Action Plan
RCI	Rehabilitation Council of India
ROW	Right of Way
RPF	Resettlement Policy Framework
RTI	Right To Information
SA	Social Assessment
SC	Scheduled Caste
SEA	Sexual Exploitation and Abuse
SEDG	Socially and Economically Disadvantaged Groups
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SMF	Social Management Framework
SOP	Standard Operating Procedure
SPIU	State Project Implementation Unit
SSC	State Steering Committee
ST	Scheduled Tribe
STEM	Science, Technology, Engineering, and Mathematics
TA	Technical Assistance
TEI	Technical Education Institutes
TEQIP	Technical Education Quality Improvement Program
TNA	Training Need Analysis
TSG	Technical Support Group
TTF	Technology Transfer Fund
UG	Under-Graduate
UGC	University Grants Commission
UMANG	Unified Mobile Application for New-age Governance
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
URN	Unique Registration Number
WB	World Bank

Executive Summary

Introduction

The Government of India (GoI), through the Ministry of Finance (MoF), has requested the World Bank (WB) to support the preparation and implementation of the Multidisciplinary Education and Research Improvement in Technical Education (MERITE) project with the Department of Higher Education (DHE), Ministry of Education (MoE) as the lead implementing agency. The lead implementing agency, DHE, will be overall responsible for implementing the project activities, fiduciary management, and safeguard compliance for all the sub-components. The Project Implementing Agencies (selected states and engineering institutions, ATUs) will be implementing the sub-component/activities relevant to their respective areas/institutions under the overall management of the lead agency. The MERITE project complements the National Education Policy (NEP) 2020 and addresses quality, relevance, equity, access, and governance issues. Project interventions will include activities aimed at:

(i) Enhancing the environment of education and research through improvements in course offerings, pedagogical practices, assessment, as well as digitalization and instilling research practices.
(ii) Improving employability of engineering graduates by strengthening skills and entrepreneurship capabilities and deepening industry linkages.
(iii) Increasing equitable access to technical education, focusing on women and socially and economically disadvantaged groups and strengthening female careers.
(iv) Strengthening sector steering through improvements in governance, quality assurance and financing, thereby bringing about greater transparency and accountability in technical education.
(v) Enhancing the ecosystem by supporting multidisciplinary institutions and programs, phasing out the affiliation model, and ensuring sustainability of reforms.

The Project is being prepared under the World Bank's new Environment and Social Framework (ESF), which came into effect on October 1, 2018, replacing the Bank's Environmental and Social Safeguard Policies. Under the ESF, all World Bank Borrowers have agreed to comply with ten Environmental and Social Standards (ESSs) applied to investment project lending financed by the Bank. The Project recognizes the significance of and adopts the ESSs to identify and manage the environmental and social risks and impacts of this investment project. The project will be implemented from 2022-2023 to 2027-28 for five years with co-financing from the World Bank and the Ministry of Education (MoE).

This Environmental and Social Management Framework (ESMF) is needed to screen the environmental and social risks and impacts of the MERITE project activities and provide guidance to the implementing agencies in the preparation of specific assessments and plans for the subprojects during implementation, including the implementation of any plans.

Project components

The MERITE project has three components:
Component 1: Strengthening equitable access and improving teaching, learning, and multidisciplinary education. This component will focus on activities that contribute to achieving PDO indicators by enhancing student skills, participation of underrepresented groups in engineering programs, student transition rate, and share of accredited programs.
Component 2: Improving research for better skills and innovation. This component will support better research and innovation outcomes via competitive funding for research, strengthening business

incubators, seed funds to potential entrepreneurs from among faculty members, current students, or fresh graduates, and building institutional entrepreneurship and innovation culture.
Component 3: Sector steering, including governance and (HEI-) internal and external quality assurance. This component will address the quality assurance, good governance in the institutions, and overall technical assistance to the project by implementing agency.

Project Development Objective

The Project Development Objective (PDO) is to ***"to transform student learning and research in technical education in India with a focus on equity, resilience and governance in select states"***. The PDOs will be measured by the following outcome level indicators, and will be achieved over a 5-year period through:

(i) Increase in transition rate (by gender and SC/ST students) (Access & Equity).
(ii) Progress in student skills/learning (Quality).
(iii) Outcomes of Competitive Research Grants (Research Quality).
(iv) Percentage of accredited programs at participating institutions (Quality).
(v) Percentage of participating institutions with functioning Board of Governors (Governance).

Project location

The project activities would be implemented nationwide, including in some laggard states, but within the existing premises of the different engineering institutions and affiliating technical universities. The engineering institutions in India suffer from the issues of inadequate facilities, capabilities, and weak incentives that limit their research and innovation, except in the elite institutions like the Indian Institutions of Technology and National Institutes of Technology. The ratio of female to male students is also relatively low in engineering higher education, and the project aims to address some of these key challenges.

Project beneficiaries

The total number of project beneficiaries are expected to be around 0.4 million over the project period. This will include students, technical institutions, including faculty and non-teaching staff, state technical education departments, AICTE, and Government officials and agencies involved in technical education sector. (Refer to Table 1.1: List of Project Beneficiaries for details on project beneficiaries).

Potential Key Environmental and Social Impacts

Environmental and Social Risk Classification (ESRC) of the MERITE project has been rated as 'Moderate'; as most of the impacts are negligible, short-term, site-specific, and easily mitigated predictably.

The potential environmental risks will mostly be related to ESS1 featuring EHS/OHS, resource use, and waste management issues associated with aspects like (a) upgradation / rehabilitation/refurbishment of existing buildings or parts of the building/block - including associated minor civil works; (b) establishment and/or renovation of specific research labs/facilities; (c) augmentation of digital infrastructure in the institutions and (d) organization of extensive training/capacity building activities under Component 1.

No adverse impacts such as involuntary land acquisition and effects on indigenous peoples, biodiversity, and habitats are expected. Social risks related to the Project that can be mitigated/managed are related to:

(i) labor and working conditions of construction contractors as delineated under ESS2.
(ii) community health and safety as indicated in ESS4.
(iii) ensuring participation of vulnerable groups[1] (as defined under ESS7) through equitable access to project benefits and opportunities.
(iv) risks related to excluding stakeholders' consultations and engagement as implied in ESS10.
(v) hiring of child labor for civil works.

Risk related to labor management, including influx, is not substantial given the nature of small-scale rehabilitation works. However, considering that the envisioned civil works would be mainly undertaken in the institutions, the issues related to GBV/SEA would require proper management.

Potential Environmental and Social Impacts Related to Project Siting

- Site-Specific Land Cover and Land Use Changes (ESS 1, 3, 6)
- Drainage congestion and waterlogging (ESS 1, 3, 4)
- Impacts on Vulnerable and disadvantaged groups/communities/individuals (ESS 7)

Potential Environmental and Social Impacts during Project Implementation

- Air Pollution (ESS 1, 3, 4, 6)
- Noise Pollution (ESS 1, 3, 4)
- Water Pollution (ESS 1, 3, 4, 6)
- Generation of Solid Waste and Hazardous Waste (Including Medical Wastes) (ESS 1, 3, 4, 6, 8)
- Occupational Health & Safety (ESS 1, 2, 4)
- Impact on labor, working conditions, and labor risks, including risks of child labor and forced labor, and human trafficking (ESS 2)
- Impact Associated with Campus Living Condition (GVB, Social Security, Sanitation, and Health-Hygiene).
- Impact on creating social discrimination for the most disadvantaged groups, vulnerable women/youth/disabled persons
- Impacts on Small Ethnic Communities (Impacts on Indigenous People) (ESS 7)
- Impact on Cultural Heritage (ESS8)

Environmental and Social Impacts during Post Project operational Period

- Generation of Medical Waste, Solid Waste, and Hazardous Waste (ESS 1, 3, 4)
- Noise Generation (ESS 1, 3, 4, 8)
- Increased Risk of Accidents (ESS 1, 3, 4)
- Impact Associated with on Campus Living Condition (GVB, Social Security, Sanitation, and Health-Hygiene) at Post Project Period

[1] Under the MERITE project, the term 'vulnerable group' has been used to define communities that meet the criteria set out in paragraphs 8 and 9 of the ESS 7 standards. Vulnerable persons also include but are not limited to: people belonging to SC, women, and people with disability; people from remote/rural areas; and SEDGs (Socially and Economically Disadvantaged groups).

Environment and Social Management Framework

As the technical evaluation (e.g., feasibility studies, detailed designs) and specific intervention locations under the project are not identified and/or ready, and their particular impacts are not known by project appraisal, a framework approach is adopted. Respectively, following the ESS1, an Environmental and Social Management Framework (ESMF) has been prepared, which specifies rules and procedures for the activities and for preparing adequate site-specific Environmental and Social Management Plans (ESMPs) taking into consideration the Bank's Environmental, Health, and Safety Guidelines (EHSGs). The ESMF covers the following: (i) screening criteria to identify potential E&S risks and impacts on physical, cultural resources, and existing land uses, following the negative list; (ii) guidance for preparing a site-specific ESMP or ESMP Checklist, which would include the monitoring plans; (iii) mitigation measures for possible impacts of different proposed activities and subprojects to be supported by the project; (iv) requirements for monitoring and supervision of the implementation of ESMPs, and implementation arrangements; (v) overview of the capacity of MoE (the project implementing agency) for E&S risk management and capacity building activities that would include other parties in mitigating potential environmental and social risks.

Furthermore, the client Conducted a social assessment (SA) as part of the ESMF, which includes: (i) stakeholder identification/mapping; (ii) stakeholder analysis of expectations, concerns, and issues; (iii) assessments of positive and negative impacts; (iv) identification and assessment of vulnerable and disadvantaged groups who may face disproportionately high negative impacts or challenges in receiving project benefits; and (v) an equity action plan to mitigate the adverse social risks and impacts and enhance positive benefits, particularly for the disadvantaged.

General Principle for Environmental and Social Management (ESS 1-10)

Due to the nature of some of the proposed project activities under MERITE and their potential environmental and social impacts, the project is rated as 'Moderate' as per the World Bank ESS1 risk category. Therefore, the ESMF is prepared based on the following principles that can lead the planning and implementation of the project activities.

- The TSG of MERITE is responsible for the compliance with national policies, regulations, and World Bank ESSs and Guidelines, as mentioned in this ESMF report. The ESMF will serve as the basis for ensuring the safeguards compliance.
- TSG is responsible for obtaining environmental clearance from DoE/MoEF, local government agencies, and World Bank as required.
- ESMPs need to be prepared for activities as determined by DoE. If DoE's ESIA guideline requirements differ from WB ESF, the more stringent standards and conditions will apply.
- If any sub-projects with impacts identified in ESIA which may categorize the project as substantial or high risk (according to ESF) will not be eligible for WB's financing.
- Planning and designing any additional activities should ensure minimal assessment of cumulative impacts.
- TSG should ensure the participation of stakeholders (especially local communities) in the planning, implementation, and monitoring of each sub-components and associated activities through the participating institutions.
- TSG and participating states/institutions will ensure an appropriate institutional setup for implementing environmental and social management plans. TSG and SPIUs also ensure that

bidding documents for construction contractors have specific clauses to ensure implementation of ESMP, as required.

- Contractors to be engaged for construction/ renovation/ expansion/ repair and maintenance under the project will ensure compliance with the GBV/SEA guidelines. The provision of a First Aid Kit at camp/worksite with proper drinking water and sanitation facilities, workers' health and safety measures, and personal protective equipment shall be ensured.
- TSG/MERITE will disclose the project interventions and potential impacts publicly.
- During implementation, the TSG/MoE will supervise and monitor E&S risks and impacts of the entire project activities per the E&S instruments and documents and ensure all supervision records and project sites are accessible to WB.

1. Chapter 1: Introduction

1.1. Project Background

The World Bank is providing support to the Government of India (GoI) to improve the quality and governance of technical education in select Indian states. Multidisciplinary Education and Research Improvement in Technical Education (MERITE) complements the National Education Policy (NEP) 2020 and addresses quality, relevance, equity, access, and governance issues. The Project extends the basis established by implementing the Technical Education Quality Improvement Project series (3 phases between 2004-2021) that helped initiate a reform process promoting excellence, autonomy, and accountability. Project interventions will include a tailored package of investments/activities aimed at: (i) improving service delivery to provide student support services designed to improve equitable access, skills, and transitions to the labor market; (ii) improving the research and innovation environment through research funds for faculty and students; and (iii) building/strengthening governance and quality assurance at the institute and system level.

The Project is being prepared under the World Bank's new Environment and Social Framework (ESF)[2], which came into effect on October 1, 2018, replacing the Bank's Environmental and Social Safeguard Policies. Under the ESF, all World Bank Borrowers have agreed to comply with ten Environmental and Social Standards (ESSs) applied to investment project lending financed by the Bank. The Project recognizes the significance of and adopts the ESSs to identify and manage the environmental and social risks and impacts associated with this investment project. The reviews undertaken by the Bank have classified environmental and social risks as moderate. As a response, PIU/TSG, as an implementing agency, has developed several key instruments to address the same, such as ESS2, relates to Labor and Working Conditions and expects the Borrowers to develop labor-management procedures (LMP), ESS 7 ensures that all students and faculty in the project institutions have equal opportunity to avail the benefits of the Project with substantial improvement in the performance of students with special attention to the needy and ST and SC categories, and ESS 10 which defines a strategy for stakeholder engagement, including public information disclosure and consultations, throughout the preparation and implementation of the proposed project. All ESSs will be applicable for MERITE project except ESS 9 (Financial Intermediaries).

1.2. About the Project

The Multidisciplinary Education and Research Improvement in Technical Education (MERITE) Project aims to support the modernization and resilience-building of technical education with a focus on strengthening equitable access and enhanced quality of teaching, learning and research in India. The Project will support the modernization of the education sector through NEP 2020-aligned reforms and focuses on: (i) Enhancing the environment of education & research through course offerings, pedagogical practices & assessment, digitalization; (ii) Improving employability of engineering graduates by strengthening skills & entrepreneurship capabilities; (iii) Increasing equitable access with a focus on women and SEDGs; (iv) Strengthening sector steering through improvements in governance & quality assurance; (v) Enhancing ecosystem by supporting multidisciplinary institutions & programs.

1.3. Project Components

The three major components proposed under the project include:

[2] Environmental and Social Standards of the World Bank.

Component 1: Improving quality and equity in selected institutions

This component will focus on activities that contribute to achieving PDO indicators on improving student skills, participation of underrepresented groups in engineering programs, student transition rate, and share of accredited programs. Activities will be organized under 3 sub-components:

1.1 Strengthening institutions to enhance student skills and employability: Under this sub-component the project will seek to strengthen selected institutions with the goal of – (a) improving student learning and employability; (b) strengthening faculty capabilities; (c) enhancing the labor-market relevance of engineering programs; and (d) modernizing the education environment.

1.2 Promoting equitable access: To improve transition rate of undergraduate students in project institutions, the sub-component will finance developmental courses and the development and distribution of materials/educational resources, including in Indian languages, to support students catch-up and address learning gaps. Proactive academic advisement by faculty, counseling and peer support services for students will be established and strengthened to improve student adjustment.

1.3 Introducing multidisciplinary education: The project will support institutions to introduce multidisciplinary courses or programs. Institutions will develop and submit proposals defining the scope and level of multidisciplinary. Institutions thus selected will receive support from leading institutions of technology with experience implementing multidisciplinary courses/programs to operationalize and implement their multidisciplinary approach.

Component 2: Improving research for better skills and innovation

This component will support better research and innovation outcomes via competitive funding for research and technology transfer; strengthening of business incubators; seed funds to entrepreneurs; and building an institutional entrepreneurship and innovation culture. This component will also focus on addressing barriers faced by women faculty in pursuing research and innovation opportunities. A special effort will be made to target women faculty/student members to apply for research, technology transfer grants, and innovation seed funding will be launched.

2.1 Collaborative Research Fund (CRF) and Ph.D. programs: This sub-component will support better research outcomes and strengthening the quality of Ph.D. training. It will focus on multidisciplinary/multi-sectorial research and technology development in both public and private higher education institutions (HEIs) to address specific strategic sectors for the country's socio-economic development through a competitive Collaborative Research Fund (CRF).

2.2 Developing innovation eco-systems: This sub-component will establish skills labs and incubators linked to the R&D activities, provide technology transfer funds to incubatees, seed funding to innovators to create start-ups, and deliver IPR support.

2.3 Institutional innovation and entrepreneurship culture: This sub-component will support the MERITE institutions to develop an innovation and entrepreneurship culture. They are encouraged to collaborate closely with communities on "Technology Transfer for Public Good" in line with Unnat Bharat Abhiyan. They will assess the technological, livelihood, and infrastructure requirements for a quality life in these areas and then utilize their knowledge, prepare workable action plans for the selected areas.

Component 3: Sector steering, including governance and (HEI-) internal and external quality assurance

This component will support the states and institutions to build their capacity through peer exchange and training measures on a large scale through dedicated grant schemes. It will also help revise institutional structures, by supporting the establishment of boards and curricula consultation mechanisms, bringing in employers and other key stakeholders and providing strategic directions for institutions.

3.1 Quality assurance (QA): Work under the sub-component will be motivated by i) the need to increase QA capacity at the state and institutional level and ii) the NEP dictum of "universality of accreditation" which necessitates states and institutions to make significant progress regarding accreditation (and strong institution-internal QA as a key enabling factor).

3.2 Governance: A core set of activities under this component will be training and other capacity building measures for well-functioning institution-level governance structures and mechanisms (including dynamic and active Boards of Governors which connect the institutions effectively to their social and economic environment).

3.3 Leadership training and academic careers: This sub-component will support for training and development for faculty and institutional leadership. Training for faculty will focus on technical areas designed to upgrade their subject content knowledge and bring it in line with currently in demand standards and topics, and on didactics and pedagogical methods for improved student learning, including the use of digital tools for teaching and student assessments. The improvement of academic careers through systemic measures (like improvement of the recruitment process) as well as training should help close supply-side gaps concerning provision of teaching.

3.4 Project Management: While Technical Assistance will be provided under various components and sub-components, there might be additional areas where it could be needed. Further, this sub-component will cover the costs associated with the management of the project (including PIU costs).

1.4. COVID-19

The project interventions will also address the challenges posed by the spread of COVID-19 and will ensure adequate measures to minimize the adverse effects of COVID- 19 on students, teachers, and the education system; assuring continuity in the provision of education services; develop an improved and more resilient education system in participating states/institutions. The WB's COVID-19 education response strategy has 3 phases – (1) Coping, (2) Managing Continuity, and (3) Improvement and Acceleration. In the first phase, the coping will include a host of digital-centric interventions and strengthening the MIS and ICT-enabled approaches. The second phase focuses on the safe reopening of institutions and unique plans for the students with special needs. Lastly, the third phase will support analytical activities such as rapid assessment of the effects of COVID-19 on education in the state and enabler activities such as the development of a policy framework for coping with future shocks.

1.5. Project Beneficiaries[3]

Main project beneficiaries are students enrolled in technical education institutions in participating states, academic staff including institutional leaders, participating technical education institutes, State Departments of Technical Education in selected states, central level regulatory bodies such as the AICTE and NBA and employers. The table below provides indicative list of primary beneficiaries that are expected to be enrolled and benefited at the project initiation and closing:

[3] Based on TEQIP-III experiences.

Table 1.1: List of Project Beneficiaries

Category	Expected at the baseline	Expected Female	Expected SC/ST	Expected PWD	Expected to benefit (by project closing)	Expected Female	Expected SC/ST	Expected PWD
UG students	2,00,000-3,00,000	50,000-60,000	1,00,000-1,50,000	3,000	12,00,000-14,00,000	4,00,000-5,00,000	2,00,000-3,00,000	6,000
PG students	50,000-60,000	20,000-25,000	8,000-9,000	-	1,00,000-1,20,000	40,000-50,000	16,000-18,000	-
Faculty	10,000-11,000	3,000-4,000	1500-2000	-	14,000-15,000	4200-5000	2100-3000	-

Further to the above, the project is expected to benefit the following beneficiaries through its various components/subcomponents:

Stakeholders	No. of Beneficiaries (Tentative)
Chancellor/ Vice-Chancellor/ Directors/ Principals	200-300
Non-Teaching Staff	6,000-8,000

1.6. Project location

The project is expected to be implemented nationwide, but the exact project locations will be determined during the implementation stage only. However, some of the universities and institutions under the previous phase of the TEQIP series are expected to be included, including states/districts and institutions from the aspirational/LWE areas with significant indigenous population, besides other marginalized and vulnerable communities. Such group makes up 11 and 3 percent respectively for Scheduled Caste (SC) and Scheduled Tribe (ST) of UG engineering students.

In terms of the engineering institutions, most of the participating institutions are expected to be located in urban/semi-urban areas and face challenges of underdeveloped facilities, inadequate capabilities, and weak incentives limiting their research and innovation, except in the elite institutions like the Indian Institutions of Technology and National Institutes of Technology. In the Indian institutions, per student R&D spending ($91) is lower when compared to Russia ($280), China ($750), and Brazil ($1500). Research and laboratory facilities are inadequate, leading to a lower quantity and quality of research publications[4].

[4] Oyalka, P. et al. (2016): Factors Affecting the Quality of Engineering Education in the Four Largest Emerging Economies, Higher Education 68 (6): 977- 1004

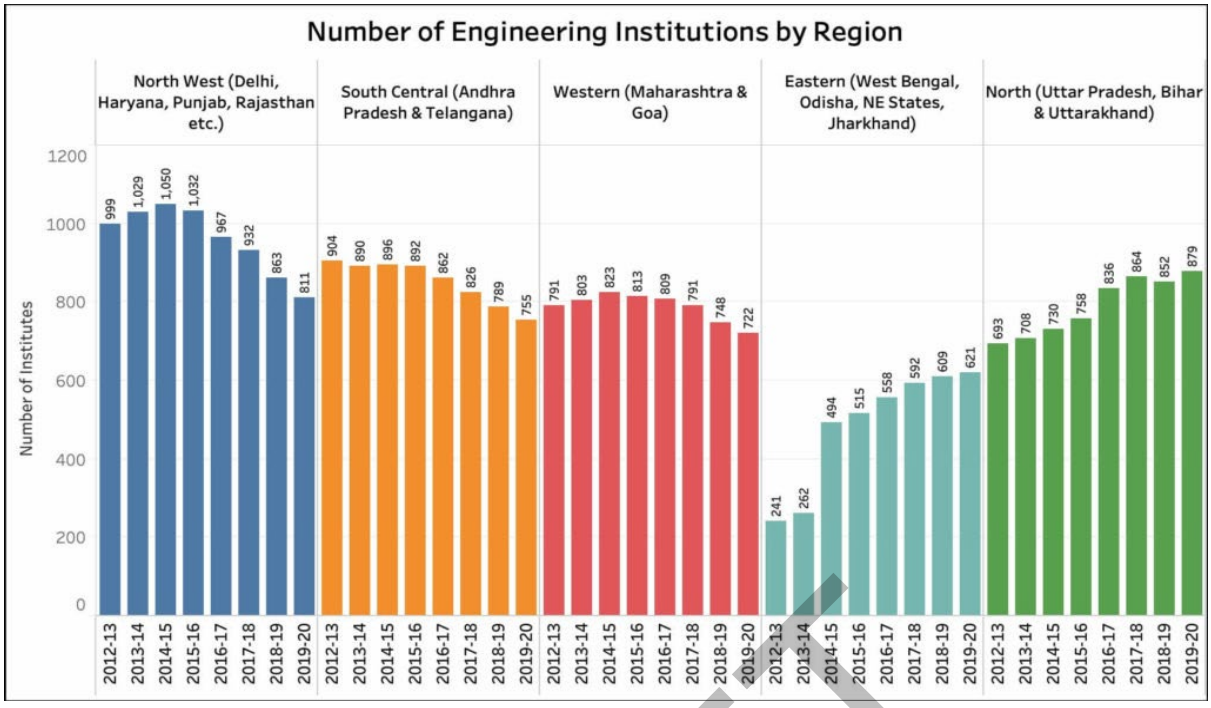

Figure 1.1: Engineering Institutions by Region in India

2. Chapter 2: Purpose of the ESMF

The ESMF is intended to be used as a practical tool during the formulation, design, implementation, and monitoring of components and sub-components of this project. This document will be followed during project preparation and execution to ensure environmental and social integration in the planning, implementation, and monitoring of project-supported activities. To ensure good environmental and social management in the proposed MERITE project, the ESMF will guide pre-investment works/studies (such as environmental and social screening, environmental and social assessment, environmental and social management plans, etc.), provide a set of steps, process, procedure, and mechanism for ensuring an adequate level of environmental and social consideration and integration in each investment in the project-cycle; and describes the principles, objectives, and approach to be followed to avoid or minimize or mitigate impacts. The ESMF will facilitate compliance with the Government of India's policies, acts, and rules, as well as with the World Bank's environmental and social standards (ESSs) of the newly adopted Environmental and Social Framework (ESF), and guide to prepare and conduct the detailed ESMPs of the later stages of the MERITE as appropriate to the project components/sub-components. While this ESMF document has been prepared to identify the potentially negative impacts of the MERITE, the specific objectives are to:

- integrate the environmental and social concerns into the identification, design, and implementation of all project interventions to ensure that those are environmentally sustainable and socially feasible;
- ensure that all relevant environmental and social issues are mainstreamed into the design and implementation of the project activities;
- consider in an integrated manner the potential environmental and social risk, benefits, and impacts of the project and identify measures to avoid, minimize and manage risks and effects while enhancing benefits;
- ensure compliance with national laws and regulations and World Bank requirements. The ESMF presents potential impacts of the MERITE, mitigation, enhancement, contingency and compensation measures, environmental and social management and monitoring plan, and institutional framework.

2.1. Rationale of ESMF

The project is expected to be implemented nationwide, but the exact project locations will be determined during the implementation stage only. It is expected that some of the project districts are likely to have a significant indigenous population, besides other marginalized and vulnerable communities. A considerable percentage of the students seeking admission in the various universities, and institutions supported by the project, are expected to be from indigenous and other marginalized and vulnerable communities. Besides, the component interventions' number, type, and locations will be decided over the project implementation stage. Beneficiary groups and sites for any small infrastructure development will be known at the implementation level. Therefore, environmental and social issues and those impacts could not be identified and specified for mitigation at this preparation stage. Hence, there is a need for procedural guidance for environmental and social appraisal and management. Therefore, the MERITE project has prepared this Environmental and Social Management Framework (ESMF) as a constituent part for guidance in the implementation stage. The rationale for developing the framework is based on the consideration that all activities under the project components and sub-components will only be identified and prepared during the implementation of the MERITE. Therefore, detailed site investigations will be carried out as part of identifying specific project activities and related designs at the selected locations to ascertain the

precise nature of the environmental and social impacts. The ESMF will provide the necessary background for environmental and social considerations, a checklist of potential issues of the project activities to be considered and built into the design of the project so that socially sustainable implementation can take place, including environmental and social screening of subprojects and guidance on the preparation of specific assessments and plans. This ESMF will also serve as the guideline for the staff designated by the implementing agencies - the PIU/TSG to oversee and monitor the environmental and social safeguards compliance of the project components coming under their implementation responsibility. The ESMF will be a living document reviewed and updated periodically as needed.

2.2. Approach and Methodology of the ESMF

The ESMF was developed using research methodology i.e., divided into two categories, and depicted in Figure 2.1 below:

Primary Research: This mainly contains the consultations conducted with different stakeholders. The primary stakeholder consultations started in October 2021 with different states, IITs, AICTE, UGC, NBA, etc. The detailed list of stakeholders consulted and issues raised by them are mentioned under the Stakeholder analysis segment in this document.

Secondary Research: Secondary sources of information have been referred to in order to gain an understanding of the environmental and social context of India. These sources include TEQIP-III reports, AISHE reports, Census 2011 report, National Crime Records Bureau Report, UNICEF reports, Global Gender Gap report 2021, NEP 2020, etc. Legal and regulatory documents, standards, guidelines and frameworks were referred to – and included the World Bank's Environmental and Social Framework in addition to the texts of applicable laws and regulations. The detailed list of references is placed at Annex-1.

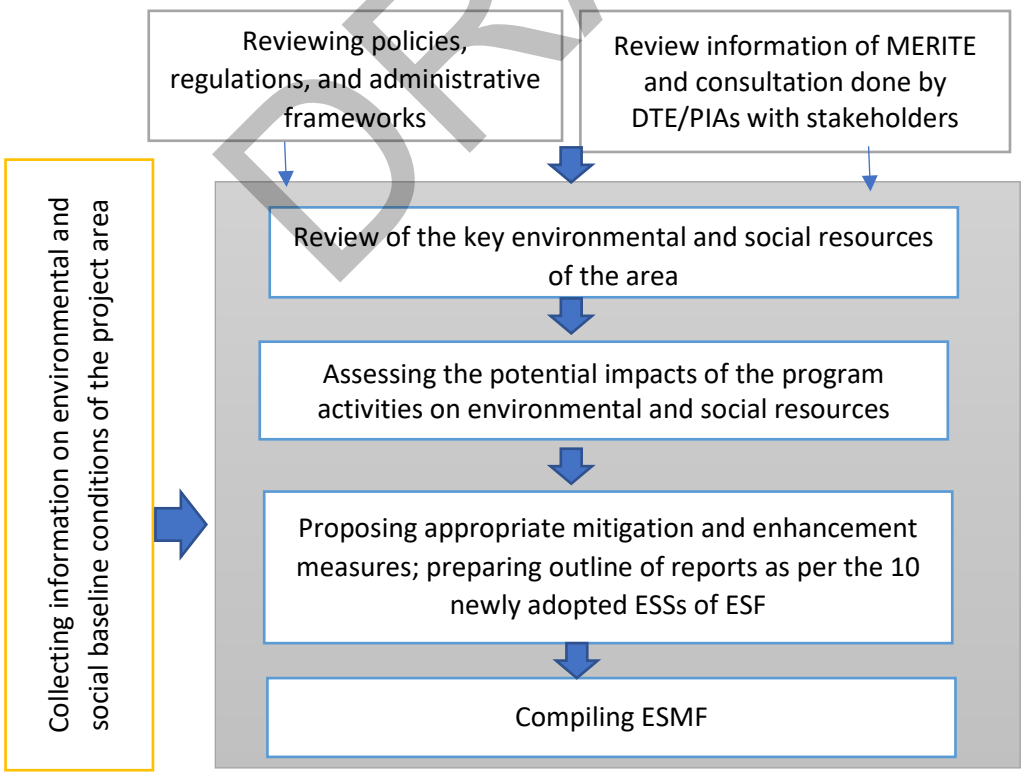

Figure 2.1: ESMF Preparation Approach

2.3. Overview of the contents

Following this section, this document details the ESMF in a methodological manner. It presents the legal and regulatory framework relevant to the MERITE Project and then elaborates on the ESMFs. Throughout the process, the past experiences of TEQIP-III, consultations with stakeholders under MERITE and the information derived from them have been the key guiding tenets.

2.4. Structure of this ESMF

Chapter 1 presents a simplified description of the MERITE project, its various components and other salient information relevant for environmental and social assessment. Chapter 2 talks about the rational of ESMF and methodology used for the research. Chapter 3 reviews the prevailing WB and national regulatory requirements relevant to environmental and social assessment. Description of the baseline environmental conditions is presented in Chapter 4. Description of the baseline social conditions is presented in Chapter 5. Environmental and Social management steps to be followed during the program and also Screening, assessment and prediction of potentially negative environmental and social impacts have been discussed under Chapter 4 and 5, the chapter has also presented the outline of the environmental and social management plan (ESMP) and as well as the appropriate mitigation measures to address these negative impacts. Chapter 6 highlights the land management framework to be followed in MERITE in case of land acquisition under the project. Chapter 7 throws light on the problems faced by the students/ facilities in technical institutions and proposes to develop an Equity Action Plan by each participating institute. Chapter 8 describes burrowers' capacity assessment, institutional framework and capacity building plan to implement the ESMF. Finally, Chapter 9 elaborates the requirements of Stakeholder Engagement, Grievance Mechanism and Disclosure along with describing the consultations that have been carried out with the stakeholders and also the requirements of similar consultations to be carried out while preparing the ESMPs.

3. Chapter 3: Relevant Legal Framework and Development Strategies

This chapter presents a review of the national policy, legal, and regulatory framework relevant to the environmental and social aspects of the MERITE Project. In addition to the national environmental and social framework, WB ESF and applicability to the project is discussed below:

3.1. Applicable Laws, Regulations and Standards of the Government of India

Table 3.1: Applicable Laws, Regulations and Standards of the Government of India

National Law/ Regulation/Standard	Key Features	Applicability to the MERITE project
Social Aspects		
Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act 1989	The Act aims to prevent the commission of offences of atrocities against the members of Scheduled Castes (SC) and Scheduled Tribes (ST), to provide for Special Courts for the trial of such offences and the relief and rehabilitation of the victims of such offences and matters connected therewith or incidental thereto.	The Act is applicable as the project will involve participation from people belonging to different vulnerable groups, including scheduled tribes.
Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013	The Act provides for protection against sexual harassment of women at the workplace and the prevention and redressal of complaints of sexual harassment. It mandates the institutionalization of an Internal Complaints Committee at all administrative units/offices with the representation of women equivalent to at least one-half of the total members of the committee and a Local Complaints Committee in every district. It also mandates training to enhance the knowledge levels of employees on forms of sexual harassment, complaint mechanism and inquiry process.	The MERITE project aims to work closely with stakeholders, involving women at all levels. The Act will create a conducive environment for women employees – faculty, including non-teaching staff, college heads, and other women employees at state and institution level.
The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Rules, 1996	The Act gives effect to the Proclamation on the Full Participation and Equality of the People with Disabilities in the Asian and Pacific Region. It mandates the constitution of the Central and State Coordination Committee for prevention and early detection of disabilities, promoting inclusion in education and employment opportunities, developing schemes to provide aids and appliances to PwDs, recognition of institutions for PwDs and sponsoring research in the above-identified areas.	The act is relevant and directly feeds into the MERITE to promote assistive technology pathways to strengthen the provision of teaching and learning material for PwD and have a positive effect on the learning levels of PwD students.
Equal Remuneration Act, 1976	To provide for the payment of equal remuneration to men and women workers	Women engaged in the activities supported by the

National Law/ Regulation/Standard	Key Features	Applicability to the MERITE project
	and the prevention of discrimination, on the ground of sex, against women in the matter of employment and for matters connected therewith or incidental thereto.	project should be paid at par with their male counterparts.
The Maternity Benefit Act, 1961	The maternity benefit Act 1961 protects the employment of women during the time of their maternity and entitles them of a 'maternity benefit' - i.e., full paid absence from work - to care for her child. The act is applicable to all establishments employing ten (10) or more persons.	Women engaged in the will be entitled to the benefit as per the act guidelines.
The Child Labor (Prohibition and Regulation) Act	The Act aims to regulate the hours and the working conditions of child workers and to prohibit child workers from being employed in hazardous industries.	The refurbishment work will require the engagement of labor/workers. Still, no child labor below 14 years will be engaged in a hazardous activity that may adversely impact the child's physical, psychological or mental development.
Industrial Disputes Act, 1947	Provided for same wages and other facilities to women workers and provision of creche facilities, feeding intervals, etc., at the workplace.	Women engaged in the will be entitled to the benefit as per the act guidelines.
Guidelines for Management of Sanitary Waste, 2018	The Guidelines, as per the Solid Waste Management Rules, 2016, provide recommendations for the safe disposal of sanitary waste, comprising of used sanitary towels or napkins, tampons, and any other similar waste.	The Guidelines apply to the activities supported by the project (college toilets, hostels, labs, etc.) and have the potential for the creation of sanitary waste.
National Education Policy 2020	The Policy introduced a new and forward-looking vision for India's Education system to adjust and thrive in the rapidly changing knowledge landscape. The priority areas identified include strengthening the Central Advisory Board of Education, effective resourcing and governance, institutional restructuring and consolidation, technology integration, capacity building of teachers and affordable, quality, equitable and inclusive education for all.	The recently introduced Policy has a strong focus on strengthening the culture of inclusion, innovation, and institution in the education sphere of India and thus becomes relevant to the project at hand. MERITE is aligned with the provisions of NEP 2020.
Environmental Aspects		
Environment Protection Act, 1986 (to be read with The Environment Protection Rules, 1986)	The Act applies to all areas where the project activities impact the local as well as national environment.	Yes

National Law/ Regulation/Standard	Key Features	Applicability to the MERITE project
The Air (Prevention and Control of Pollution) Act, 1981 (Prevention and Control of Pollution) Rules, 1983)	This Act made for taking care of any building, structure or property used for industrial or trade purposes where pollution occurs or emitting any air pollutant into the atmosphere takes place.	Yes
The Water (Prevention and Control of Pollution) Act, 1974 (amended 1988)	This Act controls to every outlet that includes any conduit pipe or channel, open or closed, carrying sewage or trade effluent or any other holding arrangement which causes or is likely to cause, pollution.	Yes
The Water (Prevention and Control of Pollution) Cess (Amendment) Act, 2003	The Act applies to industries which includes any operation or process, or treatment and disposal system, which consumes water or gives rise to sewage effluent or trade effluent, but does not include any hydel power unit.	Yes
Noise Pollution (Regulation & Control) Rules 2000	The rule applies to: 1. Industrial area 2. Commercial area 3. Residential area 4. Silence zone (where an area comprising not less than 100 meters around hospitals, educational institutions and Courts may be declared as silence area/zone for the purpose of these rules).	Yes
EIA notification on Environment Clearances, 2009	It mandates that certain projects envisaged to be polluting for the environment have to seek prior approval from the Ministry of Environment and Forests to set-up the project. A list of projects along with the procedure required to be undertaken to sought the approval from Government is clearly delineated under the law.	No
Forest (Conservation) Act, 1980	The Act is applicable to any project which requires forest land for construction. Depending on the size of the tract to be cleared, clearances are required.	No
Biological Diversity Act, 2002	The Ministry of Environment and Forests has enacted the Biological Diversity Act, 2002, following the Convention on Biological Diversity signed at Rio de Janeiro in 1992, of which India is a party. This Act is meant to "provide for the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising out of the use of biological resources,	No

National Law/ Regulation/Standard	Key Features	Applicability to the MERITE project
	knowledge and for matters connected therewith or incidental thereto."	
The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights), 2006	The Act recognizes and vests the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded, and provides for a framework for recording the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land. The Act may be applicable in case of forest land used for TC or in the immediate vicinity.	No
Batteries (Management and handling) Rules, 2001	The Rule applies to every manufacturer, importer, re- conditioner, assembler, dealer, recycler, auctioneer, consumer and bulk consumer involved in manufacture, processing, sale, purchase and use of batteries or components.	Yes
E-waste (Management and Handling) Rules, 2011	The Rules applies to every producer, consumer or bulk consumer involved in the manufacture, sale, purchase and processing of electrical and electronic equipment or components as specified in Schedule-I, collection center, dismantler and recycler of e-waste.	Yes
Gas Cylinder Rules, 2004	The Act applies to every person who intends to fills any cylinder with compressed gas or possess, import or transport any cylinder filled with any compressed gases or any person desiring to manufacture cylinders, valves, LPG regulators attached to self-closing valves, multi-function valves and other fitting and also every person in charge of/using gas cylinders.	Yes
The Ancient Monuments and Archaeological Sites and Remains Act, 1958 & Its amendments till 1992	Under sub-rule 32 of the ancient monuments and archaeological sites and remain rules, 1959 and notification issued in 1992, area up to 100 m from the protected limits and further beyond it up to 200 m near and adjoining protected monument have been declared to be protected and	Yes

National Law/ Regulation/Standard	Key Features	Applicability to the MERITE project
	regulated areas, respectively, for purpose of both mining operation and construction. Any repair, addition or alternation and construction/reconstruction within these areas need prior approval of the Archaeological Survey of India	
The Public Liability Insurance Act and Rules, 1991	The Act mandates companies to take public insurance for its employees	Yes

3.2. Applicable Environmental and Social Standards of the World Bank

Table 3.2: Applicable Environmental and Social Standards of the World Bank

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
World Bank Environment and Social Policy for Investment Project Financing	It sets out the mandatory requirements of the Bank in relation to the projects it supports through Investment Project Financing.	The types of E&S risk and impacts that should be considered in the environmental and social assessment. The use and strengthening of the Borrower's environmental and social framework for the assessment, development and implementation of World Bank financed projects where appropriate.	Applicable to the MERITE project and it's all activities
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Identify, assess, evaluate, and manage the environmental and social risks and impacts consistent with the ESF. Adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities	The types of E&S risk and impacts that should be considered in the environmental and social assessment. The use and strengthening of the Borrower's environmental and social framework for evaluating, developing, and implementing World Bank-financed projects where appropriate.	This standard is relevant; the ESMF for the project has been designed as per the provisions of ESS1. Detailed ESIA and ESMP will be prepared in addition to this ESMF, where required.

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
ESS2: Labor and Working Conditions	Promote safety and health at work. Promote the fair treatment, nondiscrimination, and equal opportunity of project workers. Protect project workers, with emphasis on vulnerable workers. Prevent the use of all forms of forced labor and child labor. Support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. Provide project workers with accessible means to raise workplace concerns	Requirements for the Borrower to prepare and adopt labor-management procedures. Provisions on the treatment of direct, contracted, community, and primary supply workers and government civil servants. Requirements on terms and conditions of work, non-discrimination, equal opportunity, and workers' organizations. Provisions on child labor and forced labor. Requirements on occupational health and safety, in keeping with the World Bank Group's Environmental, Health, and Safety Guidelines (EHSG).	This standard is relevant; **a standalone Labor Management Procedures (LMP) has been prepared in line with the provisions under ESS2**. Other site-specific management plans (e.g., OHS) will be designed during the construction phase, as suggested by the ESMP, to be ready, defining measures to address this ESS2.
ESS3: Resource Efficiency and Pollution Prevention and Management	Promote the sustainable use of resources, including energy, water and raw materials. Avoid or minimize adverse impacts on human health and the environment caused by pollution from project activities. Avoid or minimize project-related emissions of short and long-lived climate pollutants. Avoid or minimize generation of hazardous and non-hazardous waste • Minimize and manage the risks and impacts	Requires an estimate of gross greenhouse gas emissions resulting from the project (unless minor), where technically and financially feasible. Requirements for managing wastes, chemicals, and hazardous materials, and contains provisions to address historical pollution. ESS-3 refers to national law and Good International Industry Practice, in the first	The standard is relevant; the activities supported by the project, specifically on infrastructure strengthening, present opportunities to embed interventions that promote resource-use efficiency and pollution reduction.

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
	associated with pesticide use	instance, the World Bank Groups' EHSGs.	
ESS4: Community Health and Safety	Anticipate or avoid adverse impacts on the health and safety of project-affected communities during the project life-cycle from routine and non-routine circumstances. Promote quality, safety, and climate change considerations in infrastructure design and construction, including dams. Avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials. Have in place effective measures to address emergency events. Ensure that safeguarding personnel and property are carried out to avoid or minimize risks to the project-affected communities.	Requirements on infrastructure, taking into account safety and climate change and applying the concept of universal access, where technically and financially feasible. Requirements on traffic and road safety, including road safety assessments and monitoring. Addresses risks arising from impacts on provisioning and regulating ecosystem service. Measures to avoid or minimize the risk of water-related, communicable, and non-communicable diseases. Requirements to assess risks associated with security personnel and review and report unlawful and abusive acts to relevant authorities.	In the MERITE project, there is likely to be direct exposure to increased construction-related traffic and equipment, especially on campus traversing settlement areas with limited carriageway/roadway width, dust levels, noise and emission levels in construction sites, expansion of labs, and other infrastructure development/renovation may lead to health and safety risks of students and workers. Site-specific management plans will be developed.
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Avoid or minimize involuntary resettlement by exploring project design alternatives. Avoid forced eviction. Mitigate unavoidable adverse impacts from land acquisition or restrictions on land use by providing compensation at replacement cost and assisting displaced persons in their efforts to improve, or at least restore, livelihoods and living standards to pre-	Applies to permanent or temporary physical and economic displacement resulting from different types of land acquisition and restrictions on access. Does not apply to voluntary market transactions, except where these affect third parties. Provides criteria for "voluntary" land donations, sale of	This standard is not relevant as the project does not acquire private land.

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
	displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. Improve living conditions of poor or vulnerable persons who are physically displaced by providing adequate housing, access to services and facilities, and security of tenure. Conceive and execute resettlement activities as sustainable development programs.	community land, and parties obtaining income from illegal rentals. Prohibits forced eviction (removal against the will of affected people, without legal and other protection, including all applicable procedures and principles in ESS5). Requires that acquisition of land and assets happens only after payment of compensation and resettlement has occurred. Requires community engagement and consultation, disclosure of information, and a grievance mechanism.	
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Protect and conserve biodiversity and habitats. Apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. Support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	Requirements for projects affecting areas that are legally protected designated for protection or regionally/ internationally recognized to be of high biodiversity value. Requirements on sustainable management of living natural resources, including primary production and harvesting, distinguishing between small-scale and commercial activities. Requirements relating to primary suppliers, where a project is purchasing natural	This standard is not relevant.

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
		resource commodities, including food, timber and fiber.	
ESS 7: Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities	Ensure that the development process fosters full respect for affected parties' human rights, dignity, aspirational, identity, culture, and natural resource- based livelihoods. Promote sustainable development benefits and opportunities in a manner that is accessible, culturally appropriate, and inclusive. Establish and maintain an ongoing relationship based on meaningful consultation with project-affected parties. Obtain the Free, Prior, and Informed Consent (FPIC) of affected parties. Recognize, respect, and preserve the culture, knowledge, and practices of Indigenous Peoples, and to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.	Applies when the Indigenous Peoples are present or have a collective attachment to the land, whether they are affected positively or negatively regardless of economic, political, or social vulnerability. The option to use different terminologies for groups that meet the criteria set out in the Standard. The use of national screening processes, providing these meet World Bank criteria and requirements. Coverage of forest dwellers, hunter-gatherers, pastoralists, and other nomadic groups. Requirements for meaningful consultation tailored to affected parties and a grievance mechanism. Requirements for a process of free, prior, and informed consent.	Relevant to the MERITE project. Hence substantial provisions will be required to address the impacts on these vulnerable households. **A separate EAP has been prepared to address ESS7 requirements.**
ESS8: Cultural Heritage	Protect cultural heritage from the adverse impacts of project activities and support its preservation— Address cultural heritage as an integral aspect of sustainable development. Promote meaningful consultation with	Requires a chance finds procedure to be established. Recognition of the need to ensure peoples' continued access to culturally significant sites, as well as the need for	The standard is relevant; the project deals with beneficiaries belonging to tribal communities. Additionally, the construction activity under the project, in vicinity of a cultural heritage site must

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
	stakeholders regarding cultural heritage. Promote the equitable sharing of benefits from the use of cultural heritage.	confidentiality when revealing information about cultural heritage assets that would compromise or jeopardize their safety or integrity. Requirement for fair and equitable sharing of benefits from the commercial use of cultural resources. Provisions of archaeological sites and materials, built heritage, natural features with cultural significance, and moveable cultural heritage.	not hinder or adversely reflect on their cultural heritage.
ESS9: Financial Intermediaries (FIs)	Sets out how Financial Intermediaries (FI) will assess and manage environmental and social risks and impacts associated with the subprojects it finances. Promote good environmental and social management practices in the subprojects the FI finance. Promote good environmental and sound human resources management within the FI.	Financial Intermediaries (FIs) to have an Environmental and Social Management System (ESMS) - a system for identifying, assessing, managing and monitoring the environmental and social risks and impacts of FI subprojects on an ongoing basis. FI to develop a categorization system for all subprojects, with special provisions for subprojects categorized as high or substantial risk. FI borrowers to conduct stakeholder engagement in a manner proportionate to the risks and impacts of the FI subprojects.	This standard is not relevant as FIs are not involved in the project implementation and activities

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
ESS 10: Stakeholder Engagement and Information Disclosure	Establish a systematic approach to stakeholder engagement that helps Borrowers identify stakeholders and maintain a constructive relationship with them. Assess stakeholder interest and support for the project and enable stakeholders' views to be taken into account in project design. Promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life-cycle. Ensure that appropriate project information is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner.	Require stakeholder engagement throughout the project life cycle and prepare and implement a Stakeholder Engagement Plan (SEP). Requires early identification of stakeholders, both project-affected parties and other interested parties, and clarification on how effective engagement occurs. Stakeholder engagement is to be conducted in a manner proportionate to the project's nature, scale, risks, and impacts and appropriate to stakeholders' interests. Specifies what is required for information disclosure and to achieve meaningful consultation.	The stakeholders need to be consulted throughout the project preparation and implementation period, making ESS10 relevant to the project. **A separate SEP has been prepared to address ESS10.**
Environmental and Social Directive for Investment Project Financing	This Directive applies to the Bank and sets out the mandatory requirements for implementing the Environmental and Social Policy for Investment Project Financing (IPF).	It lays down the following responsibilities of the Bank to manage ES risks and impacts as below: undertake its due diligence on the ES risks and impacts related to the Project; support the Borrower to engage in meaningful consultation with stakeholders in particularly affected communities, and	Applies to Bank in addressing E&S aspects of this project

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
		provide project-based grievance mechanisms; assist the Borrower in identifying appropriate methods and tools to assess and manage the Project's potential ES risks and impacts; agree with the Borrower on the conditions under which the Bank is prepared to support the Project, as set out in the ESCP; and monitor the ES performance of a Project following the ESCP and the ESSs.	
Bank Directive Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups	This Directive establishes directions for Bank staff regarding due diligence obligations relating to the identification of and mitigation of risks and impacts on individuals or groups who may be disadvantaged or vulnerable because of their particular circumstances.	It requires the Bank task team to support the borrower in establishing arrangements for the undertaking and preparation of the environmental and social assessment of the project as required by ESS1. It reviews the terms of reference for the environmental and social assessment to verify that (a) identifies (or requires the identification of) groups or individuals affected by the project that may be disadvantaged or vulnerable; and (b) requires an assessment of project risks and impacts, and identification of differentiated	Applies to Bank in addressing E&S risks and impacts on disadvantaged and vulnerable persons or groups that are identified in this project area.

ESS	Key Features/Objective	Requirement	Applicability to MERITE project
		mitigation measures, as they pertain to the disadvantaged or vulnerable individuals or groups that are identified.	

3.3. Application of WB ESSs

The proposed project's key environmental and social risks and impacts are anticipated to occur mainly during the implementation phase due to the construction/renovation/expansion phase within existing footprints. Key impacts include: (i) poor labor and working environment; (ii) occupational health and safety of project workers, including induced risks regarding workplace and community health and safety; (iii) noise, vibration, and dust pollution, including waste generation and management during construction of civil works; (iv) induced risk of gender-based violence from labor employed in the civil works sites; (v) hiring of child labor for civil works; (vi) adverse impacts on the squatters and/or encroachers living on some of the construction sites; (vii) ensuring culturally appropriate benefits to the indigenous and other disadvantaged communities from the project's various initiatives for inclusion, sustenance, transition to job markets and other interventions following the Bank's directive on Disadvantaged or Vulnerable Individuals or Groups.

All ESSs will be applicable in the MERITE project, except for the limited implication of ESS 9: Financial Intermediaries and WB's legal policies for Projects on International Waterways (OP 7.50); and Project Disputed Areas (OP 7.60). Considering the associated environmental and social risk, the MERITE project has been classified as '**Moderate**,' as most of the impacts are localized and reversible with or without mitigation.

4. Chapter 4: Environment and Social baseline

4.1. Description of the Environmental Baseline Conditions

4.1.1. Environmental Profile of the Country

4.1.1.1 Location and Size

India (Figure 4.1) is situated north of the equator between 8°4' north (the mainland) to 37°6' north latitude and 68°7' east to 97°25' east longitude. It is the seventh largest country in the World with a total area of 32,87,263 square kilometers (12,69,219 sq mi). India measures 3,214 km (1,997 mi) from north to south and 2,933 km (1,822 mi) from east to west. It has a land frontier of 15,200 km (9,445 mi) and a coastline of 7,516.6 km (4,671 mi).

Figure 4.1: India's location in the World

Figure 4.2: India's Extent

Figure 4.3: India's Map

India, officially the Republic of India (Hindi: Bhārat Gaṇarājya) is a country in South Asia. It is the seventh largest country by area, the second most populous country, and the most populous democracy in the world. Bounded by the Indian Ocean on the south, the Arabian Sea on the

southwest, and the Bay of Bengal on the southeast, India shares land borders with Pakistan to the west; China, Nepal and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is in the vicinity of Sri Lanka and the Maldives.

4.1.1.2 Geography

The Northern Plain Northern Plain was formed as a result of the alluvial deposition by the three main Himalayan Rivers Ganga, Indus & Brahmaputra and its tributaries. Because of the presence of fertile soil, availability of water, and moderate climate, these areas are best suited for agriculture and hence highly populated. Longitudinally northern plain is divided into four regions namely Bhabar; Terai; Bhangar and Khadar.

Indian Desert Also known as Thar Desert, is lying in the northwestern part of India. This area receives very less rain fall and the presence of sand makes it an arid region with very low vegetation. Luni River is the most important river of this region. The crescent shaped sand dunes seen in this region are known as Barchans.

The Peninsular Plateau is a table top land. Indian Plateau is divided into two based on the position of River Narmada. Part of plateau lying north of Narmada is called Central Highlands and part lying south of Narmada is known as Deccan Plateau.

- *Central Highlands*: In south it is bounded by Vindhyan range and north-west by Aravalis. The further westward extension gradually merges with the Thar Desert. Its eastern extension is known as the Bundelkhand and Baghelkhand.
- *Deccan Plateau*: This triangular land mass, in south west is bounded by Western Ghats and in South-east by Eastern Ghats. Anai Mudi is the highest peak in Western Ghats and Mahendragiri in Eastern Ghats. Western Ghat is more continuous and hence only with the help of a natural pass, anyone can cross it. On the other side, Eastern Ghat is discontinuous and can be easily crossed.

Coastal Plains India has Western Coastal Plain (between Western Ghats and Arabian Sea) and Eastern Coastal Plain (between Eastern Ghats and Bay of Bengal).

- Western Coastal Plain: It is divided into three sections. Northern most part of the coast is called the Konkan, the Central stretch is called the Kannad Plain while the Southern most part is known as Malabar Coast.
- Eastern Coastal Plain: It is divided into two parts. Northern part is known as Northern Circar and the southern part is called Coromandel Coast.

Islands India has two main groups of Islands; Lakshadweep Islands and Andaman and Nicobar groups of Islands.

- *Lakshadweep Islands*: It is composed of small coral islands and its administrative capital is Kavaratti Island. Pitti Island, which is a bird sanctuary is situated here. In India, Lakshadweep stands first in both coconut production and per capita availability of fish.
- *Andaman and Nicobar Islands*: Andaman and Nicobar groups of Island is separated by Ten-degree channel. Its administrative capital is Port Blair and India's only active volcano is located in Barren Island. It is believed that these Islands are an elevated portion of submarine mountains.

4.1.1.3 Climate

Climate of India is described as the 'Monsoon type'. Because of the presence of coastal area peninsular India doesn't experience much variation in temperature. Four main seasons can be identified in India.

(i) Hot Weather Season (Summer):

- During this time of the year, because of the apparent movement of the Sun, sunrays fall directly over tropic of cancer and as a result temperature increases gradually. By May end or June starting, temperature of North Indian states increases up to 45-48 degree Celsius.
- North Indian states also experience a very hot and dry local wind during summer season
- By the end of May, some areas receive localized thunderstorms and slight rainfall.

(ii) Advancing Monsoon (Rainy Season):

- South West Monsoon winds causes precipitation. Since these winds passes over Indian Ocean, it carries very large amount of moisture and this later results in heavy rainfall. Sometimes Monsoon experiences wet and dry spells.

(iii) Retreating Monsoon (The Transition Season)

- This is a transition season between Monsoon and Winter, and experienced during October November months
- October Heat (high temperature and high humidity) is the most important specialty of this season.

(iv) The Cold Weather Season (Winter Season)

- During this season, because of the apparent shift of the sun towards southern hemisphere, we will experience a Cold Weather Season.
- Tamil Nadu coast receives some amount of rainfall during this season.

4.1.1.4 Land use

As per report of National Institute of Hydrology (2020), in India, about 51.09% of the land is under cultivation, 22.27% under forest and 3.87% under pasture. Built up areas and uncultivated land occupy about 12.34%. About 5.17% of the total land is uncultivated waste, which can be converted into agricultural land. The other types of land comprises up 4.67%.

Land Utilization in India	
Land uses	**%**
Land under non-agricultural uses	6.95
Barren and uncultivable land	6.46
Net area sown	46.64
Forest lands	22.27
Miscellaneous tree crops and groves	1.21
Cultivable waste lands	4.92
Current fallows	4.53
Old fallows	3.15
Permanent pastures and grazing land	3.87

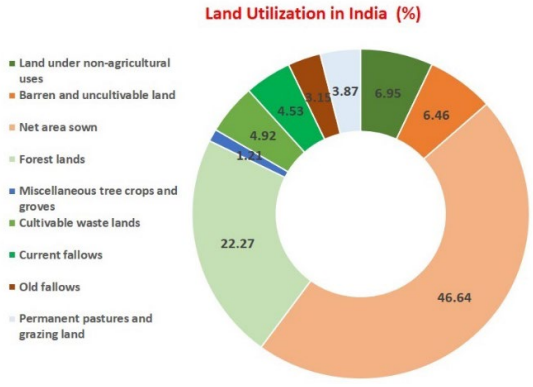

Figure 4.4: Land Utilization in India

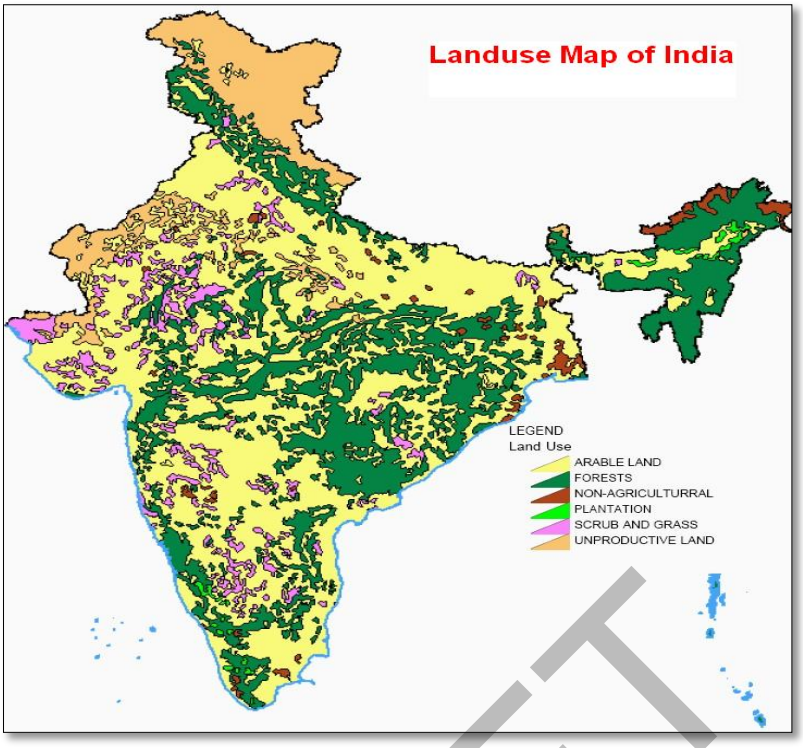

Figure 4.5: Land-use Map of India

4.1.1.5 Water resources

Water resources in India includes information on precipitation, surface and groundwater storage and hydropower potential. India experiences an average precipitation of 1,170 millimeters (46 inch) per year, or about 4,000 cubic kilometers (960 cu mi) of rains annually or about 1,720 cubic meters (61,000 cu ft) of fresh water per person every year. India accounts for 18% of the world population and about 4% of the world's water resources. Some 80 percent of its area experiences rains of 750 millimeters (30 in) or more a year. However, this rain is not uniform in time or geography. Most of the rains occur during its monsoon seasons (June to September), with the north east and north receiving far more rains than India's west and south. Other than rains, the melting of snow over the Himalayas after winter season feeds the northern rivers to varying degrees. The southern rivers, however experience more flow variability over the year.

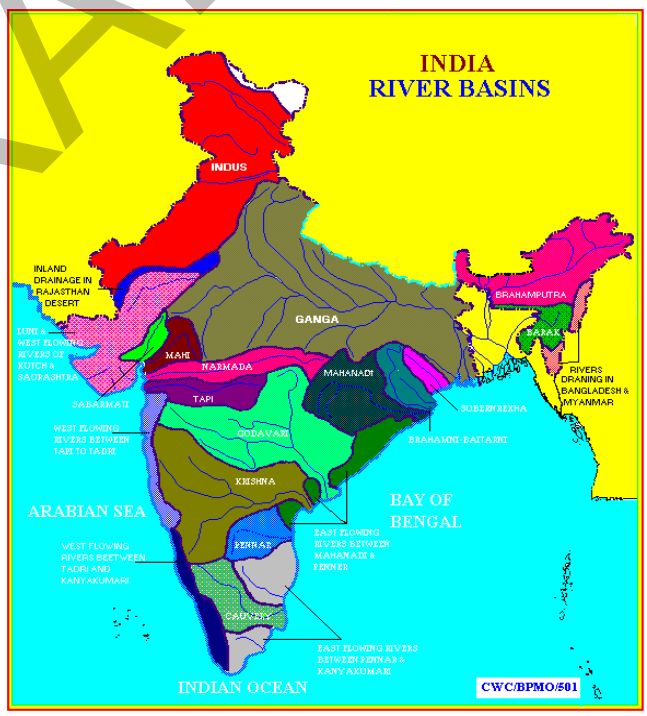

Figure 4.6: Water Resources' Map

For the Himalayan basin, this leads to flooding in some months and water scarcity in others. Despite extensive river system, safe clean drinking water as well as irrigation water supplies for sustainable agriculture are in shortage across India, in part because it has, as yet, harnessed a small fraction of its available and recoverable surface water resource.

Water Per Capita Availability: As per report of Central Water Commission (CWC), the per capita water availability in India is around 1500 cubic meter. The data showed a huge decline in per capita water availability from 5000 cubic meter in 1951 to project water availability for 2050 is 1000 cubic meter.

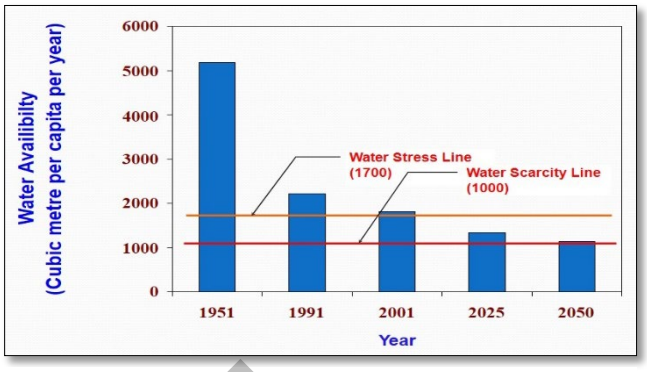

Figure 4.7: Water per capita availability

4.1.1.6 Energy

The energy policy of India is to increase energy in India and reduce energy poverty with more focus on developing alternative sources of energy, particularly nuclear, solar and wind energy. India attained 63% overall energy self-sufficiency in 2017. The primary energy consumption in India grew by 2.3% in 2019 and is the third biggest after China and USA with 5.8% global share. The total primary energy consumption from coal (452.2 Mtoe; 45.88%), crude oil (239.1 Mtoe; 29.55%), natural gas (49.9 Mtoe; 6.17%), nuclear energy (8.8 Mtoe; 1.09%), hydroelectricity (31.6 Mtoe; 3.91%) and renewable power (27.5 Mtoe; 3.40%) is 809.2 Mtoe (excluding traditional biomass use) in the calendar year 2018.

In 2018, India's net imports are nearly 205.3 million tons of crude oil and its products, 26.3 Mtoe of LNG and 141.7 Mtoe coal totaling to 373.3 Mtoe of primary energy which is equal to 46.13% of total primary energy consumption. India is largely dependent on fossil fuel imports to meet its energy demands – by 2030, India's dependence on energy imports is expected to exceed 53% of the country's total energy consumption. About 80% of India's electricity generation is from fossil fuels. India is surplus in electricity generation and also marginal exporter of electricity in 2017. In 2020-21, the per-capita energy consumption is 0.6557 Mtoe excluding traditional biomass use and the energy intensity of the Indian economy is 0.2233 Mega Joules per INR (53.4 kcal/INR).

4.1.1.7 Biodiversity and Habitats

India encompasses a variety of climatic conditions (like tropical, subtropical, temperate, alpine etc.) due to wide variations in temperature and precipitation. Climatic variations make the country rich in flora and fauna making it a 'mega biodiversity country' in the world. Geographically, India has about 2.4% of the total land area of the world but it accounts for ~8% in terms of total number of species found over the world. The majority of the species are occurring in certain biologically rich zones of tropical forests. Accelerated increase in clearing of tropical forest areas and decline in their plant diversity across the world has necessitated identifying biodiversity hotspot's locations and in situ conservation of biodiversity by mapping the distribution of vegetation diversity across different habitats and landscapes and monitoring rates of their change over time. Hotspots are identified on

the basis of the number of endemic species and the degree of threat to the ecosystem for in situ conservation of biodiversity. Out of 35 hotspots identified to date over the world, 4 occur in India namely, Western Ghats, Himalaya, Indo-Burma and Sunderland.

India is among the first five countries in the world, the first in Asia and the first among the biodiversity rich mega diverse countries to have submitted NR6 to the CBD Secretariat. "While globally, biodiversity is facing increasing pressure on account of habitat fragmentation and destruction, invasive alien species, pollution, climate change and over use of resources, India is one of the few countries where forest cover is on the rise, with its forests teeming with wildlife. India is on track to achieve the biodiversity targets at the national level and is also contributing significantly towards achievement of the global biodiversity targets. (Source: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1557771

4.2. Identification of Environmental Risks & Impacts and their Mitigation

This section provides a description of the potential risk and impacts of the project activities on physical and biological environment of the project area and describes the measures for their mitigation.

The major impacts are anticipated mainly on following four activities:

- Minor civil works pertaining to items such as renovation of academic and/or administration blocks, halls, class rooms and labs.
- Procurement and installation of digital and other kinds of equipment
- Conduction of training programs and mass outreach activities
- Project management/Governance activities

4.2.1. Risk Assessment Matrix

The potential environmental impacts are assessed with respect to the project activities as proposed in different components under MERITE categorized as **'Moderate'** and detailed out in the following table.

Table 4.1: Assessment of Environmental risk under MERITE

Component No.	Activities	Potential Impact	Aspects to be included in ESMF
Component 1: Improving quality and equity in selected institutions			
1.1 Strengthening institutions to enhance student skills and employability	• Upgrading curricula in at least two (2) disciplines/programs in consultation with industry. • Student training in emerging technologies and employability skills, including communication, technology use, systems thinking, etc. to improve labor market success • Internships to improve workplace readiness and connect theoretical knowledge with real-life applications. Mentorship programs, including	- Environmental impacts associated with conduction of training activities such as waste management, sanitation, water supply, safety, universal access etc. -Issues related with installation and operation of digital equipment: safety, waste disposal, and e-waste disposal at the	-Mechanism for ensuring proper EHS/OHS management in all training plans - Mechanism for ensuring that all necessary EHS/OHS aspects have been properly addressed in all installed digital equipment

Component No.	Activities	Potential Impact	Aspects to be included in ESMF
	networking with professional associations, to improve labor market transitions among girl students. • Professional development of faculty to improve technical and pedagogical skills, including in technology-based teaching-learning and assessments. • Assessment and tracking of student technical skills. • Digital capabilities assessment in participating institutions and development of a digital transformation action plan based on institutional priorities.	end of equipment's productive life -Issues associated with minor civil works such as construction material sourcing, environment friendly design features, safety features in design, waste management (including C&D) and worker safety	-Screening mechanism for identifying issues, if any, associated with minor civil works and ensuring that they are appropriately addressed
1.2 Promoting equitable access	• Development and distribution of materials/ educational resources, including in Indian languages, to support students catch-up and address learning gaps. • Proactive academic advisement by faculty, counseling and peer support services for students will be established and strengthened to improve student adjustment. • Outreach programs organized by participating institutions to high schools with the aim of providing prospective students (and parents/guardians) information on technical education program options, admissions requirements, employment trends, financial aid schemes, etc. • To support institutions to offer programs designed to build interest in engineering and technology among high school students, especially girls. • Financial aid policies and schemes (central as well as state level) will be reviewed with recommendations for improvements in targeting and/or implementation of the	- Environmental impacts associated with conduction of training activities such as waste management, sanitation, water supply, safety, universal access etc	-Mechanism for ensuring proper EHS/OHS management in all training plans

Component No.	Activities	Potential Impact	Aspects to be included in ESMF
	schemes to better serve disadvantaged students.		
1.3 Introducing multidisciplinary education	• Support institutions to offer multidisciplinary courses under the mentorship of experienced leading institutions of technology.		
Component 2: Improving research for better skills and innovation			
2.1 Collaborative Research Fund (CRF) and Ph.D. programs	• Support better research outcomes and strengthening the quality of Ph.D. training. • Establish skills labs and incubators linked to the R&D activities, provide technology transfer funds to incubates, seed funding to innovators to create start-ups, and deliver IPR support. • Special effort to target women faculty/student members to apply for research, technology transfer grants, and innovation seed funding.	-Environmental impacts due to minor civil works and procurement and installation of lab equipment's for R&D such as: Waste generation, Electrical & other OHS issues, sanitation, e-waste disposal etc. -Better awareness and skills on Environment, climate change and allied topics amongst students graduating from technical institutions as well as faculty (positive impact)	-Mechanism for ensuring that all necessary EHS/OHS aspects have been properly addressed in all installed digital equipment -Screening mechanism for identifying issues, if any, associated with minor civil works and ensuring that they are appropriately addressed
2.2 Developing innovation eco-systems	• Fund pre-incubation activities (Maker labs, skills labs (including tools, software, fabrication machines) and Hackathons etc. • Establishment of a Technology Transfer Fund (TTF), which will support promising technological research with an existing prototype or advanced model for commercialization. • Establishment of an Innovator Seed Fund (ISF), which will support promising start-up activities. • Central/state level workshops on patents, patent filing, technology transfer and commercialization will be conducted, and a team of innovation mentors will be established (faculty of the	Environmental impacts associated with organizing workshops / trainings such as waste disposal, water supply, health, safety .	- Mechanism for ensuring that all necessary EHS/OHS, waste management and safety aspects have been properly addressed in the events/workshops organized

Component No.	Activities	Potential Impact	Aspects to be included in ESMF
	institution/incubation and from the industry) who can mentor on the feasibility of an idea for patenting, how to formulate a patent, and other forms of IP protection (including copyright, design registration).		
2.3 Institutional innovation and entrepreneurship culture	• To collaborate closely with communities on "Technology Transfer for Public Good" in line with Unnat Bharat Abhiyan. They will assess the technological, livelihood, and infrastructure requirements for a quality life in these areas and then utilize their knowledge, prepare workable action plans for the selected areas.	Environmental impacts associated with conduction of Faculty Development workshops / conferences and community outreach programs, such as waste management, sanitation, water supply, safety, universal access etc	-Mechanism for including EHS/OHS aspects in Faculty Development and Community Outreach Programs
Component 3: Sector steering, including governance and (HEI-) internal and external quality assurance			
3.1 Quality assurance (QA)	• QA benchmarking within and across states. • Establishment and capacity building/training for state-level QA units. • Establishment/support to TEI-level QA units; training of staff and administrators for development and dissemination of institutional quality policies, self-assessment reports and preparation of accreditation procedures. • Support the development of regulations and mechanisms for the assessment of online technical education for which innovative QA procedures will be required.	Issues associated with minor civil works for establishment of QA units (refurbishment of institution's building etc) , waste management (including C&D) and worker safety - Environmental impacts associated with conduction of Capacity Building programs, such as waste management, sanitation, water supply, safety, universal access etc.	-Screening mechanism for identifying issues, if any, associated with minor civil works and ensuring that they are appropriately addressed -Mechanism for including EHS/OHS aspects in organizing Capacity Building programs on QA
3.2 Governance	• Phasing out of affiliation system: TA including developing guidelines and roadmaps on the central and state level. • TA on network reforms (state level) and financial incentives and training for move towards for i) clusters (link to Component 1 – multidisciplinary) and ii) institutional autonomy.	- Environmental impacts associated with conduction of training activities such as waste management, sanitation, water supply, safety, universal access etc.	-Mechanism for including EHS/OHS aspects in Training plans -Strengthening institutional management systems to include energy / resource / safety audits. Improving campus OHS measures and emergency response arrangements

Component No.	Activities	Potential Impact	Aspects to be included in ESMF
	• Cross-institutional mentoring. • At the institutional level, establishment and support for Boards of Governors; improvement of institutional steering and management. • Developing and piloting of GTS (Graduate Tracking System).		
3.3 Leadership training and academic careers	• Faculty training focusing a) on content (upgrade of subject-related knowledge, b) pedagogical skills and c) digitalization of teaching and learning. • Financing of evaluations of faculty development programs and their impact on instruction and student learning. • Participating states will be supported in developing a comprehensive strategy for continuous professional development of faculty. • Pilot states can develop and pilot innovative approaches for their academic career systems. • Provision of academic leadership training with a particular emphasis on support and mentoring schemes for new and future female academic leaders.	- Environmental impacts associated with conduction of training activities such as waste management, sanitation, water supply, safety, universal access etc.	Mechanism for including EHS/OHS aspects in Training plans -Strengthening institutional management systems to include energy / resource / safety audits. Improving campus OHS measures and emergency response arrangements
3.4 Project Management	• Training and capacity building for NPIU and SPIU staff. • Funding for the project implementation, financial audits, monitoring and evaluation (M&E) - including the monitoring of environmental and social aspects - and selected PIU operating expenses.	- Environmental impacts associated with conduction of training activities such as waste management, sanitation, water supply, safety, universal access etc Incorporating appropriate systems to enhance and maintain institutional performance on aspects like resource use efficiency, energy conservation, maintaining green cover, enhanced	Mechanism for including EHS/OHS aspects in Training plans/capacity building plans Strengthening institutional management systems to include energy / resource / safety audits. Improving campus OHS measures and emergency response arrangements

Component No.	Activities	Potential Impact	Aspects to be included in ESMF
		universal access features, campus waste management, campus safety (OHS), emergency response arrangements, etc.	

Broadly, the Environmental Risk Analysis of envisaged project components and proposed activities (see Chapter 1) has led to the identification of three kinds of project activities, which may have limited associated Environmental risks. These are:

Table 4.2: Project activities & associated environmental risk

SN	Envisaged Project Activities	Associated Environmental Risks
1.	Minor Civil Works pertaining to repair / renovation / refurbishment / extension of existing institutional infrastructure (buildings, classrooms, office blocks, labs, etc.)	• Location-specific issues (Forest/CRZ/PCR) • Inadequate inclusion of Environment-friendly features and/or safety aspects in the civil works design • Construction activity related issues (dust control, construction material source, noise level / air quality issues, site and worker safety, emergency back-up arrangements, etc.) • Improper construction quality that may compromise specific EHS aspects in the completed structure(s)
2.	Procurement and installation of digital and other kinds of equipment	• Inadequate inclusion of EHS aspects in the equipment installation plan • Excessive noise levels / air quality issues; inadequate site / worker / public safety arrangements, etc. • Poor quality of installation that compromises on specific EHS aspects in the completed structure(s)
3.	Conduction of training programs and mass outreach activities	Inadequacies in any of the following: • Water supply and/or sanitation/drainage arrangements • EHS features of training venues (ventilation, cooling, etc.) • Arrangements for waste collection and disposal • Emergency back-up arrangements/procedures
4.	Project Management / Governance	No risk as such, but considerable scope exists for improving the Environmental footprint of individual institutions by strengthening their management systems and specific infrastructure related to aspects like: • Energy and water management • Campus Safety features (railings, ramps, universal access, etc.) • Waste management, sanitation, etc.

Subsequent sections of this chapter give specific procedures to be followed by the project management in order to adequately and satisfactorily address the above risks during project implementation. Since the environmental risks associated with minor civil works and installation of digital/other equipment are similar, a unified procedure has been developed to address both of them. However, since the exact nature and number of civil works contracts likely to be awarded during the project implementation period are not well-defined at the moment (same for training activities as well), it is intended to adopt a framework approach to achieve mitigation of all envisaged environmental impacts. The framework approach defines a procedure which, when applied to a sub-project plan, will not only enable identification of all its associated environmental impacts, but also assist in determining appropriate options for mitigating them. The procedure has been designed to be very simple so as to enable project staffs, who are mostly non-expert, to successfully apply it with relative ease.

Responsibility

The responsibility for checking and ensuring that none of the activities listed in the Negative List of Activities is supported under the MERITE Project lies with Institutional PMU (designated nodal officer). The Environment Expert in the PMU will check all requisite reports, if any, and contract documents of minor civil works to ensure that they do not contain any activities on the Negative List of Activities.

4.2.2. Minor Civil Works and Digital Equipment Installation

This section defines the procedures to be followed for screening individual work-plans for minor civil works or installation of digital/other equipment. The procedure has been developed in a manner that it complements, supplements and homogeneously gels with the existing institutional procurement procedures for initiating civil works or purchasing and installing specific equipment.

In context of minor civil works and equipment procurement, the procedural requirements for environmental screening and mitigation plan preparation are divided into two categories, namely the Plan Preparation phase and construction/implementation phase. Detailed procedures for the above two phases of project implementation are described in the sections below.

Planning Stage

The broad logic on which this procedure is based is given in the following schematic diagram:

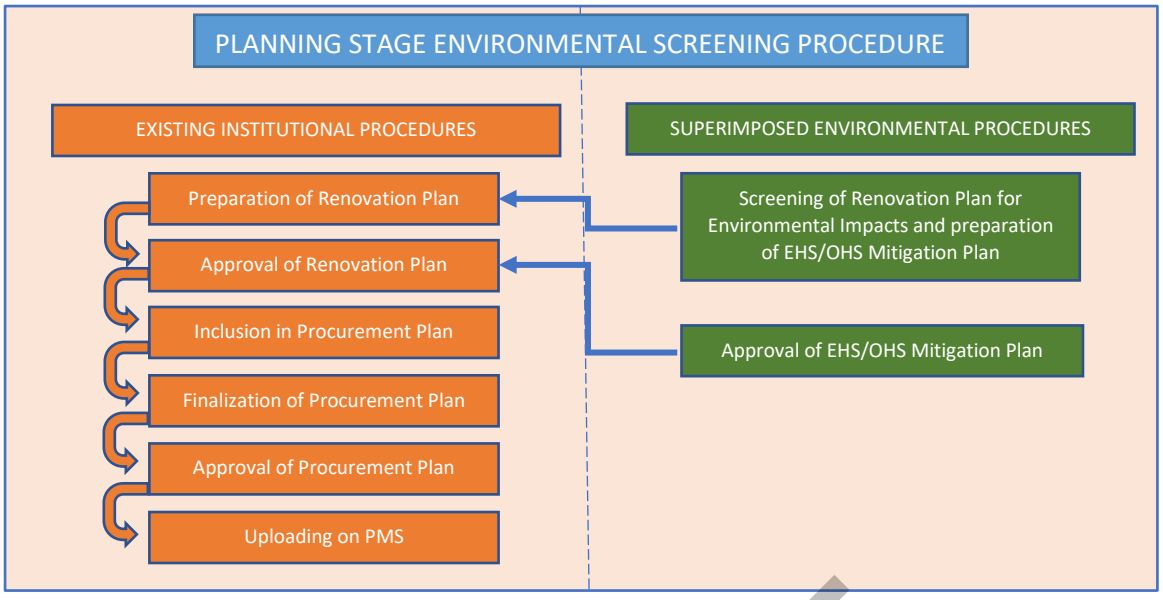

Figure 4.8: Planning stage Environmental Screening and EHS/OHS Mitigation Plan preparation activities in conjunction with existing institutional procurement procedures

Details of this procedure are as below:

The above procedure is self-explanatory and is integrated seamlessly with existing procurement and contracting procedures in the institutions, as apparent from the table above. Guidance on specific mitigation measures that can be adopted to address various kinds of prevailing ground situations / circumstances is provided in **Annex-2**, which can be referred to while preparing the EHS/OHS Mitigation Plan. The National PIU, SPIU and Institutional Focal points should utilize information given in this Annex as well as other references at their disposal while undertaking environmental screening and EHS/OHS Mitigation Plan preparation. The National PIU will ensure that all institutional Focal Points and other project personnel are adequately trained and familiarized in applying these procedures. S/he will also provide any necessary backstopping support to the SPIUs and Institutions in this regard as and when required.

Table 4.3: Procedural steps for Environmental Screening of minor civil works / equipment installation

PREVAILING INSTITUTIONAL PROCEDURE		PROPOSED ENVIRONMENTAL PROCEDURES TO BE INTEGRATED		
PROCEDURAL STEP	**RESPONSIBILITY**	**ENVIRONMENTAL SCREENING STEP**	**ACTION DESCRIPTION**	**RESPONSIBILITY**
Renovation Plan/Proposal	Department Head	Screening for Environmental impacts and preparation of EHS/OHS Mitigation Plan	Proposed plan of minor civil works will be screened for Environmental impacts. The findings of the screening will be reviewed to determine whether preparation of an EHS/OHS Mitigation Plan is warranted. If not warranted, the contract will be issued and no further Environmental actions will be mandated. If an EHS/OHS Mitigation Plan is warranted by the screening, the preparation of the same will be undertaken as per the applicable option from the ones below: • By the concerned Department in consultation with the Institutional Environment Focal Point if designing is undertaken inhouse by the institution.	Institutional Environment Focal Point along with Concerned Department Head Both documents will be reviewed and cleared by SPIU Environment Focal Point before putting up for Committee Approval

PREVAILING INSTITUTIONAL PROCEDURE		PROPOSED ENVIRONMENTAL PROCEDURES TO BE INTEGRATED		
PROCEDURAL STEP	**RESPONSIBILITY**	**ENVIRONMENTAL SCREENING STEP**	**ACTION DESCRIPTION**	**RESPONSIBILITY**
			In this case, preparation of EHS/OHS Mitigation Plan will take place <u>prior</u> to award of contract • By the concerned Contractor in consultation with the Institutional Environment Focal Point and concerned Department, if it is mandated that the designing is to be be undertaken by the Contractor. ***In this case, preparation of EHS/OHS Mitigation Plan will take place <u>subsequent</u> to award of contract. To enable this to happen, a statement on Environmental issues expected to be addressed in the design will be included in the bid document*** **TOOLS TO BE USED**: 1. Environmental Screening Checklist (see **Annex: 3** 2. EHS/OHS Mitigation Plan Format (Refer **Annex: 4**)	
Approval of Renovation Plan	Committee appointed by Director/Principal	Approval of EHS/OHS Mitigation Plan	EHS/OHS Mitigation Plan will be reviewed and approved with changes, if any are required. It will be attached to or integrated with the main Renovation Plan	Committee appointed by Director/Principal
Inclusion of approved Renovation Proposal in Procurement Plan	NPO/Procurement Committee			
Finalization of Institutional Procurement Plan	NPO			
Approval of Institutional Procurement Plan	Board of Governors			
Uploading of Institutional Procurement Plan in PMS	NPO			

Construction Stage

This section describes the Construction Stage Environment Management procedures to be applied for all project activities involving minor civil works or installation of specific equipment. The procedural steps to be applied start right from the "Invitation for Bids" stage and continue till the works are certified complete. Owing to slight differences in the prevailing institutional procedures for contracting minor civil works and procuring equipment, two separate procedures have been developed to deal with both these types of works individually.

Construction Stage Environmental Management Procedures for Minor Civil Works

Environment management of construction activity pertaining to minor civil works will be taken up in parallel with the existing procedures as per the procedure depicted in the table below:

Table 4.4: Procedural steps for Construction Stage Environmental Management of Civil Works

PREVAILING INSTITUTIONAL PROCEDURE		PROPOSED ENVIRONMENTAL PROCEDURES TO BE INTEGRATED		
PROCEDURAL STEP	**PREPARED BY**	**ENVIRONMENTAL STEP**	**ACTION DESCRIPTION**	**RESPONSIBILITY**
Issue Request for Quotations/Bids for planned minor civil construction works	NPO	Include EHS/OHS Requirements in Request for Quotations / Bids	Include EHS/OHS as detailed in the EHS/OHS Mitigation Plan in context of construction of proposed minor civil works, in the Request for Quotation / Bid Document	NPO
Evaluate Bids and finalize award of Contract	Procurement Committee	Determine if the received bid is consistent with all expected EHS/OHS requirements	Review received bids to ascertain whether they adequately meet all expected EHS/OHS requirements as detailed in the request for quotations and provide inputs to the Procurement Committee	Institutional Environment Focal Point; Procurement Committee
CONDITIONAL STEP-1* Preparation of design ***Condition***: Request for Bids mandates that design will be prepared by Contractor	Contractor	Preparation of EHS/OHS Mitigation Plan	Along with the design/plan/DPR of the proposed minor civil works an EHS/OHS Mitigation Plan will be prepared	Contractor, in consultation with concerned Department / Procurement Committee
CONDITIONAL STEP-2* Approval of Contractor's Design ***Condition***: Same as above	Procurement Committee	Approval of EHS/OHS Mitigation Plan, if prepared	EHS/OHS Mitigation Plan, if prepared, will be reviewed and approved and permission for commencement of construction will be granted	Contractor, in consultation with concerned Department / Procurement Committee
Monitoring construction activity	Concerned Department/ Procurement Committee	Environmental monitoring of construction activity	The construction activity will be regularly monitored for assessing adherence to EHS/OHS Mitigation Plan as well as applicable norms for aspects such as worker safety, waste management, air/noise pollution, worker amenities, etc. **TOOLS TO BE USED** Construction Stage Monitoring Checklist (see **Annex-5)**	Institutional Environment Focal Point will provide inputs to Concerned Department / Procurement Committee
Review of completed works	Concerned Department/ Procurement Committee	Inspection of completed works for adherence to EHS/OHS Mitigation Plan, if applicable	Adequacy of completed works from Environment angle will be confirmed by verifying the works against the EHS/OHS Mitigation Plan and other applicable norms / regulations **TOOLS TO BE USED** Completion Checklist (see **Annex-6)**	Institutional Environment Focal Point will provide inputs to Concerned Department / Procurement Committee

*If stated condition is not applicable to a particular renovation/equipment procurement plan, these conditional steps can be skipped

Table 4.5: Procedural steps for Installation Stage Environmental Management of Procured Equipment

PROCEDURAL STEP	PREPARED BY	ENVIRONMENTAL STEP	ACTION DESCRIPTION	RESPONSIBILITY
Issue Request for Quotations/Bids	NPO	Include EHS/OHS Requirements in Request for Quotations / Bids	Include EHS/OHS requirements as detailed in the EHS/OHS Mitigation Plan in context of proposed equipment installation works, in the Request for Quotation / Bid Document	NPO
Evaluate Bids and finalize award of Contract	Procurement Committee	Determine if the received bid is consistent with all	Review received bids to ascertain whether they adequately meet all expected EHS/OHS requirements	Institutional Environment Focal Point;

PROCEDURAL STEP	PREPARED BY	ENVIRONMENTAL STEP	ACTION DESCRIPTION	RESPONSIBILITY
		expected EHS/OHS requirements	as detailed in the request for quotations and provide inputs to the Procurement Committee	Procurement Committee
Monitoring of equipment installation activity	Concerned Department/ Procurement Committee	Environmental monitoring of equipment installation activity	The equipment installation activity will be closely monitored for determining extent of adherence to EHS/OHS Mitigation Plan as well as applicable norms for aspects such as worker safety, waste management, air/noise pollution, worker amenities, etc. **TOOLS TO BE USED** Construction Stage Monitoring Checklist (see **Annex-5**)	Institutional Environment Focal Point will provide inputs to Concerned Department / Procurement Committee
Inspection of successfully installed equipment	Concerned Department/ Procurement Committee	Inspection of installed equipment to confirm compliance to EHS/OHS requirements	Adequacy of completed equipment installation works from Environment angle will be confirmed by verifying the completed installation against the EHS/OHS Mitigation Plan and other applicable norms / regulations **TOOLS TO BE USED** Completion Checklist (see **Annex-6**)	Institutional Environment Focal Point will provide inputs to Concerned Department / Procurement Committee

Responsibility

The overall responsibility of fulfilling Environmental requirements on civil works and/or equipment installation lies with Institutional Environment Focal Point. Other project and institutional staffs will be involved as and when required as indicated in the abovementioned procedures. The State PIU Environment focal Point will be responsible for backstopping these activities and providing necessary guidance and hand-holding wherever necessary.

4.2.3. Trainings and Mass Outreach Events

A significant number of trainings, workshops and mass outreach events are likely to be held during the implementation period of the MERITE project. The primary Environmental issues to be addressed in context of such events along with the possible mitigation strategies are as follows:

Table 4.6: Environmental Issues mitigation strategies with respect to trainings/mass outreach events

SN	EHS Issues / Requirements	Typical Strategies for Addressing/Mitigating the issue
1.	Drinking Water Supply	• Ensure adequate supply (quantity) of drinking water is available • If required, check water quality and undertake necessary measures as applicable to correct anomalies in water quality that may be indicated in the water quality tests • Ensure drainage arrangements are adequate and fully functional and no stagnation takes place
2.	Sanitation Arrangements	• Ensure adequate number of toilets/urinals are available and they are fully functional • Separate toilets should be available for men, women, physically challenged and trans-gender • Ensure adequate drainage and sewerage arrangements (including soak pits and septic tanks, if present) are available and fully functional

SN	EHS Issues / Requirements	Typical Strategies for Addressing/Mitigating the issue
		• All taps and plumbing fittings should be functional and leakage-free • Water stagnation or waterlogging should not be allowed to take place
3.	Waste Generation	• Ensure that appropriate infrastructure is available for segregating and collecting garbage/waste into biodegradable and non-biodegradable (including plastics) • Ensure appropriate and dedicated disposal arrangements are available for all kinds of waste
4.	Safety	• Installation of railings, ramps, barricades and other universal access and safety features as appropriate • Danger and Safety Signages (as appropriate) • Safety check of all furniture and equipment • Ensure electrical safety features are in place • Workers engaged in supporting the event should be provided with appropriate safety gear
5.	Fire-fighting Arrangements	• Appropriate fire safety arrangements (alarms, sprinklers and associated sub-systems, etc.) should be installed • Adequate number of fire-extinguishers should be available at convenient locations • Fire emergency numbers should be prominently displayed • A workable and well-rehearsed evacuation procedure should be available • Institution should have trained fire in-charge available and on duty while trainings are in progress
6.	First Aid and Medical Back-up	• Well-stocked first-aid box(es) should be available at convenient location(s) and trained staff on duty to handle emergencies • Name and numbers of nearest medical facility, ambulance service and/or Doctors on call should be prominently displayed
7.	Emergency Response Arrangements	• A workable and well-rehearsed evacuation procedure should be available • Trained emergency response team/personnel should be available/on call
8.	COVID-19 Protocol	• Arrangement to check body temperatures of all participants • Masks should be used if mandatory • Social distancing practiced, if mandatory • Collection and compilation of vaccination status of all participants • Details of nearest COVID isolation facilities and COVID medical facilities should be available with security staff • Latest Government COVID guidelines (Central, State as well as local) as are in force from time to time should be adhered to

Most trainings and outreach activities in MERITE are likely to be organized in project supported institutions, most of whom may have well established conferencing facilities within their campus. Consequently, many of the abovementioned Environmental issues/requirements associated with organization of such events may already be complied with in most Campuses. Nevertheless, it may be useful to procedurally establish and/or re-confirm the adequacy of such arrangements by following a series of procedural steps customized for this purpose through application of a dedicated checklist. The procedure developed for addressing Environmental Management requirements of training / capacity building / mass outreach events/activities is as below:

Table 4.7: Procedural steps for addressing Environmental Management requirements of training / capacity building / mass outreach events

	Title	Description	Responsibility
STEP-1	Screening of Training Plan and Venue	***Prior to commencement of the training***: The training/outreach event plan and venue will be screened to determine any deficiencies in the arrangements on Environmental counts. Any	Institutional Environment Focal Point

		weaknesses identified will be rectified / suitably addressed **TOOL TO BE USED** Checklist For Assessing Environmental Readiness of Training/Mass Outreach Venues (see **Annex-7**)	
STEP-2	Random Visits to trainings in progress	Visits will be undertaken to randomly selected training venues while training activity is in progress and information on various Environment related aspects will be collected and recorded on a specifically created format. Observations recorded on this format will be subsequently shared with the respective host institution / training venue management. Recommendations will be provided to improve upon the shortcomings and weaknesses. A record of visits and important findings will be maintained in the SPIU and will be used to prepare monthly reports to be sent to the National PIU. **TOOL TO BE USED** Training Visit Checklist (see **Annex-8**)	Institutional Environment Focal Point

4.2.4. Strengthening Institutional Capacities on Enhancing Environment Footprint

Experiences from the earlier TEQIP series of projects have consistently indicated that the platform offered by such projects can be gainfully leveraged to build and strengthen capacity of project supported institutions to deal with aspects such as environment management, resource conservation, strengthening safety arrangements, improving universal access features, etc. that contribute significantly towards enhancing their environmental footprint, sustainability and climate resilience. During TEQIP-III project in particular, the Project Management was able to motivate some of the institutions to institute a host of measures in this direction, such as Energy/Resource/Safety Audits etc. Recommendations emanating from these audits were mostly found to be relevant and demonstrated significant potential for the institutions to improve their performance/footprint on these aspects.

In the MERITE project, it is proposed to build further upon the previous projects' experiences and this time, *attempt to integrate the associated thought processes with such actions into the institutional culture of the supported institutions*. Although this component of the ESMF does not directly address any specific "assessed impact or risk", the recommended actions in this section are expected to contribute extensively not only towards improving the respective institutions' Environmental footprint, but also in instilling a regime of continuous self-assessment and improvement moving forward, thereby making the institutions capable of progressively upgrading themselves and keeping pace with changing circumstances over time.

Against the above backdrop, it is recommended that an enhanced institutional culture is mooted under the MERITE project for all project supported technical institutions, which requires them to implement the a set of specific institutional management related actions on a periodic basis, that collectively contribute towards improving their Environmental performance/footprint. It is expected that once this institutional culture is established under the MERITE project, these actions (as updated from time to time) will continue to be implemented even post project closure, thereby becoming a sustained long-term contribution of the project. Recommended set of actions under this component of the ESMF are as follows:

Table 4.8: Suggested Audits to be conducted for participating institutions

Suggested Institutional Management Measures	When to take up during project implementation	Broad Scope	Recommended Strategy	Recommended periodicity post project closure
Energy Audit	• First Energy Audit: Year-2 • Second Energy Audit: Year-4	Will cover all energy sources including electrical power, gas, fossil fuels, etc.	• The Auditor could be any of the following: ○ An external agency ○ Another MERITE supported institution ○ An individual consultant or team • After completion of first Audit in Year-2, the relevant reports will be shared with the SPIU and PIU. • Recommendations of the first Audit will be implemented in Year-3 • Second Audit in Year-4 will record any improvements in institutional performance that may have taken place post implementation of recommendations of first audit	Once in two years
Water Audit	• First Water Audit: Year-2 • Second Water Audit: Year-4	Will cover all uses of water in the institution including drinking, cleaning / washing and watering plants		
Fire Safety Audit	Once a year	Fire audit will cover all fire prevention and response arrangements		
Campus Safety Features (including electrical) Audit	Once a year	Campus safety audit will cover aspects such as universal access, safety barriers, electrical safety provisions, lightning arrestors / earthing, first aid and emergency response readiness		
Lab systems and Safety Audit	Once a year	Lab safety audits cover all lab related safety provisions and emergency response readiness including dealing with hazardous substances, etc.		

Table 4.9: Suggested Annual Reviews to be conducted by participating institutions

Suggested Institutional Management Measures	When to take up during project implementation	Broad Scope	Recommended Strategy	Recommended periodicity post project closure
Review and augmentation of waste management infrastructure and processes	Annually	Review of: • All systems and procedures pertaining to waste management followed in the institution • Available infrastructure and arrangements in the institution for collecting, managing and safely disposing different kinds of wastes generated on campus	The review can be undertaken internally by a committee constituted by the respective institutions The review report of the Committee containing recommendations for upgradation/improvement will be shared with the BoG of the institution, who will take commensurate decisions on implementing the same	Annually
Review of sanitation infrastructure on Campus	Annually	Review of: • Available infrastructure for sanitation on campus including toilets, sewerage systems, wastewater / sullage disposal mechanisms: their sufficiency,		

		operational status and scope for improvement		

National / Regional Level Workshops

As is apparent from the above table, the Energy/Resource/Safety Audits would be conducted once in 2 years while Waste Management and Sanitation Reviews will be taken up on an annual basis. Once the first and second Audits are completed in Year-2 and Year-4 of the project, the audit results and recommendations obtained from all participating institutions will be compiled and analyzed to determine the most prominent weaknesses as well as available options for addressing them. An external third-party agency may be hired to undertake this compilation and analysis. The findings of this analysis will be presented to the participating institutions in national/regional level workshops organized in Year-5 of the project. Deliberations and important relevant feedback along with the emerging strategic decisions taken at this workshop will be documented and circulated as a publication for institutions to use in their post project policy planning as well as institutional planning/management actions.

4.3. Environmental and Social Management Framework

As the exact locations of the institutes where infrastructure development works will be undertaken is not yet known, an ESMF has been prepared. The ESMF consists of the set of mitigation, monitoring and institutional measures and associated procedures to be undertaken during the design, construction and operation stages of the institute infrastructure strengthening sub-projects to eliminate, offset or reduce adverse environmental impacts.

The ESMF for MERITE is intended to ensure efficient environmental and social management of activities being undertaken. The ESMF contains:

- Negative List of Activities
- Screening of Sub-projects
- Procedures for Preparation and Implementation of sub-project Environmental Social Management Plans (ESMPs)
- Institutional Arrangements
- Capacity Building
- Monitoring and Reporting
- Budget
- Environmental and Social Management Actions mapped to the Sub-project Cycle

4.3.1. Negative List of Activities

Description: Activities that are likely to pose high risks and severe negative impacts on the environment, health and safety will not be supported under the MERITE Project. A list of such activities has been compiled as the 'Negative List of Activities' and is presented in **Annex-9**.

Procedure: Each sub-project to be supported under the MERITE Project will be checked to confirm that it does not include any activity listed on the Negative List of Activities. This applies to the infrastructure works supported by the project and other activities taken up by institutes with the performance-based grants provided to them. The contract documents of institute infrastructure work and the guidelines for the institute will include necessary clauses to exclude support for any activities on the Negative List of Activities.

Responsibility: The responsibility for checking and ensuring that the none of the activities listed in the Negative List of Activities is supported under the MERITE Project lies with central and state PIU. The Environment Expert in the PIU will check: (a) all Detailed Project Reports (DPRs) and contract documents of institute infrastructure works, and, (b) all activity plans of institute to ensure that they do not contain any activities on the Negative List of Activities.

4.3.2. Procedures for Preparation and Implementation of sub-project Environmental Social Management Plans (ESMPs)

The basic objective of the ESMP is to manage adverse impacts of project interventions in a way that minimizes the possible adverse impact on the environment and people of the project influence area. The specific objectives of the ESMP are to:

- Identify the mitigation measures during ESMF and facilitate implementation of those during the implementation of PIU/MERITE;
- Maximize and sustain potential program benefits and control negative impacts;
- Draw responsibilities for project proponent, contractors, consultants, and other members of the project team for the environmental and social management of the program;
- Define a monitoring mechanism and identify monitoring parameters to:
  - Ensure the complete implementation of all mitigation measures;
  - Ensure the effectiveness of the mitigation measures; and
  - Assess environmental training requirements for different stakeholders at various levels.

The ESMP will be managed through a number of tasks and activities and site-specific management plans. One purpose of the ESMP is to record the procedure and methodology for management of mitigation identified for each negative impacts of the project. The management will clearly delineate the responsibility of various participants and stakeholders involved in planning, implementation and operation of the project.

Requirement: A site-specific ESMP will be prepared for each institute. The ESMP will provide details on: (a) the planned activities (b) the potential environmental impact of each activity – with details on quantities where applicable (c) measures to mitigate negative environmental impacts (d) measures to enhance positive environmental impacts (e) entity with responsibility for implementation of the identified mitigation and enhancement measures.

Procedure: The two (2) key steps to be followed are: (a) Preparation of the site-specific ESMP based on the Generic ESMP provided (b) Integration of the ESMP into the Contract Documents for civil works. The Contractor will prepare a Contractor's ESMP based on the site-specific ESMP. The C-ESMP will include an Occupational Health and Safety (OHS) Plan[5]. The C-ESMP will adhere to the sub-project ESMP and will contain additional details such as approved sites for material storage, approved sites for waste disposal, identified waste recyclers, approved sites for compensatory plantation, etc.

To facilitate preparation of the site-specific ESMP, 'Generic ESMP' has been provided in **Annex-10** as a guidance document.

Responsibility: The responsibility of preparing the ESMP for each institute lies with the environment and social coordinator of the institute in consultation with state Environment and Social Experts. The responsibility of preparing the C-ESMP (including OHS Plan) is with the Contractor, to be supported by the institutions and SPIUs. The central PIU Environmental and Social Experts will ensure that all the

[5] For details, please refer to Labor Management Procedure for MERITE project.

key risks/impacts are adequately addressed and that provision has been made to meet the costs involved.

4.3.3. Environmental Guidelines for Operation and Maintenance of Institutions

Description: A set of environmental guidelines, based on national and international good practice and standards, have been developed to enable environment-friendly operation and maintenance of institute. The guidelines cover operation and maintenance aspects related to the campus, building and facilities, sanitation infrastructure, water supply, waste management systems, electrical systems, safety and disaster preparedness systems, etc. The 'Environmental Guidelines for Operation and Maintenance of Institute' are presented in **Annex-11**.

Procedure: The 'Environmental Guidelines for Operation and Maintenance of Institutions' will be circulated to all institutions by the central PIU. Institute functionaries will be provided orientation on the guidelines by the Environmental Expert (PIU) during the planning phase of the project.

Responsibility: The responsibility of circulating the guidelines to institute lies with PIU. The responsibility of organizing orientation sessions on the guidelines for institute functionaries lies with PIU.

4.3.4. Institutional arrangements

Table 4.10: Institutional Arrangements for ESMF

Management Level	Environment Management Role / Function	Proposed Staff Position(s) and Institutional Hierarchy	Detailed Role Description
National (MERITE PIU)	Overall management of ESMF implementation and leadership	MERITE PIU will have a safeguards team, featuring a Senior Environment and Senior Social Specialist **Reports to**: Project Director	The Safeguards Team will be responsible for ensuring accurate implementation of the ESMF. The Environment and Social Specialists will provide the necessary leadership for effectively applying the Environment and Social aspects to the project activities. Specifically, the Senior E&S Specialists will: • Manage, coordinate and guide all State PIUs on ESMF application • Oversee ESMF implementation schedules in states and help address delays/weaknesses • Review ESMF documentation and periodic reports and take commensurate action wherever necessary • Undertake capacity building of all National / State and Institution level Project Staffs on Environment and ESMF • Maintain all relevant records pertaining to ESMF in MERITE PIU

Management Level	Environment Management Role / Function	Proposed Staff Position(s) and Institutional Hierarchy	Detailed Role Description
			and oversee maintenance of proper ESMF related records in State PIUs as well as Project supported Institutions
State (SPIU)	Management of ESMF implementation related activities at State level	The State PIUs will ensure deputation of staff for the management of E&S management, who will be the State Level Safeguards (Environment and Social) Nodal Officer **Reports to:** SPIU Head and PIU Environment and Senior Social Specialists	The State Level Safeguards Nodal Officer in the State PIU will coordinate and manage all Environment and Social Management activities in the State under guidance of PIU specialists. Specifically, s/he will: • Manage, coordinate and guide all State level activities ESMF application • Oversee ESMF implementation schedules in the institutions and help address delays/weaknesses • Review ESMF documentation from institutions and prepare periodic reports for sharing with MERITE PIU • Undertake capacity building of all Institution level Project Staffs on ESMF, including gender • Maintain relevant records pertaining to ESMF in State PIU and oversee maintenance of proper ESMF related records in the institutions as well as Project supported Institutions
Institution	Overseeing all ESMF related activities within the Institution	Each Project supported institution will appoint two Faculty member (from an appropriate department such as Environmental / Public Health / Civil / Industrial Engineering) as an Environmental and Social Coordinator **Reports to**: Institute Head and State PIU E&S Nodal officer	The institutional level Environment and Social Coordinator will be responsible for ensuring that applicable Environmental and Social Regulations are complied with and all institution level ESMF related obligations are successfully met in letter and spirit. Specifically, s/he will: • Lead, coordinate and manage all ESMF activities at institution level • Routinely report on progress on ESMF implementation to the Institution management as well as State PIU • Advice institution management on actions to be taken for optimal ESMF compliance • Maintain all institutional level ESMF related documentation

Management Level	Environment Management Role / Function	Proposed Staff Position(s) and Institutional Hierarchy	Detailed Role Description
			• Participate in capacity building activities as a resource person, whenever required.

Capacity Building

Table 4.11: Training plan for the stakeholders

SN	Staff/Stakeholder Category	Title of Training	Broad Training Content	Training Duration	Trainer
1.	National PIU Staff	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	Half day	• Environment and Social Focal Point, National PIU and World Bank E&S Task Team Members
2.	State PIU Staff	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	Half day	• Environment and Social Focal Point, National PIU
3.	SPIU Environmental and Social focal Points	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	1 day	• Environment and Social Focal Point, National PIU
4.	Central Government Counterpart staff	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	Half day	• Environment and Social Focal Point, National PIU
5.	State Government Counterpart staff	Introduction to ESMF systems and procedures	• General information on E&S risks associated with	Half day	• Environment and Social Focal Point, State PIU

SN	Staff/Stakeholder Category	Title of Training	Broad Training Content	Training Duration	Trainer
			the MERITE project • ESMF Systems and Procedures		
6.	Project Management of participating institutions	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	Half day	• Environment and Social Focal Point, State PIU
7.	Environmental Focal Points of Institutions	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	1 day	• Environment and Social Focal Point, State PIU
8.	Faculty and associated Departmental staff of participating institutions	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	Half day	• Environmental and Social Focal Points of Institutions
9.	Contractors and Equipment Suppliers	Introduction to ESMF systems and procedures	• General information on E&S risks associated with the MERITE project • ESMF Systems and Procedures	Half day	• Environmental and Social Focal Points of Institutions

4.3.5. Monitoring and reporting

To enable coordination and reporting on Environment Management activities in a streamlined manner, the following two periodic reports are mandated by this ESMF:

1. **Quarterly Environment Progress Report (QEPR)** from SPIUs to MERITE PIU: This is a quarterly progress report to be submitted by the various SPIUs to the MERITE PIU flagging important Environment Management related issues emerging in the reporting quarter and seeking guidance and/or support on issues from higher Project Management. A suggested format for this report is given in Annex-12.

2. **Half-yearly Environment Progress Report (HEPR)** from MERITE PIU to World Bank: This is a consolidated report submitted on a half-yearly basis by the MERITE PIU to the World Bank highlighting and flagging important Environment related matters/issues that may have emerged in the reporting period and seeking guidance on those that require hand-holding or expert advice. A suggested format for this report is given in Annex-13.

5. Chapter 5: Management of Social Aspects (Including Gender and Inclusion)

5.1. Baseline Social Assessment

5.1.1. Demographic Profile

5.1.1.1 Population

India is the second most populated country globally, with a sixth of the world's population. According to the 2019 revision of the World Population Prospects, the population stood at 1,35,26,42,280. India is projected to surpass China to become the world's most populous country by 2024. It is expected to become the first country to be home to more than 1.5 billion people by 2030, and its population is set to reach 1.7 billion by 2050.

India has more than 50% of its population below the age of 25 and more than 65% below 35. In 2020, the average age of an Indian was 28.4 years, compared to 37 for China and 48 for Japan, and, by 2030, India's dependency ratio will be just over 0.4.

The sex ratio was 940 per 1000 in 2011[6]. This ratio has been showing an upward trend for the last two decades after a continuous decline in the last century.

Table 5.1: Population growth of India per decade

Census year	Population	Change (%)
1951	361,088,003	–
1961	439,235,000	21.6
1971	548,160,000	24.8
1981	683,329,000	24.7
1991	846,387,888	23.9
2001	1,028,737,436	21.5
2011	1,210,726,932	17.7

The percentage of state-wise population is attached as Annex-14.

[6] Data from the Census 2011.

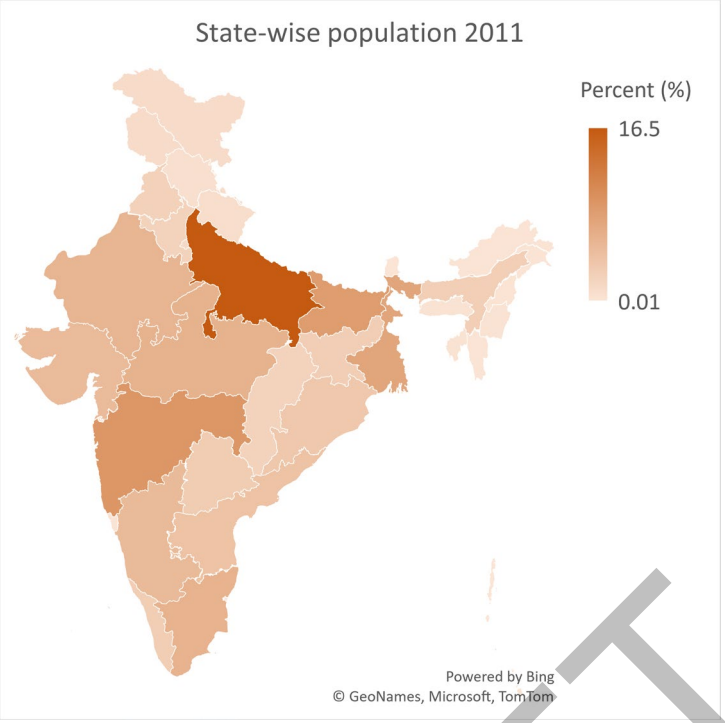

Figure 5.1: State-wise population 2011

5.1.1.2 Gender-based Population

A decline in the child sex ratio (0–6 years) was observed with India's 2011 census reporting that it stands at 914 females against 1,000 males, dropping from 927 in 2001 – the lowest since India's independence. Female infanticide and sex-selective abortion is adopted and strongly reflects the societally low status of Indian women. The decline of girl population (as a percentage to total population) under the age of seven, with activists estimating that eight million female fetuses may have been aborted in the past decade. State-wise sex ratio has been attached as Annex-15.

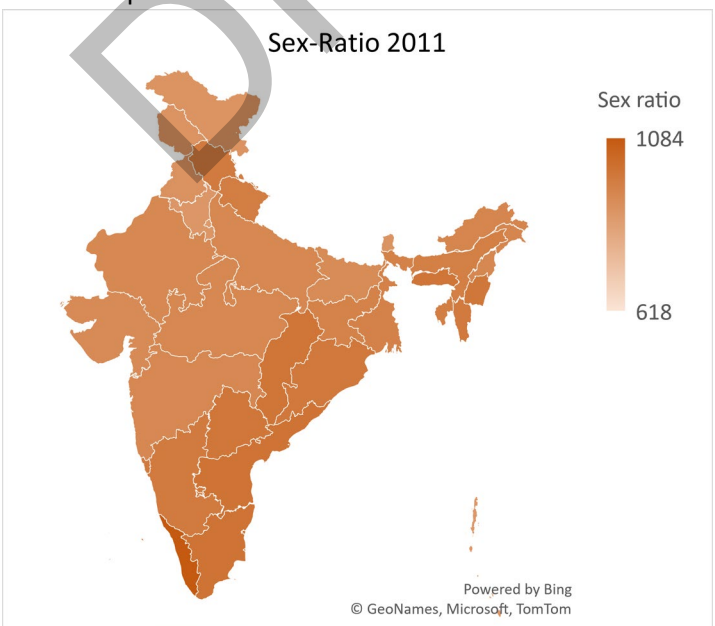

Figure 5.2: India's State-wise sex-ratio map

5.1.1.3 Caste-based Population[7]

Table 5.2: Caste Based Population

Religion/Caste Category	SCs	STs	OBCs	Forward Caste
Hinduism	22.20%	9.00%	42.80%	27%
Islam	0.80%	0.50%	39.20%	59.5%
Christianity	9.00%	32.80%	24.80%	33.3%
Sikhism	30.70%	0.90%	22.40%	46.1% Sikhism does not have a caste system
Jainism	0.00%	2.60%	3.00%	94.3%
Buddhism	89.50%	7.40%	0.40%	2.7%
Zoroastrianism	0.00%	15.90%	13.70%	70.4%
Others	2.60%	82.50%	6.25%	8.7%
Total	19.70%	8.50%	41.10%	30.8%

5.1.1.4 Linguistic-based Population[8]

43.63% of the Indians speak Hindi while the rest speak Assamese, Bengali, Gujarati, Maithili, Kannada, Malayalam, Marathi, Odia, Punjabi, Tamil, Telugu, Urdu and a variety of other languages. There are a total of 122 languages and 234 mother tongues. The 22 languages are Languages specified in the Eighth Schedule of Indian Constitution and 100 non-specified languages.

Table 5.3: Linguistic Based Population

Language	Percentage (%)
Hindi	43.63
Bengali	8.03
Telugu	6.70
Marathi	6.86
Tamil	5.70
Urdu	4.19
Gujarati	4.58
Kannada	3.61
Malayalam	2.88
Odia	3.10
Punjabi	2.74
Assamese	1.26
Maithili	1.12
Bhili/Bhilodi	0.86
Santali	0.61
Kashmiri	0.56
Nepali	0.24
Gondi	0.25
Sindhi	0.23
Konkani	0.19
Dogri	0.21

[7] Data from Socio Economic Caste Census 2011
[8] Data from Census 2011

Language	Percentage (%)
Khandeshi	0.15
Kurukh	0.16
Tulu	0.15
Meitei (Manipuri)	0.15
Bodo	0.12
Khasi – Garo	0.12
Mundari	0.09
Ho	0.12
Tripuri	0.08

5.1.1.5 Age-wise Population[9]

Table 5.4: Age-wise Population

Age group	Male	Female	Total
0–4	8.7	8.2	8.5
5–9	9.1	8.8	8.9
10–14	9.8	9.4	9.6
15–19	10.4	9.9	10.1
20–24	10.2	10.7	10.4
25–29	9.5	9.8	9.7
30–34	8.1	8	8.1
35–39	7	7.2	7.1
40–44	6.1	6.1	6.1
45–49	5.3	5.4	5.3
50–54	4.4	4.3	4.3
55–59	3.5	3.7	3.6
60–64	3	3.1	3.1
65–69	2.1	2.2	2.2
70–74	1.4	1.5	1.5
75–79	0.8	0.9	0.9
80–84	0.4	0.5	0.5
85+	0.2	0.3	0.3
0–14	27.6	26.4	27
15–64	67.5	68.2	67.8
65+	4.9	5.4	5.4

5.1.1.6 Literacy Rate[10]

Literacy in India is a key for social-economic progress. The 2011 census, indicated a 2001–2011 literacy growth of 9.2%, which is slower than the growth seen during the previous decade. Census of India pegged average literacy rate to be 73% in 2011 while National Statistical Commission surveyed literacy to be 77.7% in 2017–18. Literacy rate in urban areas was higher 87.7% than rural areas with 73.5%.

[9] Data from Census 2011
[10] Data from Census 2011

There is a wide gender disparity in the literacy rate in India and effective literacy rates (age 7 and above) was 84.7% for men and 70.3% for women. Studies have indicated that female literacy is a strong predictor of the use of contraception among married Indian couples, even when women do not otherwise have economic independence. The census provided a positive indication that growth in female literacy rates (11.8%) was substantially faster than in male literacy rates (6.9%) in the 2001–2011 decadal period, which means the gender gap appears to be narrowing.

State-wise literacy rate is placed at Annex-16.

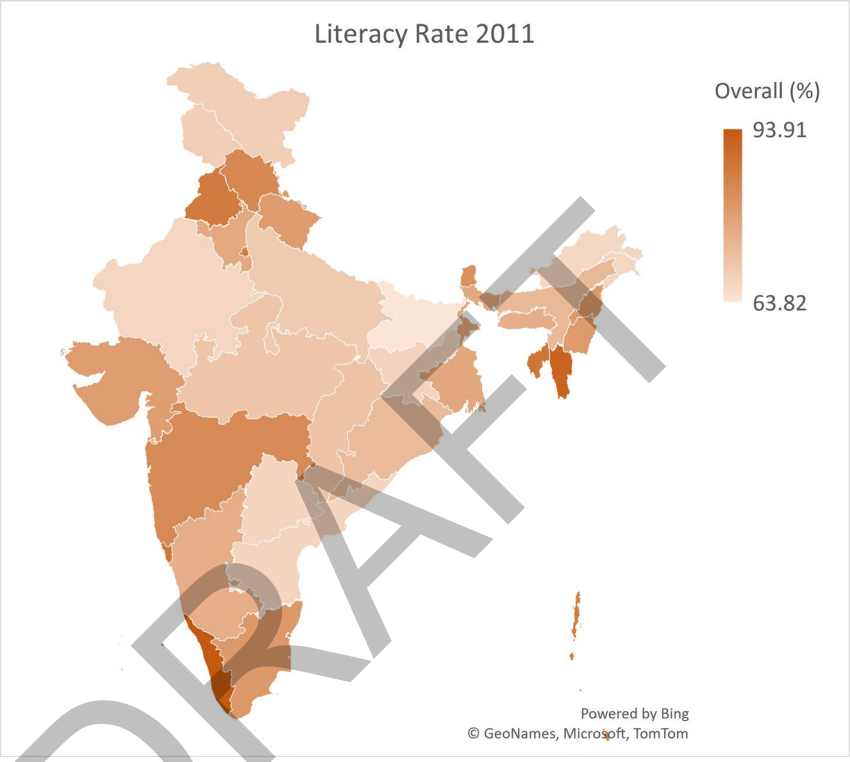

Figure 5.3: India's State-wise literacy rate map

5.1.2. Economic Profile

5.1.2.1 Manufacturing & Industries

Industry accounts for 26% of GDP and employs 22% of the total workforce. According to the World Bank, India's industrial manufacturing GDP output in 2015 was 6th largest in the world on current US dollar basis ($559 billion), and 9th largest on inflation-adjusted constant 2005 US dollar basis ($197.1 billion). The industrial sector underwent significant changes due to the 1991 economic reforms, which removed import restrictions, brought in foreign competition, led to the privatization of certain government-owned public-sector industries, liberalized the foreign direct investment (FDI) regime, improved infrastructure and led to an expansion in the production of fast-moving consumer goods. Post-liberalization, the Indian private sector was faced with increasing domestic and foreign competition, including the threat of cheaper Chinese imports. It has since handled the change by squeezing costs, revamping management, and relying on cheap labor and new technology. However, this has also reduced employment generation, even among smaller manufacturers who previously relied on labor-intensive processes. Manufacturing and tech industries are geographically located in industrial regions in India.

5.1.2.2 Workforce Participation

Agricultural and allied sectors accounted for about 52.1% of the total workforce in 2009–10. While agriculture employment has fallen over time in percentage of labor employed, services which include construction and infrastructure have seen a steady growth accounting for 20.3% of employment in 2012–13. Of the total workforce, 7% is in the organized sector, two-thirds of which are in the government-controlled public sector. About 51.2% of the workforce in India is self-employed.

Government schemes that target eradication of both poverty and unemployment – which in recent decades has sent millions of poor and unskilled people into urban areas in search of livelihoods – attempt to solve the problem by providing financial assistance for starting businesses, honing skills, setting up public sector enterprises, reservations in governments, etc. The decline in organized employment, due to the decreased role of the public sector after liberalization, has further underlined the need for focusing on better education and created political pressure for further reforms. Inequalities and inadequacies in the education system have been identified as an obstacle, which prevents the benefits of increased employment opportunities from reaching all sectors of society.

5.1.2.3 Income

The economy of India is a middle-income developing market economy. It is the world's sixth-largest economy by nominal GDP and the third-largest by purchasing power parity (PPP). With rising economic growth and prosperity, India's income is also rising rapidly. As an overview, India's per capita net national income or NNI was around 135 thousand rupees in 2020. The per-capita income is a crude indicator of the prosperity of a country.

India's nominal per capita income was US$1,670 per year in 2016, ranked 112th out of 164 countries by the World Bank, while its per capita income on purchasing power parity (PPP) basis was US$5,350, and ranked 106th.

The states of India have significant disparities in their average income. Bihar was by far the poorest in India, and per capita income was low in its neighboring states, along with Uttar Pradesh, Jharkhand, Jammu & Kashmir, Assam, Manipur, and Nagaland. The higher income states include Goa, Delhi, Haryana, Sikkim, Telangana, Maharashtra, Tamil Nadu, Gujarat, Himachal Pradesh, Punjab, Uttarakhand, and Kerala.

5.1.3. Tertiary Education Profile

5.1.3.1 Present Status

In the 2011 Census, about 73% of the population was literate, with 81% for males and 65% for females. National Statistical Commission surveyed literacy to be 77.7% in 2017–18, 84.7% for male and 70.3% for female. The literacy rate of Indian Population between the age of 15-24 years is 84.2% for male and 67.7% for females.

Education in India is a Concurrent List subject. Education in India is primarily managed by state-run public education system, which fall under the command of the government at three levels: Central, state and local. In a country as large as India, now with 28 states and eight union territories, this means that the potential for variations between states in the policies, plans, programs and initiatives for elementary education is vast.

India's improved education system is often cited as one of the main contributors to its economic development. Much of the progress, especially in higher education and scientific research, has been credited to various public institutions. While enrolment in higher education has increased steadily over the past decade, reaching a Gross Enrolment Ratio (GER) of 27.1% in 2020, there still remains a significant distance to catch up with tertiary education enrolment levels of developed nations, a

challenge that will be necessary to overcome in order to continue to reap a demographic dividend from India's comparatively young population.

India has a publicly funded higher education system, that is the third largest in the world, next to the United States and China. The main governing body at the tertiary level is the University Grants Commission (UGC), which enforces its standards, advises the government, and helps coordinate between the center and the state. Accreditation for higher learning is overseen by 15 autonomous institutions established by the University Grants Commission (UGC).

In India's higher education system, a significant number of seats are reserved under affirmative action policies for the historically disadvantaged Scheduled Castes and Scheduled Tribes and Other Backward Classes.

As of 2020, India has over 1000 universities, with a break up of 54 central universities, 416 state universities, 125 deemed universities, 361 private universities and 159 Institutes of National Importance which include AIIMS, IIMs, IIITs, IISERs, IITs and NITs among others. Other institutions include 52,627 colleges as government degree colleges, private colleges, standalone institutes and post-graduate research institutions, functioning under these universities as reported by the MoE in 2020. Colleges may be Autonomous, i.e., empowered to examine their own degrees, up to PhD level in some cases, or non-autonomous, in which case their examinations are under the supervision of the university to which they are affiliated; in either case, however, degrees are awarded in the name of the university rather than the college.

Some institutions of India, such as the Indian Institutes of Technology (IITs), Birla Institute of Technology and Science Pilani (BITS), National Institutes of Technology (NITs), Indian Institute of Science (IISc), Indian Institute of Science Education and Research (IISERs), Indian Institutes of Management (IIMs), University of Delhi, University of Calcutta, University of Madras, Jawaharlal Nehru University have been globally acclaimed for their standard of education.

Universities in India have evolved in divergent streams with each stream monitored by an apex body, indirectly controlled by the Ministry of Education and funded jointly by the state governments.

The National Institute of Technology (NITs) and Indian Institutes of Technology (IITs) are among the most prestigious institutions within the technology sciences. Indian Institute of Science (IISc) and Indian Institute of Science Education and Research (IISERs) are the premier research institutes in the field of science education and research. There are several thousand colleges (affiliated to different universities) that provide undergraduate science, agriculture, commerce and humanities courses in India.

Technical education has grown rapidly in recent years. Of 27.3 million students enrolled in undergraduate studies, about 4.5 million are in engineering fields. With recent capacity additions, it now appears that the nation has the capability to graduate over 500,000 engineers (with 4-yr undergraduate degrees) annually, and there is also a corresponding increase in the graduation of computer scientists (roughly 50,000 with post-graduate degree). In addition, the nation graduates over 1.2 million scientists. Furthermore, each year, the nation is enrolling at least 350,000 in its engineering diploma programs (with plans to increase this by about 50,000). Thus, India's annual enrollment of scientists, engineers and technicians now exceeds 2 million.

India is also the leading source of international students around the world. More than 200,000 Indian students are studying abroad. They are likely to be enrolled in master's programs with engineering focus which provide them opportunities to enhance career potential.

5.1.3.2 NEP 2020

The new National Education Policy 2020 (NEP 2020) introduced by the central government is expected to bring profound changes to education in India. The policy approved by the Cabinet of India on 29 July 2020, outlines the vision of India's new education system. The new policy replaces the 1986 National Policy on Education. The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. The policy aims to transform India's education system by 2021.

NEP's higher education policy proposes a 4-year multi-disciplinary bachelor's degree in an undergraduate programme with multiple exit options. These will include professional and vocational areas and will be implemented:

a. A certificate after completing 1 year of study (vocational)
b. A diploma after completing 2 years of study (vocational)
c. A Bachelor's degree after completion of a 3-year program (professional)
d. A 4-year multidisciplinary Bachelor's degree (the preferred option) (professional)

The National Education Policy (NEP) 2020 lays out an ambitious reform agenda for education in India. In order to support the implementation of the NEP 2020, the new MERITE project proposes to pilot related reforms in the technical/engineering education sector. The technical/engineering education sector, serving over 40 lakh students, is an important vehicle for India's growth and economic development. The project will support modernization of the sector through NEP 2020-aligned reforms. The outcomes of the project are likely to assist in achieving targets of "AtmaNirbhar Bharat". The main focus of MERITE project will be on following:

- Enhancing the environment of education and research, through improvements in course offerings, pedagogical practices and assessment as well as digitalization and inculcating research practices.
- Improving employability of engineering graduates, by strengthening skills and entrepreneurship capabilities and deepening industry linkages.
- Increasing equitable access to technical education, with a focus on women and socially and economically disadvantaged groups and strengthen female careers.
- Strengthening sector steering, through improvements in governance, quality assurance and financing thereby bringing about greater transparency and accountability in technical education.
- Enhancing the ecosystem, by supporting multidisciplinary institutions and programs, phasing out the affiliation model and ensuring sustainability of reforms.

5.1.3.3 Accreditation

Indian law requires that universities be accredited unless created through an act of Parliament.

Accreditation for higher learning is overseen by autonomous institutions established by the University Grants Commission:

- All India Council for Technical Education (AICTE)
- Distance Education Bureau (DEB)
- Indian Council of Agricultural Research (ICAR)
- Bar Council of India (BCI)
- National Assessment and Accreditation Council (NAAC)
- National Council for Teacher Education (NCTE)
- Rehabilitation Council of India (RCI)
- National Medical Commission (NMC)
- Pharmacy Council of India (PCI)

- Indian Nursing Council (INC)
- Dental Council of India (DCI)
- Central Council of Homeopathy (CCH)
- Central Council of Indian Medicine (CCIM)
- Veterinary Council of India (VCI)

5.1.3.4 Administration

The institutional framework of higher education in India consists of Universities and Colleges. The education system of India falls broadly under the Ministry of Education (MoE). Amongst the branches of the MoE, the Department of Higher Education (DHE) is responsible for overseeing the growth of the higher education sector. The Department aims to improve quality of and access to higher education for all sections of the population. One of the key objectives of the Department is to increase the Gross Enrolment Ratio (GER) in higher education to 50% by 2035. Some of the other objectives of the department include: expansion of institutional base, greater inclusion of minorities, removal of regional disparities, infrastructural improvement and increased global participation.

5.1.3.5 Rankings

University rankings are used to measure and compare institutional quality based on a range of indicators related to research, reputation and teaching. Indian government's National Institutional Ranking Framework, or NIRF is the mechanism for measuring quality and also intended to determine funding and world-class university endeavors. The Indian Institute of Technology, Madras was ranked 1st among the Indian institutions in NIRF rankings 2021 with a score of 86.76.

5.1.4. Gender Analysis

5.1.4.1 Education of Women in India

The education of women in India plays a significant role in improving livings standards in the country. A higher female literacy rate improves the quality of life both at home and outside the home, by encouraging and promoting education of children, especially female children, and in reducing the infant mortality rate. Several studies have shown that a lower level of women literacy rates results in higher levels of fertility and infant mortality, poorer nutrition, lower earning potential and the lack of an ability to make decisions within a household. Women's lower educational levels is also shown to adversely affect the health and living conditions of children. A survey that was conducted in India showed results which support the fact that infant mortality rate was inversely related to female literacy rate and educational level. The survey also suggests a correlation between education and economic growth.

In India, there is a large disparity between female literacy rates in different states. State of Kerala has the highest female literacy rate of 91.98% while Rajasthan has the lowest female literacy rate of 52.66. This correlates to the health levels of states, Kerala has average life expectancy at birth of 74.9 while Rajasthan's average life expectancy at birth is 67.7 years.

In India, higher education is defined as the education of an age group between 18 and 24, and is largely funded by the government. Despite women making up 24–50% of higher education enrolment, there is still a gender imbalance within higher education. Only one third of science students and 7% of engineering students, are women. In comparison, however, over half the students studying Education are women.

An underlying factor for such low literacy rates are parents' perceptions that education for girls are a waste of resources as their daughters would eventually live with their husbands' families. Thus, there

is a strong belief that due to their traditional duty and role as housewives, daughters would not benefit directly from the education investment.

Female literacy rate in different census year:

Table 5.5: Female Literacy Rate

Census Year	Female Literacy (%)
1951	8.9
1961	15.4
1971	22
1981	29.8
1991	39.8
2001	53.7
2011	64.6

5.1.4.2 Gross Enrollment Ratio (GER)

GER for female population at all India level is 27.3% whereas for SC female it is 24.1% and for ST female, it is 17.7%. The GER for female in all social group is highest in Sikkim with 67.6%. Andhra Pradesh, Arunachal Pradesh, Chandigarh, Delhi, Goa, Haryana, Himachal Pradesh, Puducherry, Tamil Nadu, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Manipur, Punjab, Telangana and Uttarakhand also have GER of more than 30% for female in all category.

5.1.4.3 Workforce Participation

Contrary to common perception, a large percentage of women in India are actively engaged in traditional and non-traditional work. National data collection agencies accept that statistics seriously understate women's contribution as workers. However, there are far fewer women than men in the paid workforce. In urban India, women participate in the workforce in impressive numbers. For example, in the software industry 30% of the workforce is female. In rural India in the agriculture and allied industrial sectors, women account for as much as 89.5% of the labor force. In overall farm production, women's average contribution is estimated at 55% to 66% of the total labor.

Discrimination against women has contributed to gender wage differentials, with Indian women on average earning 64% of what their male counterparts earn for the same occupation and level of qualification. This has led to their lack of autonomy and authority.

5.1.4.4 Gender Inequality

Gender inequality in India refers to the health, education, economic and political inequalities between men and women in India. Gender inequalities, and their social causes, impact India's sex ratio, women's health over their lifetimes, their educational attainment, and even the economic conditions too. It also prevents the institution of equal rape laws for men. Gender inequality in India is a multifaceted issue that primarily concerns women, but some argue that various gender equality indices place men at a disadvantage, or that it affects each gender equally. However, when India's population is examined as a whole, women are at a disadvantage in several important ways. Although the constitution of India grants men and women equal rights, gender disparities remain.

Research shows gender discrimination mostly in favor of men in many realms including the workplace. Discrimination affects many aspects in the lives of women from career development and progress to mental health disorders. While Indian laws on rape, dowry and adultery have women's safety at heart, these highly discriminatory practices are still taking place at an alarming rate, affecting the lives of many today.

India stands at rank 140 among 156 countries in global gender index gap published by world economic forum 2021. One of the most important sources of inequality between men and women is women's underrepresentation in the labor market. Participating in labor markets has been an important channel for economic empowerment of women and for building diverse, inclusive and innovative organization. In India only 22.3% of women participate in the labor market, translating to a gender gap of 72%. India (93.7%) have uneven access to health for women and pre- or post-natal sex selection persist.

In India, only 29.2% of technical roles are held by women. The income of average woman in India is below 20.7% that of an average man. The low performance of India can be traced to the persistence of son preference and sex selective practices, preventing a faster evolution toward parity on this dimension.

Home to 0.65 billion women, India has closed 62.5% of its gender gap to date, ranking the country 140th globally. This gap is 4.2 percentage points larger than recorded in the previous edition 2020, which explains why India has fallen 28 places in the ranking. Most of the decline has occurred on the Political Empowerment subindex, where India has regressed 13.5 percentage points to reach a level of gap closed to date of just 27.6%.

Decline also took place on the Economic Participation and Opportunity subindex, albeit to a lesser extent. India's gender gap on this dimension widens by 3% this year, leading to a 32.6% gap closed to date. Among the drivers of this decline are a decrease in women's labor force participation rate, which fell from 24.8% to 22.3%.

In addition, the share of women in professional and technical roles declined further to 29.2%. The share of women in senior and managerial positions also remains low: only 14.6% of these positions are held by women and there are only 8.9% of firms with female top managers. Further, women's estimated earned income is only one-fifth of men's, which puts India among the bottom 10 globally on this indicator.

Discrimination against women is also reflected in Health and Survival subindex statistics. With 93.7% of this gap closed to date, India ranks among the bottom five countries in this subindex. Wide sex ratio at birth gaps are due to high incidence of gender- based sex-selective practices. In addition, more than one in four women has faced intimate violence in her lifetime.

Conversely, 96.2% of the Educational Attainment subindex gender gap has been closed, with parity achieved in primary, secondary and tertiary education. Yet, gender gaps persist in terms of literacy: one third of women are illiterate (34.2%) compared to 17.6% of men.

Reasons for gender inequality in India:

1. Gender inequality has been a historic worldwide phenomenon, not a human invention and based on gender assumptions. It is linked to kinship rules rooted in cultures and gender norms that organizes human social life, human relations, as well as promotes subordination of women in a form of social strata. Amartya Sen highlighted the need to consider the socio-cultural influences that promote gender inequalities. In India, cultural influences favor the preference for sons for reasons related to kinship, lineage, inheritance, identity, status, and economic security. This preference cuts across class and caste lines, and it discriminates against girls. In extreme cases, the discrimination takes the form of honor killings where families kill daughters or daughters-in-law who fail to conform to gender expectations about marriage and sexuality. When a woman does not conform to expected gender norms she is shamed and humiliated because it impacts both her and her family's honor, and

perhaps her ability to marry. The causes of gender inequalities are complex, but a number of cultural factors in India can explain how son preference, a key driver of daughter neglect, is so prevalent.

2. Patriarchy is a social system of privilege in which men are the primary authority figures, occupying roles of political leadership, moral authority, control of property, and authority over women and children. Most of India, with some exceptions, has strong patriarchal and patrilineal customs, where men hold authority over female family members and inherit family property and title. Examples of patriarchy in India include prevailing customs where inheritance passes from father to son, women move in with the husband and his family upon marriage, and marriages include a bride price or dowry. This 'inter-generational contract' provides strong social and economic incentives for raising sons and disincentives for raising daughters. The parents of the woman essentially lose all they have invested in their daughter to her husband's family, which is a disincentive for investing in their girls during youth. Furthermore, sons are expected to support their parents in old age and women have very limited ability to assist their own parents.

3. A key factor driving gender inequality is the preference for sons, as they are deemed more useful than girls. Boys are given the exclusive rights to inherit the family name and properties and they are viewed as additional status for their family. In a survey-based study of 1990s data, scholars found that son are believed to have a higher economic utility as they can provide additional labor in agriculture. Another factor is that of religious practices, which can only be performed by males for their parents' afterlife. All these factors make sons more desirable. Additionally, sons are often the only person entitled to performing funeral rites for their parents. Thus, a combination of factors has shaped the imbalanced view of sexes in India. A 2005 study in Madurai, India, found that old age security, economic motivation, and to a lesser extent, religious obligations, continuation of the family name, and help in business or farm, were key reasons for son preference. In turn, emotional support and old age security were the main reasons for daughter preference. The study underscored a strong belief that a daughter is a liability.

4. While women express a strong preference for having at least one son, the evidence of discrimination against girls after they are born is mixed. A study of 1990s survey data by scholars found less evidence of systematic discrimination in feeding practices between young boys and girls, or gender-based nutritional discrimination in India. In impoverished families, these scholars found that daughters face discrimination in the medical treatment of illnesses and in the administration of vaccinations against serious childhood diseases. These practices were a cause of health and survival inequality for girls. While gender discrimination is a universal phenomenon in poor nations, a 2005 UN study found that social norms-based gender discrimination leads to gender inequality in India.

5. In India, dowry is the payment in cash or some kind of gifts given to bridegroom's family along with the bride. The practice is widespread across geographic region, class and religions. The dowry system in India contributes to gender inequalities by influencing the perception that girls are a burden on families. Such beliefs limit the resources invested by parents in their girls and limits her bargaining power within the family. Parents save gold for dowry for their daughters since their birth but do not invest so they could earn gold medals. The payment of a dowry has been prohibited under the 1961 Dowry Prohibition Act in Indian civil law and subsequently by Sections 304B and 498a of the Indian Penal Code (IPC). Despite of the laws dowry abuse and domestic abuse is rising. Several studies show that while attitudes of people are changing about dowry, the institution has changed very little, and prejudices even continues to prevail.

5.1.5. Vulnerable Population Analysis

5.1.5.1 Introduction

The Scheduled Castes (SCs) and Scheduled Tribes (STs) are officially designated groups of people and among the most disadvantaged socio-economic groups in India. The terms are recognized in the Constitution of India and the groups are designated in one or other of the categories. The Scheduled Castes and Scheduled Tribes comprise about 16.6% and 8.6%, respectively, of India's population (according to the 2011 census). The Constitution (Scheduled Castes) Order, 1950 lists 1,108 castes across 28 states in its First Schedule, and the Constitution (Scheduled Tribes) Order, 1950 lists 744 tribes across 22 states in its First Schedule. Since the independence of India, the Scheduled Castes and Scheduled Tribes were given Reservation status, guaranteeing political representation, and the Constitution lays down the general principles of positive discrimination for SCs and STs.

The Constitution provides a three-pronged strategy to improve the situation of SCs and STs:

- **Protective arrangements:** Such measures as are required to enforce equality, to provide punitive measures for transgressions, and to eliminate established practices that perpetuate inequities. A number of laws were enacted to implement the provisions in the Constitution. Examples of such laws include the Untouchability Practices Act, 1955, Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act, 1989, The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993, etc. Despite legislation, social discrimination and atrocities against the backward castes continued to persist.
- **Affirmative action:** Provide positive treatment in allotment of jobs and access to higher education as a means to accelerate the integration of the SCs and STs with mainstream society. Affirmative action is popularly known as reservation. Article 16 of the Constitution states "nothing in this article shall prevent the State from making any provisions for the reservation of appointments or posts in favor of any backward class of citizens, which, in the opinion of the state, is not adequately represented in the services under the State". However, the reservations from affirmative action were only allotted in the public sector, not the private.
- **Development:** Provide resources and benefits to bridge the socioeconomic gap between the SCs and STs and other communities. Legislation to improve the socioeconomic situation of SCs and STs because twenty-seven percent of SC and thirty-seven percent of ST households lived below the poverty line, compared to the mere eleven percent among other households. Additionally, the backward castes were poorer than other groups in Indian society, and they suffered from higher morbidity and mortality rates.

To effectively implement the safeguards built into the Constitution and other legislation, the Constitution under Articles 338 and 338A provides for two statutory commissions: the National Commission for Scheduled Castes, and the National Commission for Scheduled Tribes.

The state-wise SC and ST population as per Census 2011 is placed at Annex-17 & Annex-18 respectively.

5.1.5.2 Education of vulnerable population

For the weaker sections of society, education has a special significance because for a number of centuries, their illiteracy and social backwardness have been used for their harassment, humiliation and economic exploitation. The problems of education of the underprivileged groups and the general population are different both quantitatively as well as qualitatively. The literary rate for general population in India (74%), according to the 2011 census, was 8 per cent to 15 per cent higher than that of SCs and STs (with SCs having 66.1% and STs having 59% literacy rate).

5.1.5.3 Enrolment

The Gross Enrolment Ratio (GER) in Higher education in India is 27.1% in 2020-21, which is calculated for the 18-23 years of age group. GER for the male population is 26.9% and for females, it is 27.3%. For Scheduled Castes, it is 23.4% and for Scheduled Tribes, it is 18% as compared to the national GER of 27.1%.

Among the Scheduled Category (SC) category, the overall GER increased from 19.9% to 23.4% in the last 5 years. Male GER among SCs registered a nominal increase from 20.8% (2015-16) to 22.8% (2019-20). However, Female GER has recorded a relatively significant increase from 19% (2015-16) to 24.1% (2019-20).

Among the Scheduled Tribe (ST) category, the overall GER increased from 14.2% to 18% in the last 5 years. Male GER among STs registered an increase from 15.6% (2015-16) to 18.2% (2019-20) and female GER has also recorded a significant increase from 12.9% (2015-16) to 17.7% (2019-20).

GER among Social Categories across major states shows the enrolment ratio for Scheduled Caste and Scheduled Tribe categories remains lower than the total enrolment ratio for the state in most cases.

5.1.5.4 Work Force Participation

Even though officially unacknowledged, caste remains a primary source and the most pervasive parameter of social stratification in India. Only about 4 percent each of rural Scheduled Tribe and Scheduled Caste households have a member in a government job, according to the findings of the Socio Economic and Caste Census 2011.

A survey conducted by the Indian Institute of Dalit Studies (IIDS), 1992 households in 80 villages across the states of Haryana, Maharashtra, Tamil Nadu and Uttar Pradesh in 2013, showed that amongst 441 farm wage laborers 41 percent were denied work by the high caste employers due to caste prejudice and believed "polluting statuses" of the untouchables. Approximately 71 per cent of the SC farm wage workers reported a loss of an average of 43 work days due to discrimination in hiring. Among 389 non-farm wage laborers 52 per cent reported denial of work due to caste bias. In a similar urban labor market study, of the 314 regular salaried workers, 18 per cent SCs reported discrimination in selection, 22 per cent reported high caste employers preferring employees from their own caste and 23 per cent stated that high caste candidates with lesser qualification were selected.

As per the 2021-22 Annual Report by Ministry of Labor & Employment, National Career Service Centres (NCSCs) for Scheduled Castes and Scheduled Tribes (erstwhile Coaching-cum-Guidance Centres for SC/ST) were established by Directorate General of Employment & Training (now Directorate General of Employment), Ministry of Labor & Employment, Govt. of India. These Centres provide services to educated SC/ST job seekers registered with Employment Exchanges for enhancing their employability through coaching, counselling and related training programmes. Some of the programmes organized by these Centres cover confidence building, individual guidance, mock interviews, training and practice in typing, shorthand and computer, etc.

5.2. Assessment of Key Social Issues, Constraints, Opportunities

5.2.1. Potential Social Impacts and Risks

Table 5.6: Potential Social Impacts and Risks

Component No.	Activities	Positive Impact	Risks
Component 1: Improving quality and equity in selected institutions			
1.1 Strengthening institutions to enhance student skills and employability	• Upgrading curricula in at least two (2) disciplines/programs in consultation with industry. • Student training in emerging technologies and employability skills, including communication, technology use, systems thinking, etc. to improve labor market success • Internships to improve workplace readiness and connect theoretical knowledge with real-life applications. Mentorship programs, including networking with professional associations, to improve labor market transitions among girl students. • Professional development of faculty to improve technical and pedagogical skills, including in technology-based teaching-learning and assessments. • Assessment and tracking of student technical skills. • Digital capabilities assessment in participating institutions and development of a digital transformation action plan based on institutional priorities.	• Improved quality of teaching-learning and better absorption in the job markets by curricula updating. • Skill development of students and internships are likely to enhance student's proficiency levels and improve employment prospects. • Capacity building of teachers will lead to enhanced quality of teaching. • Assessments could increase the accountability, interest and motivation of faculty to perform better. • Understanding trends could help modify teaching strategies for effective learning outcomes. Improved • Digital infrastructure at institute for accessible teaching-learning/ exchange of knowledge. Gap filling for lack of teachers.	• Retaining quality teachers if there is lack of incentive. • Increase in cyber-crime, cyberbullying with greater use of digital technologies. • Access will be contingent on the availability of the internet. • Access could be restricted to those with resources (phone/computer). • Skewed impacts on learning outcomes for girls due to intra-household dynamics and access to digital learning equipment. • Increased use of remote learning may affect learning outcomes generated through in-person interactions and physical presence. • Infrastructure upgradation activities may entail risks to the safety of students with the presence of vendors, construction workers. • The workload at the universities/institutions is likely to go up, which may have implications on resources, and the lack of capacity of local staff.

Component No.	Activities	Positive Impact	Risks
			• Temporary limitation of access to public spaces.
1.2 Promoting equitable access	• Development and distribution of materials/ educational resources, including in Indian languages, to support students catch-up and address learning gaps. • Proactive academic advisement by faculty, counseling and peer support services for students will be established and strengthened to improve student adjustment. • Outreach programs organized by participating institutions to high schools with the aim of providing prospective students (and parents/guardians) information on technical education program options, admissions requirements, employment trends, financial aid schemes, etc. • To support institutions to offer programs designed to build interest in engineering and technology among high school students, especially girls. • Financial aid policies and schemes (central as well as state level) will be reviewed with recommendations for improvements in targeting and/or implementation of the schemes to better serve disadvantaged students.	• Availability of content in the native language may increase the transition rate of students. • Increased sensitization toward issues in the institute community w.r.t gender and vulnerable groups; guiding tool to reinforce safeguards related to child protection. • Greater inclusivity. • Increased sensitization about learning needs – improved performance • Increased STEM learning.	• Increased use of learning in native language may affect employability outcomes. • Lack of data on SEDG students could pose a risk in the inadequacy of intervention. • Literacy levels amongst community may affect participation levels in the outreach programs.
1.3 Introducing multidisciplinary education	• Support institutions to offer multidisciplinary courses under the	• Introduction of multidisciplinary course may increase the employability of students	• Lack of support from experienced institutions may hinder the implementation of this component

Component No.	Activities	Positive Impact	Risks
	mentorship of experienced leading institutions of technology.		
• **Component 2: Improving research for better skills and innovation**			
2.1 Collaborative Research Fund (CRF) and Ph.D. programs	• Support better research outcomes and strengthening the quality of Ph.D. training. • Establish skills labs and incubators linked to the R&D activities, provide technology transfer funds to incubates, seed funding to innovators to create start-ups, and deliver IPR support. • Special effort to target women faculty/student members to apply for research, technology transfer grants, and innovation seed funding.	• Competitive funding may lead to better research and innovation outcomes.	• Elite capture by the institutions. • Difficulty in finding suitable women candidates for the research funds. • Possible exclusion of eligible beneficiaries or vulnerable/ disadvantaged groups due to lack of information or capacity to apply.
2.2 Developing innovation eco-systems	• Fund pre-incubation activities (Maker labs, skills labs (including tools, software, fabrication machines) and Hackathons etc. • Establishment of a Technology Transfer Fund (TTF), which will support promising technological research with an existing prototype or advanced model for commercialization. • Establishment of an Innovator Seed Fund (ISF), which will support promising start-up activities. • Central/state level workshops on patents, patent filing, technology transfer and commercialization will be conducted, and a team of innovation mentors will be established (faculty of the institution/incubation and from the industry) who can mentor on the feasibility	• Increase in number of entrepreneurs and start-ups.	• Not all MERITE institutions will have sufficient pre-conditions for investing in profitable business incubators and start-up activities. • Eligibility criteria (restricting faculty and students from institutions without prior experience in partnering with industry to develop products and services from applying for TTF and ISF) may create a rift with the eligible candidates.

Component No.	Activities	Positive Impact	Risks
	of an idea for patenting, how to formulate a patent, and other forms of IP protection (including copyright, design registration).		
2.3 Institutional innovation and entrepreneurship culture	• To collaborate closely with communities on "Technology Transfer for Public Good" in line with Unnat Bharat Abhiyan. They will assess the technological, livelihood, and infrastructure requirements for a quality life in these areas and then utilize their knowledge, prepare workable action plans for the selected areas.	• Increase in participation of students in the community problems and development of their solutions.	• No/poor application/takers • Capacity of the institutions to successfully execute/promote entrepreneurship culture.
• **Component 3: Sector steering, including governance and (HEI-) internal and external quality assurance**			
3.1 Quality assurance (QA)	• QA benchmarking within and across states. • Establishment and capacity building/training for state-level QA units. • Establishment/support to TEI-level QA units; training of staff and administrators for development and dissemination of institutional quality policies, self-assessment reports and preparation of accreditation procedures. • Support the development of regulations and mechanisms for the assessment of online technical education for which innovative QA procedures will be required.	• Strengthening of IQA, governance mechanisms and accountability as well as overall capacity building towards academic, administrative, financial autonomy. • Improvement-oriented evaluation and subsequent accreditation via external quality assurance (EQA) providers	• Lack of technical support from central agencies such as NBA may result in poor implementation of this sub-component.
3.2 Governance	• Phasing out of affiliation system: TA including developing guidelines and roadmaps on the central and state level. • TA on network reforms (state level) and financial incentives and training for move towards for i) clusters (link to Component 1	• Increased capacity of Institute leaders. • A step towards effective management of institutions. • Increased accountability.	• Standard frameworks may leave unique institutional management problems due to geography or socio-cultural dynamics. • Lack of incentive may hinder the motivation for autonomy.

Component No.	Activities	Positive Impact	Risks
	– multidisciplinary) and ii) institutional autonomy. • Cross-institutional mentoring. • At the institutional level, establishment and support for Boards of Governors; improvement of institutional steering and management. • Developing and piloting of GTS (Graduate Tracking System).		
3.3 Leadership training and academic careers	• Faculty training focusing a) on content (upgrade of subject-related knowledge, b) pedagogical skills and c) digitalization of teaching and learning. • Financing of evaluations of faculty development programs and their impact on instruction and student learning. • Participating states will be supported in developing a comprehensive strategy for continuous professional development of faculty. • Pilot states can develop and pilot innovative approaches for their academic career systems. • Provision of academic leadership training with a particular emphasis on support and mentoring schemes for new and future female academic leaders.	• Greater guidance for teachers and updated strategies for teaching, learning approaches will positively affect learning outcomes which in turn will translate into improved transition rate. • Enhanced learning outcomes, and improved quality of teaching. • Improved faculty capacities will positively affect learning outcomes. • Capacity building and skill enhancement for faculty will have a positive effect on learning outcomes of students.	• Institution's capacity to implement faculty development programs. • M&E and results-based faculty development programs. • Elite institutions (tier 1) may overpower other institutions. • Possibility of resources being directed mainly to elite institutions (depending upon performance, amongst other factors) • If not coupled with infrastructure and incentives, faculty participation may adversely affect their inclination. • Lack of guidance and monitoring by the SPIUs may affect the institution's performance.
3.4 Project Management	• Training and capacity building for NPIU and SPIU staff. • Funding for the project implementation, financial audits, monitoring and evaluation	• Increased understanding of challenges and efficient management resulting in improved implementation.	• Continuation of project staff • Uneven implementation and allocation of resources can increase

Component No.	Activities	Positive Impact	Risks
	(M&E) - including the monitoring of environmental and social aspects - and selected PIU operating expenses.	• M&E strategies will improve accountability and efficiency.	the gap between high-performing and low-performing institutions.

5.3. Social Risks vis-à-vis World Bank Environment & Social Standards

5.3.1. ESS 1 - Assessment and Management of Environmental and Social Risks and Impacts

Background: The Standard sets out the Client's responsibilities for assessing, managing, and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing to achieve environmental and social outcomes consistent with the Environmental Social Standards (ESSs).

The ESS1 is relevant to the MERITE project. The project will not support the construction of new buildings; however, minor works, including refurbishment of existing infrastructure, are permitted. The project will ensure that the civil works are undertaken on existing built-up areas and must not resort to involuntary land taking leading to physical and economic displacement. Potential environmental and social risks and impacts are predictable, expected to be temporary and reversible, low in magnitude, and site-specific, which will be managed through the site-specific environmental management and safety measures to be prepared following the ESMF, which must be included in the contracts.

In addition, if it is determined that a large number of (e.g., several hundred or more) IT equipment for teaching and learning will be procured under the project, as an integral project activity, the project will also support the preparation of an environmentally sound disposal plan for all electronic equipment to be financed by the project to ensure that these equipment will not cause environmental and health risks in future when they are retired.

At this stage, information about the beneficiary states/institutions is not available. The project will ensure a comprehensive, regionally, and ethnically balanced distribution of states/institutions and funds. While the beneficiary selection criteria will be further refined during project preparation, preference will be given to states/institutions that have the potential to implement NEP reforms successfully.

5.3.2. ESS 2 – Labor and Working Conditions

Background: ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. ESS2 applies to project workers, including full-time, part-time, temporary, seasonal, and migrant workers.

The Standard is relevant to the MERITE project. Based on the ESS2 requirements, the PIU/MERITE prepared a standalone LMP and will be disclosed by PIU/MERITE prior to appraisal by World Bank. The LMP, specifying direct workers, contractors, and subcontractors as follows:

Direct workers. The implementing Agency follows the national labor legislation and practices when hiring project staff. The NPD will manage and oversee all the public/civil servants deputed for the project at the DHE. Other than the DHE staff, MERITE has hired/will depute PIU/TSG staff for project implementation at the center and SPIU in the participating states. All the recruiting procedures are documented and filed in the folders. Monthly timesheets are also filed and kept accurately. Forty hours per week of employment is practiced and recorded on paper.

Contractors. The Contractors follow the legal provisions of the National Labor Code. PIU will also procure services from local service providers/civil works vendors at the national and local levels. They will recruit local staff and issue employment and service contracts for the employed people. The Contractors will have to follow Occupation Safety and Health rules, including strict implementation of established norms and procedures H&S, which depends on the type of conducting works, usage of PPE, training activities, and monitoring.

Sub-contractors. The contractors will recruit the sub-contractors (including local private firms) to implement project activities in the project areas. They are obliged to follow the local labor legislation and regulations during the sub-project implementation.

The ESMF includes sections on Occupational Health and Safety (OHS), including specific instruments that the client or the contractor must prepare prior to commencement of works (OHS management plan, codes of conduct, safety training, etc.). Civil works contracts will incorporate social and environmental mitigation measures based on the WBG EHS Guidelines and the ESMF. All civil works contracts will include industry-standard Codes of Conduct that include measures to prevent Gender-Based Violence/Sexual Exploitation and Abuse (GBV/SEA). GBV assessment too has been done. Grievance Redress Mechanism (GRM) will be explicitly provided for direct and contracted workers.

5.3.3. ESS 4 – Community Health and Safety

Background: This standard recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. It addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their specific circumstances, may be vulnerable.

ESS4 is relevant to the project. The project will ensure the safety of students, faculty, and workers during the building renovation work by adopting adequate OHS protocols following WBG EHS Guidelines. Seclusion of the construction area by putting up a fence, mitigation measures to control excessive noise and dust levels, and secure access to the site in the building for students and faculty and public use will be ensured through a robust mitigation and management plan in the ESMF, which has been prepared. Any sensitive receptors close to renovation sites will be identified during the screening of environmental impacts, and necessary mitigation measures will be provided in the site-specific ESMPs. The building's structural integrity and access of the disabled population to the buildings will also be assessed. However, the scale of construction is small, so the footprint currently limited to the boundary walls is not expected to spill over across communities beyond the boundary walls.

As specified in the ESMF, the project involves minor civil works, which require the labor force to be supplied mostly locally - it is anticipated that due to the nature and scope of rehabilitation activities, the level of labor influx will be insignificant; the associated risks will be low and manageable.

5.3.4. ESS 5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

The project will not take any private land through involuntary acquisition and avoid any physical displacement of residents for activities under the project. All works will be carried out within the existing available lands. However, infrastructure construction/ renovation may likely involve the

displacement of formal and informal private users/squatters. For these reasons, and mainly as a precautionary measure, the project triggers ESS5 on involuntary resettlement. A Resettlement Policy Framework (RPF – details in the following section) is being prepared by the MERITE and approved by the World Bank. Site-specific RAPs, where needed, will be developed during the project implementation. The RPF and any RAP will ensure the proper calculation and recording of the involuntary displacement impacts, identification of the affected people, and mitigation of their loss and effects. The purpose of the RPF and implementation of the RAPs is to ensure no adverse impact on the living conditions and livelihoods of the affected people because of the project. *Suppose there is only minor, temporary economic displacement affecting a small number of people. In that case, the ARAPs can be in the form of a specific section of the relevant ESMPs rather than free-standing documents.*

5.3.5. ESS 7- Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

The project includes skill and capacity development activities involving vulnerable communities (SC/ST/PWDs/Women); they can be characterized as indigenous peoples given their unique characteristics, including language, culture, occupation, and traditions. The social risk associated with the MERITE project is ensuring culturally appropriate benefits to the indigenous and other disadvantaged communities from the project's various initiatives for skill development and other interventions following the Bank's directive on Disadvantaged or Vulnerable Individuals or Groups. MERITE has triggered ESS7 and developed an Equity Action Plan (EAP- details in Chapter 7) to guide community participation and benefit-sharing inclusive of the vulnerable people.

5.3.6. ESS 10 – Stakeholder Engagement and Information Disclosure

Background: This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve projects' environmental and social sustainability, enhance project acceptance, and make a significant contribution to successful project design and implementation. The client will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts.

Project preparation has done the extensive mapping of the stakeholders. The client has prepared Stakeholder Engagement Plan (SEP), and individuals and groups likely to be affected (direct beneficiaries) have been identified. They include: the students (including vulnerable), faculty, staff of the institutions, incubators, as well as local communities, workers, and contractors, who will benefit directly from improved accessibility, infrastructure, and services. Mapping other interested parties, such as government agencies/ authorities and CSOs/NGOs, which may differ between subprojects, will be confirmed during implementation. Given the highly diverse stakeholder profile and that their expectations and orientation, as well as the capacity to interface with the project, are different, a Stakeholder Engagement Plan (SEP) has been developed, which identified and will continue to identify impediments during implementation as well, if any, at reaching out to stakeholders and reflect/ build the capacity of the client in engaging with stakeholders. The client has also developed a Grievance Redress Mechanism (GRM) to enable stakeholders to air their concerns/ comments/ suggestions if any.

5.4. Public Disclosure

Executive Summary ESMF will be disclosed while in the draft; ESMF will be discussed with stakeholders and finalized by incorporating the relevant stakeholder feedback. ESMF will be posted on the web page of MoE in English and the executive summary in the Hindi language. Finalized ESMF will be re-disclosed. SEP will also be disclosed, discussed with stakeholders, and finalized thereafter.
ESCP will be disclosed in draft and re-disclosed as approved by the World Bank after completing negotiations on the project between the Government of the Republic of India and the World Bank.

Table 5.7: Social Risks Identified vis-à-vis ESF

ESS	Potential Risks
ESS 1 • Assessment and Management of Environmental and Social Impacts and Risks to avoid adverse impacts and risks through the implementation of ESMPs	• Inadequate ESMPs and lack of capacity of the institutions to comply with the mitigation measures
ESS 2 • To promote safety and health at work. • To promote the fair treatment, non-discrimination and equal opportunity of project workers. • To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate. • To prevent the use of all forms of forced labor and child labor. • To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law. • To provide project workers with accessible means to raise workplace concerns.	• New construction and refurbishment of the project components require the services of contractual workers, most likely belonging to lower economic strata and vulnerable populations. There is a potential risk of workers not being provided appropriate safety/health measures at their workplace. • There exists a potential risk of women and children being exploited by contractors, making them vulnerable to violence and abuse.
ESS 4 • Promote Community Health and Safety • Avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials. • Ensure that safeguarding personnel and property are carried out to avoid or minimize risks to the project-affected communities.	• Potential direct exposure to the community, and students due to the increased construction-related traffic and equipment, especially on campus traversing settlement areas with limited carriageway/roadway width, dust levels, noise, and emission levels in construction sites. • Health and safety risks to students and workers due to the expansion of labs and other infrastructure development/renovation works. • GBV/SEA of students and workers at university/ institution, from labor employed in the civil works sites and risks of transmission of diseases.
ESS 5 • To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives. • To avoid forced eviction.	• Construction/renovation may restrict access to and from certain areas, which may adversely affect the learning environment.

ESS	Potential Risks
• To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement	
ESS7 • To ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities. • To avoid adverse impacts of projects on Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts. • To promote sustainable development benefits and opportunities for Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities in a manner that is accessible, culturally appropriate and inclusive. • To improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with the Indigenous Peoples/Sub- Saharan African Historically Underserved Traditional Local Communities affected by a project throughout the project's life cycle. • To obtain the FPIC of affected Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities in the three circumstances described in this ESS. • To recognize, respect and preserve the culture, knowledge, and practices of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, and to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable to them.	• There is a potential risk of excluding students with disabilities such as visual and hearing, who may need additional assistance under the project activities. • The geographical conditions of some of the states/institutions and low connectivity, may shift the focus to states/institutions with better road access and transport connectivity.
ESS 10 • To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, project-affected parties. • To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance. • To promote and provide means for effective and inclusive engagement with project-affected parties	• There is a potential risk of excluding vulnerable populations such as women, SC/ST, individuals with special needs being excluded form project consultations. This is likely to exclude their perspectives and insights affecting the effectiveness of the MERITE interventions.

ESS	Potential Risks
throughout the project life cycle on issues that could potentially affect them. • To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format. • To provide project-affected parties with accessible and inclusive means to raise issues and grievances and allow Borrowers to respond to and manage such grievances.	

6. Chapter 6: Land Management Framework

6.1. Background

The first and second components of the project (Improving quality and equity in selected institutions and Improving research for better skills and innovation) entail financing multifunctional spaces, transformable classrooms, laboratories, establishment and renovation of research facilities, and augmentation of digital infrastructure for enhanced student learning and interaction. Though DHE and PIU are yet to make the selection of the different institutions and potential sites/locations of construction/renovation/expansion to be included in the MERITE project, it is assured by the project at the preparatory stage that the project will not take any private land through involuntary acquisition and will avoid any physical displacement of residents for activities under the project. However, in the case of 'chance finds,' and the likelihood of infrastructure construction/renovation involving the displacement of formal and informal private users/squatters, the project triggers ESS 5 on involuntary resettlement as a precautionary measure. As a result, this Resettlement Policy Framework (RPF) is prepared by the MERITE. Moreover, site-specific RAPs will be developed - if and as necessary - during the project implementation. The RPF and any RAP will ensure the proper calculation and recording of the involuntary displacement impacts, identification of the affected people, and mitigation of their loss and impacts. The purpose of the RPF and implementation of the RAPs is to ensure no adverse effect on the living conditions and livelihoods of the affected people because of the project.

6.2. Objective of RPF

The RPF provides policies and procedures to determine requirements of the World Bank's ESS 5 on Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement, to assess potential risks and impacts, to identify detailed steps to develop appropriate mitigation measures, including mitigation and compensation for the impact caused under the project. Specifically, the RPF covers the following:

- Avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs.
- Assist displaced persons in improving their former living standards, income earning capacity, and production levels, or at least in restoring them.
- Encourage community participation in planning and implementing resettlement.
- Assist affected people regardless of the legality of land tenure.

6.3. Principles of RPF

The project does not anticipate any land acquisition. All civil construction will be carried on the land, the university/institution already owns and possess. However, if the project finds squatters and other encroachers at some sites, they will require proper compensation and economic rehabilitation as per the Bank's ESF, particularly ESS 5. Consequently, the following principles will be followed for the MERITE during resettlement planning, implementation, and monitoring of RAPs preparation for components and sub-components:

- Affected households will be eligible for compensation and rehabilitation assistance, irrespective of tenure status, social or economic standing, and any such factors that discriminate against the resettlement objectives.
- No site clearing will be done in anticipation or before being considered for inclusion in the project site.

- Affected households will be fully consulted and allowed to participate in matters that will affect their lives during the design, implementation, and operation. Moreover, plans for the acquisition and use of assets will be carried out in consultation with the affected households, who will receive preliminary information on the compensation and other assistance available to them.
- There will be effective mechanisms for hearing and resolving grievances during the planning and implementation of the component subprojects.
- Temporarily affected land and structures will be restored to pre-project conditions following the requisition procedures.
- Special measures will be incorporated in the RAP to complement mitigation and enhancement activities to protect socially and economically vulnerable groups at high risk of impoverishment. Appropriate assistance will be provided to help them improve their socioeconomic status.
- Particular attention will be paid to the needs of vulnerable and disadvantaged groups (as those individuals or groups who, by their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or indigenous status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits) and ensure their participation in consultations.
- Appropriate reporting, monitoring, and evaluation mechanisms will be identified and set in place as part of the resettlement management system.
- Civil works contractors will not be issued a notice of possession for any given geographic location following the approved RAP until (a) compensation payment at replacement cost has been satisfactorily completed for that area; (b) agreed rehabilitation program by MERITE and the affected person is in place, and (c) the area is free from all encumbrances. The RAP implementation consultant will submit the report with the written consent of the affected individual

6.4. Key Steps in Implementing LMF

6.4.1. Recommended Measures for MERITE Project (Risk Management)

MERITE will ensure implementation of the followings for different interventions:

6.4.1.1 Project Design.

MERITE will try to avoid involuntary land acquisition, voluntary land donation, or restrictions on land use. For this purpose, MERITE will consider feasible alternative project designs to avoid or minimize land acquisition or restrictions on land use, especially where this would result in physical or economic displacement. The overall principle will be to balance the environmental, social, and financial costs and benefits while paying particular attention to impacts on the women, the poor, and the vulnerable.

6.4.1.2 Screening

The components and subcomponents with physical works/renovations require screening. The social screening will occur during the project preparation stage as soon as reasonably accurate site location(s) is (are) known. The social screening will provide a preliminary assessment of the project's potential impacts and would ascertain the nature and extent of resettlement impacts and kind of mitigation measures required as per the LMF. The purpose of screening is two-fold:

- To ensure that activities that are likely to cause significant negative environmental or social impacts are not supported
- To ensure that all supported activities are in accordance with the laws, regulations of the Government and with the safeguard policies of the World Bank

- To help determine the scope of further assessments and the timeframe required to obtain the regulatory clearances (if any). *If additional assessments and plans (such as RAP, ARAP, etc.) are deemed necessary, these plans will be prepared according to the guidelines provided in this RPF. The format for screening is attached as Annex-19.*

Responsibility for screening

The Environment and Social nodal officer of the participating institutions will be responsible for undertaking the preliminary screening process, in consultation with the SPIUs safeguards expert, and suggesting mitigation measures as suggested under the SMF. The format for screening is attached in Annex-19.

6.4.1.3 Compensation and Benefits for Affected Persons.

All lands (if identified in RAP) to be acquired, and requisitioned, affected structures, trees, business, community property, and crops under the MERITE project will be compensated as per replacement cost consistent with both government and ESS 5. When land acquisition or restrictions on land use (whether permanent or temporary) cannot be avoided, MERITE will offer affected person compensation at replacement cost and other assistance as may be necessary to help them improve or at least restore their standards of living or livelihoods to the pre-project level. Compensation standards for categories of land and fixed assets will be disclosed and applied consistently. In all cases, a clear basis for calculating compensation will be documented, and payment will be distributed following transparent procedures.

6.4.1.4 Community Engagement.

MERITE will engage with affected communities through the process of stakeholder engagement described in ESS 10 on Stakeholder Engagement and Information Disclosure. Decision-making processes related to resettlement and livelihood restoration will include options and alternatives from which affected persons may choose. Disclosure of relevant information and meaningful participation of affected communities and persons will occur during the consideration of alternative project designs and thereafter throughout the planning, implementation, monitoring, and evaluation of the compensation process, livelihood restoration activities, and relocation process.

6.4.1.5 Grievance Mechanism.

MERITE will ensure that a grievance mechanism for the project is in place, following ESS 10 as early as possible in project development to address specific concerns about compensation, relocation, or livelihood restoration measures raised by displaced persons (or others) in a timely fashion. However, separate SEP, LMF, and EAP are being prepared for the MERITE project, which will be the guiding principle to ensure the Grievance Mechanism for managing Gender-Based Violence (GBV) and labor following the ESS 2, ESS 7, and ESS 10. Where possible, such grievance mechanisms will utilize existing formal or informal grievance mechanisms suitable for project purposes, supplemented with project specific arrangements designed to resolve disputes impartially.

6.4.1.6 Planning and Implementation.

Where land acquisition or restrictions on land use are unavoidable, MERITE will, as part of the environmental and social assessment, conduct surveys to identify the persons who will be affected by the project, to establish an inventory of land and assets to be involved, to determine who will be eligible for compensation and assistance, and to discourage ineligible persons, such as opportunistic settlers, from claiming benefits. The social assessment will also address the claims of communities or groups who, for valid reasons, may not be present in the project area during the time of the survey, such as seasonal resource users. The PIU will establish a cut-off date for eligibility in conjunction with the survey. Information regarding the cut-off date will be well documented and will be disseminated throughout the project area at regular intervals in written and (as appropriate) non-written forms and

in relevant local languages. This will include posted warnings that persons settling in the project area after the cut-off date may be subject to removal.

6.4.2. Preparation of RAP/ARAP

The RAP will be based on the social impact assessment and meaningful consultation with the affected persons. It will include the results and findings of the surveys of affected persons and their entitlements to restore losses, institutional mechanisms, and schedules, budgets, assessment of feasible income restoration mechanisms, grievance mechanisms, and results monitoring mechanisms. RAPs will comply with the principles outlined in this agreed RPF. These will receive clearance from WB prior to awarding the contract. Disbursement of compensation payments and entitlements will be made before displacement.

RAP will include measures to ensure that the displaced persons are (i) informed about their options and entitlements regarding compensation, relocation, and rehabilitation; (ii) consulted on resettlement options and choices, and (iii) provided with resettlement alternatives. During the identification of the impacts of resettlement and resettlement planning and implementation, the PIU will pay adequate attention to gender concerns, including specific measures addressing the need for female-headed households, gender-inclusive consultation, information disclosure, and grievance mechanisms to ensure that both men and women receive adequate and appropriate compensation for their lost property and resettlement assistance if required, as well as help to restore and improve their incomes and living standards. The resettlement plan will specify the income and livelihoods restoration strategy, the institutional arrangements, the monitoring and reporting framework, the budget, and the time-bound implementation schedule. Elements of preparing a RAP are furnished in Annex-20.

An ARAP will be developed when a project intervention affects less than 200 people in terms of loss of assets, incomes, employment, or business, and no HHs will be physically relocated. The ARAP includes the following information:

1. Brief description of the interventions, location, and their impacts
2. Consultation with PAPs
3. Baseline information on PAPs
4. Category of PAPs by degree and type of impacts
5. Entitlement for compensation, allowances, and rehabilitation or restoration assistance by category of impacts in a compensation matrix
6. Information on relocation site, where applicable
7. Institutional responsibilities for implementation and monitoring
8. Grievance redress procedures
9. The estimated cost of resettlement and yearly budget
10. Time-bound plan for implementation

If there is only minor, temporary economic displacement affecting a small number of people, the ARAPs can be in the form of a specific section of the relevant ESMPs rather than free-standing documents.

6.4.3. Gender Impacts and Mitigation Measures

The overall project framework will adopt a gender-differentiated approach toward designing interventions that address gender issues and bring parity in associated benefits and participation. It will also aid in bridging the inequalities between men and women, particularly in socially backward regions. Establishing a gender lens at the outset can help understand the needs, constraints, and opportunities and give a platform to women to raise their concerns which in turn will ensure that project strategies are equitable for all beneficiaries.

MERITE's gender strategy will include consultations with various groups associated with ensuring women's rights, promoting gender equality, and ensuring safeguards for the safety and security of women. Once the interventions and exact locations of the projects are identified, focus-group discussions, stakeholder engagements (primary and secondary), and interviews will be held to assess generic and peculiar gender issues. The program strategies will include incorporating the analysis and findings from the consultations and developing measures to address them. The participation of women, especially vulnerable girls, will be emphasized to understand their challenges holistically.

Three primary tools can be used to identify with and navigate gender issues in the project cycle.

- **Gender Analysis:** At the initial level of screening projects, gender analysis should be an integral component while undertaking an assessment. Using a gender lens in the beginning, will aid in understanding the role of gender at various stages in the project cycle.
- **Project design:** The design should incorporate the gender analysis and based on the findings, develop gender-responsive strategies.
- **Policy Dialogue:** Consultations with stakeholders to understand gender issues, safeguards, and potential measures to ensure that women have equitable access to opportunities, justice, and participation in decision making.

6.4.4. Implementation Arrangements

Ministry of Education (MoE) will be the lead implementing agency of the project and will be responsible for implementing the project activities, fiduciary management, and safeguarding compliance for all the sub-components. The PIUs at the central and state level will be implementing the sub-component/activities relevant to their respective areas/institutions under the overall management of the lead agency.

The ESMF for the MERITE project includes a comprehensive assessment of the Borrower's capacity for E&S risk management as per the requirements of the Bank's ESF. The review informs the provision of E&S staff in the PIU, the capacity development program for the project on E&S, and the overall procedure of E&S risk management, including resettlement issues by the project management.

The PIU will have dedicated Social Development Specialists (SDSs) to ensure the implementation of RPF, RAP, and other social management responsibilities. During the project implementation, she/he will maintain liaison with the WB safeguards team and other stakeholders. The Social Specialists will also monitor construction activities to ensure that social mitigation measures and RAP are properly implemented.

6.4.5. Monitoring

6.4.5.1 Monitoring Requirement

MERITE will conduct regular monitoring and evaluation of the updating and implementation of the resettlement plan. Monitoring and evaluation are intended to help ensure that the resettlement action plan is prepared and implemented according to the resettlement policy framework. The Social Safeguards Specialists in the PIU/TSG will be responsible for effectively monitoring the RAP implementation, specifically accountable for implementing proposed income restoration measures and consultations with affected persons during rehabilitation activities assisting in grievance redress. He/she will prepare resettlement training programs and workshops for the staff of the PIU and contractors.

6.4.5.2 Monitoring Procedures

During project preparation and as part of the RAP, PIU will develop a monitoring and reporting framework for resettlement activities. Central to this framework is the surveys of PAPs and the

inventory of assets that constituted the basis for the agreed RAP. The PIU will be responsible for overseeing resettlement preparation and implementation progress through regular progress reports submitted through normal channels, monitoring key indicators of finance, inputs, and activities.

The following activities are the standard functions of monitoring:

- Verification of internal reports by field check:
  - Interview a random sample of PAPs in open-ended discussions to assess their knowledge and concerns regarding the resettlement process, entitlements and rehabilitation measures.
  - Participate as an observer in public consultations for PAPs at the site (Organizing these meetings is the responsibility of the implementing agency).
  - Observe the functioning of the resettlement operation at all levels to assess its effectiveness and compliance with the RAP.
  - Check the type of grievance issues and the functioning of grievance mechanisms by reviewing the processing of appeals at all levels and interviewing aggrieved PAPs.
  - Survey the standards of living of the PAPs (and that of an unaffected control group where feasible) before and after implementation of resettlement to assess whether the PAPs' living standards have improved or been maintained.
  - Advise project management unit regarding possible improvements in the implementation of the RAP.

PIU will establish procedures to monitor and evaluate the implementation of the plan and will take corrective action as necessary during implementation to achieve the objectives of the ESS 5. The extent of monitoring activities will be proportionate to the project's risks and impacts.

6.4.5.3 Reporting Requirements

PIU will prepare a monthly report to be submitted to the WB. These reports will summarize the following:

- Progress in implementing this RAP and subsequent other safeguard documents, etc.
- Findings of the monitoring programs, with emphasis on any breaches of the control standards, action levels or standards of general site management
- Summary of any complaints by external bodies and actions taken/ to be taken
- Relevant changes or possible changes in legislation, regulations, and international practices.

7. Chapter 7: Equity Action Plan & Gender Equality and Social Inclusion Plan

7.1. Introduction

The EAP/IPPF is prepared in line with the Government of India's NEP and adherence with the World Bank's Environmental and Social Standard (ESS) 7 on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. The Objective of the EAP is: "To ensure that all students and faculty in the project institutions have equal opportunity to avail the benefits of the Project with substantial improvement in the performance of students with special attention to the needy, women and ST and SC categories." All project-assisted institutions will be responsible for preparing and implementing the EAP as an integral part of project implementation for MERITE. The EAP promotes sustainable development benefits and opportunities for disadvantaged groups in a manner that is accessible and inclusive. The EAP identifies the key issues and problems affecting student's academic performance and overall development and recommends a set of actions to address the same.

For the purpose of the project, the following will be considered vulnerable/ disadvantaged groups:

a) Students, members of the teaching and non-teaching staff who belong to the SC/ST categories.
b) Students, faculties, and staff belonging to PwD groups.
c) Students, members of the teaching and non-teaching staff who are from rural areas.
d) Girl students, female members of the teaching and non-teaching staff.

7.2. Strategy

Every institution faces a different challenge in improving academic performance. In addition to the caliber of students in an institution, its facilities, management, quality and efficiency of the teaching faculty, and measures to address students' felt needs, including relating non-cognitive skills and behavioral issues, have a bearing on student performance. The Project institutions are to make Equity Action Plans (EAP/IIPF) to improve learning outcomes for students and the employability of graduates with particular attention to the needy ones, including those from the SC and ST categories. The project aims to ensure that all participating institutions improve the transition rate (access and equity) (a key project performance indicator). Institutional targets are set for all students, with special attention to socially and economically underprivileged groups, including SC, ST, OBC, and Women students. Achievement must be maintained during subsequent years so that every institution achieves high graduation rates and transitions to the job markets. All Institutions should include Institutional EAP in their Institutional Development Proposals. The EAP should be a part of each Institution's MoU with the concerned project authorities.

7.3. Assessment of key social issues faced by students, faculties and the Institute/ATU

7.3.1. Students

Issues faced by the students in engineering institutions:

Low enrolment of Disadvantaged Groups: One of the key challenges in the country is significant gender and class dominance in technical enrolment despite the government's efforts to narrow down the gaps in student enrollment in higher education. The overall enrolment of students in engineering

education is 12%; participation of SEDGs is a mere 1.8%. Due to the low involvement of SEDGs and female students, the nation loses many talents from this group. It also results in less participation of such students in the job market and other developmental activities. The low enrolment arises from multiple reasons, including the lower propensity to complete secondary education; absence of educational institutes in their areas (particularly in rural settings); poverty, institutional inequity, lack of awareness about the multiple scholarships; the scarcity of SC\ST administrative units in the schools to guide regarding relevant schemes/financial aid; weak language skills in English, which is the medium of instruction or even in the primary vernacular language; and lack of opportunity to get tuitions or coaching, affordability, etc..

Gender disparity: Another key challenge is significant gender disparity in engineering enrolment despite a narrow gap in girls' enrollment in higher education. The overall enrolment of girls in STEM education is 43%; engineering programs are 27.5%. Year on year analysis reveals that while the number of girls opting for higher education has steadily increased, the number opting for engineering has not increased. The National Institute Ranking Framework (NIRF) data for 2012 to 2019 unveils that the average enrolment of girls was 9.13% in IITs and 18.17% in NITs, and 27.95% in other technical colleges, as against the national average of 27.5% (AISHE survey, 2019). The key reasons attributed to the underrepresentation are: gender stereotyping (considered to be a "He" STEM, with a firm male-dominated culture) and social norms; physical safety during the commute to college/university; lack of convenient services, infrastructure and resources in technical colleges; lack of female role models; sexual and other types of harassment in colleges/university; and lack of appropriate job placement support. Lower enrollment in STEM/technical education contributes to lower female labor force participation rates in STEM jobs (a mere 14 percent of women are in STEM jobs), especially in the lower number of women in better quality jobs.

Inability to adjust due to competitive situations: Findings relating to the constraints faced by disadvantaged students pursuing technical education reveal that the intensity of the constraints arising from the differing cultural conditions are the most common, which the students find difficult to adjust. Some students fail to secure employment because of overall low performance or inadequate skills after the course. Some of the reasons for these weaknesses are: low entry-level marks (i.e., inadequate preparedness for the rigorous engineering curriculum), irregular attendance in classes, low self-confidence, and weak language skills in English, which also affect interaction with others and class performance. It is observed that more vulnerable students do not communicate their difficulties and do not seek help due to factors including low self-esteem or even self-inflicted stigma. In addition, students may not do well because of several institutional factors, including vacancies in faculty and technical staff positions, deficiencies in faculty teaching skills, lack of digital infrastructure and literature on cutting edge issues, poor academic support, inadequate student support services, lack of effective monitoring of student performance, or regular feedback to students, inadequate hostel facilities, poor quality placement offices, etc.

Absence of social and gender friendly infrastructure: In other cases, a large number of dropouts is a result of a lack of or the absence of gender-friendly and social infrastructure, i.e., physical infrastructure, including water systems and toilets on the college campus not responsive to the current context, accessible and barrier-free campuses with different types of aids, equipment, and assistive technology for people with disabilities, etc. Other issues such as reliable grievance redress mechanics, inaccessible menstrual products, lack of awareness about gender equality, and lack of healthy conversations on matters related to students' physical, emotional, and mental well-being affect the dropout and transition rate.

7.3.2. Faculties

Issues faced by faculties in engineering institutions:

Insufficient/lack of Faculty: Faculty is one crucial determinant of the quality of teaching and learning; however, there is a persistent problem of faculty shortages resulting in overall lower quality of provision. Faculty vacancies range from 30 to 50 percent in state universities and can be as high as 40 percent even in the leading institutes of technology in the country. These high vacancies are partly related to the low supply of doctoral degrees and partly a result of cumbersome recruitment and faculty management approach. This has led to underqualified candidates serving as Faculty with severe implications for the quality of education delivered[11] and institutes' medium-term planning and development ability.

Inadequate Domain Knowledge: The need for having robust and up-to-date domain knowledge is well understood in the engineering sector, given the rapid development of technologies, new areas and even concepts. Pedagogical practices are ineffective, and only a few faculties participate in such programs or are not given enough opportunities by the institute to participate in upgrading their domain knowledge. Faculty in engineering institutions have very few research publications, and the overall research productivity of faculty members in engineering education is relatively low. Further, the experience of the TEQIP series reveals that faculties also lack pedagogy skills, especially in addressing the needs of weak/vulnerable students, sensitivity to gender equality and social inclusion issues in educational institutions, which in turn affects student performance.

7.3.3. Institution

Issues at engineering institute affecting the faculties and students:

Lack of digital infrastructure: The experience of COVID-19 has shown institutions' lack of experience with modern teaching and learning technologies, limited digital skills, and the inability of the economically weak/disadvantaged students to access the online education (absence of digital infrastructure such as access to high-speed internet, Laptops/tablets, LMS, lack of provision of credits from MOOCs, etc.), which significantly impacted their learning. A large number of institutions lack awareness of cutting-edge technologies, which is supplemented by low motivation among faculty to adopt new instructional pedagogies.

Outdated Placement cells: Institutions face multiple issues regarding placements: *first* - fewer companies/industries visit Tier 2 and Tier 3 institutions to recruit graduates, *second* - obsolete curricula that have poor takers in the market; *third* - disconnect between theoretical knowledge and practical application, which most industries/companies find unproductive. Further, most of the placement officers are clueless about the current market trends and face difficulty in networking with the industry, organizing events and lectures with industry experts, organizing industry visits for students, locating internship and job opportunities, organizing placement drives on campus and providing training and assistance in CV writing, interviewing skills, etc.

Institutional structures: Many engineering students suffer from frustration, stress, anxiety, and depression due to several college factors such as homesickness, peer and family pressure to perform well in exams, etc., which erodes the well-being of students, characterized by low self-esteem, loss of interest leading to the feeling of hopelessness.

[11] Loyalka et al. (2016) find that the proportion of faculty with Ph.D. degrees is significantly related to the "value-added" of engineering programs.

Peer-to-peer mentorship and tutoring worked well in some collages during TEQIP-II & III since students feel comfortable with other students. Faculty mentors played an integral role in observing and monitoring student progress and served as guides throughout students' higher education experience. MERITE will take proactive steps to establish/strengthen academic advisement by faculty and provide students with counseling and peer support services. The project will also finance institutional pilots to test new and innovative ways of improving student adjustment and success in college, including through behavioral interventions and nudges.

7.3.4. ATU (Affiliated Technical Universities)

Issues at engineering ATUs affecting the institutes, faculties and students:

Timing of Additional Courses and Repeat Exams: Timing of Additional Courses and Repeat Exams: A significant difference that was observed between institutions is the timing of the repeat exams that can be taken by students who fail in several subjects. Ideally, make-up exams should be held within a month or so of the actual exams; however, in reality, they are kept a semester or a year later. This has critical repercussions – the students have to clear exams for the ongoing semester and the backlogs; in the want of necessary support from the institutions, they resort to private coaching - expensive and sometimes unreliable. This results in cumulative failures, leading some students to take six, seven, or even more years to complete the four-year engineering course.

Disconnect between curricula and industry demand: The quality of technical education largely depends on the industrial relevant curriculum. The absence of a robust, flexible curriculum affects the employability of final year students in engineering institutions. The Annual Employability Survey 2019 report by Aspiring Minds reveals that 80% of Indian engineers are not fit for any job in the knowledge economy, and only 2.5% of them possess tech skills in Artificial Intelligence (AI) that industry requires. The survey underlines the sorry state of the theory-based curriculum and lack of industry exposure.

7.4. Summary of key recommendations

Key recommended actions in the EAP include:

i) Improving the learning efficiency, English language skills, and non-cognitive skills of the students, especially those from socially and economically vulnerable groups including SC/ST, PwD, and women.
ii) Improving the transition rate of SEDGs students by providing the necessary and timely remedial classes, diagnostic tests, soft skills training, exit exam trainings, career counseling, etc.
iii) Making institutes socially and gender friendly to promote the enrolment of students from disadvantaged groups especially women and PwD students.
iv) Awareness programs about various scholarships and other financial aid by government available for students from SEDG background.
v) Provision of digital infrastructure at institute for accessible teaching-learning/ exchange of knowledge.
vi) Developing peer learning groups of students for joint study and joint projects (socially and gender inclusive groups).
vii) Organizing camps at the school in the rural areas to share information and knowledge about engineering education.
viii) Supporting faculty to improve their knowledge levels, pedagogical skills, and sensitivity to gender equality and social inclusion issues in educational institutions.

ix) Promoting mentorship amongst students and teachers (to aid needy students and younger faculty members).

x) Developing/strengthening robust placement, networking with the industry, organizing placement drives on campus and providing training and assistance in CV writing, interviewing skills for smooth transition of students from college to labor market.

1) Grievance redress mechanism for timely resolution of the complaints lodged by students, faculties, staff, vendors, and other stakeholders.

7.5. Implementation Arrangements for EAP

Overall responsibility will lie with the Department of Higher Education (DHE) of the MoE. The MoE will delegate day-to-day implementation to a sufficiently staffed Project Implementation Unit (PIU), which will undertake all implementation-related activities in accordance with the Project Implementation Plan (PIP), prepared by the MoE and agreed with the World Bank. The Project's dedicated consultants would be responsible for implementing and supervising the EAP at central level. It would include a Senior Social Specialist and a Social Officer to ensure compliance with applicable social requirements.

The MoE will enter into MoUs with each participating state. At the state level, State Departments of Technical Education will oversee and facilitate implementation in their institutions and supported by state-level project implementation units, to be operated by and accountable to the national-level PIU. SPIUs will work closely with the State Department of Technical Education and provide regular updates to the Principal Secretary/Secretary Technical Education in the state. At SPIU level, a dedicated Social Specialist will implement and monitor the overall activities of the EAP.

At the institutional level, each participating institute will enter into an MoU with MoE or the respective state (in accordance with the nature of the institution, i.e., central versus state-level). The Board of Governors (or equivalent) will be the body with overall accountability, while the principal and senior management will be responsible for institutional project design and day-to-day implementation at the institutional level. They will be supported by an Implementation Development Unit which will include a senior faculty (preferably professor) designated as EAP coordinator to implement and monitor the EAP activities on daily basis.

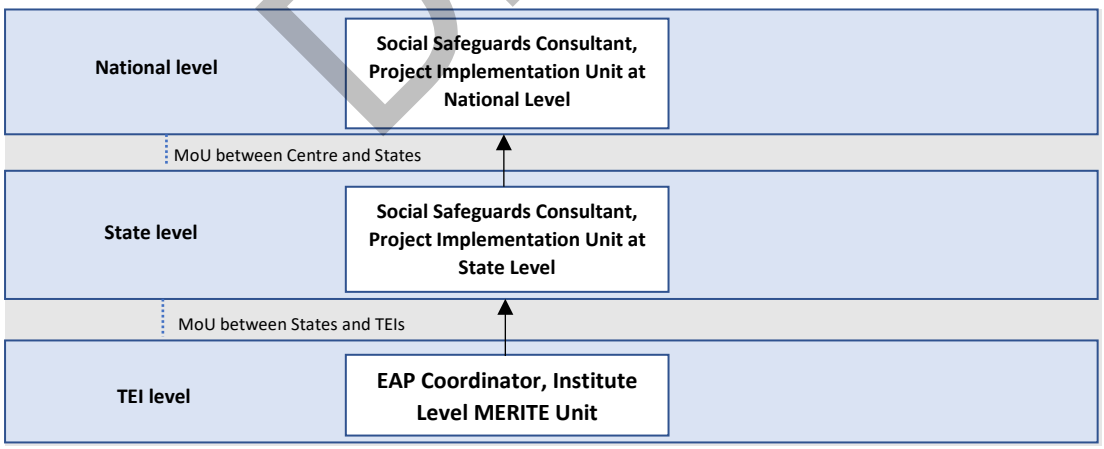

Figure 7.1: Implementation Arrangement for EAP

Reporting

The TSG-MERITE (Social Safeguards Specialists) will review and assess the performance of the institutions based on their submission of yearly EAPs (Academic Year) and the outcomes reported in the MIS system. The EAPs submitted annually will also include the estimated budget required for each activity. Each institute will also define the targets for the activities conducted that year under EAP.

Consultation with students will also be completed by the institute before finalizing the EAP plan. After getting due approval from the SPIU and TSG-MERITE, the institute will publish the EAP on its website and make all the stakeholders aware of it. During the Project period, the TSG-MERITE (Social Safeguards Specialists) will prepare quarterly reports on EAP performance of the institutions based on the information received from SPIUs. The report will include an update on the number of activities conducted, participation of students and faculties segregated under SC/ST, PwD and female categories, the outcome achieved, feedback of the students, the challenges faced by the institutions while implementing, budget utilized, etc. as per the pre-defined format. Further, a biennial report will include all of the above, plus trends analysis on the enrolment patterns (disaggregated by gender and category), internships and placements record (if applicable), and the due-diligence process followed during the civil works.

Capacity Building

The PIU at central level will conduct various seminars/ workshops to empower state units and institutes for the implementation of EAP activities during the project period. These seminars/ workshops will be organized on regular basis or as per the demand of any state or institute. Initially in the project implementation, the workshops on developing the EAP and understanding the requirement of the project as per the ESS 7 standard of the WB will be conducted by the PIU at central level for all state units and participating institutions. The state units may further organize the required EAP workshops as per the institute needs during the project period along with other topics such as gender sensitization, etc. The institutions will organize different seminars/ workshops on EAP topics such as Menstrual health talks, etc. under the project for their students and teachers.

7.6. Monitoring & Evaluation

The national level PIU will be responsible for the overall Monitoring and Evaluation (M&E) function of the project. The TEQIP series relied on a strong web-based MIS for M&E, which will be taken forward in MERITE. The project management component will support a similar web-based system that builds on existing MISs and allows for reporting on project indicators as well as those that are useful for the institute's internal decision-making process and accreditation requirements. This component will also support strengthening capacity for project management, results monitoring, data collection and reporting. The data and reports generated through the MIS will be used for annual and trimester progress reporting of the projects. The PIP will include a detailed monitoring plan for each indicator and outcome including the Performance Based Conditions (PBCs). Associated with each of these outcome indicators will be agreed baseline figures for 2023/24, target values for each year of project implementation, and a clear description of data collection and reports required to support the M&E of the project. For instance, the MIS system will collect the data on the students' performance with particular attention to the vulnerable categories. In addition, the project will work with the AICTE, NBA, ATUs, and Institutions to harmonize their reporting requirements to further simplify the reporting process for institutions. This will enable the MIS system to provide policymakers at national, state, and institutional levels with a summary analysis of the collected data through an interactive, web-based application capable of generating reports for all MERITE indicators and providing the unit level data required for the computation of each indicator. The system will incorporate a series of validity checks to avoid spurious data entry. Training provided to TSG-MERITE staff at the national, state, and institutional levels will strengthen its capacity.

The table below summarizes the list of proposed activities during MERITE implementation.

The table below summarizes the EAP/IPPF Actions for the students and faculty.

Table 7.1: Equity Action Plan for MERITE project

S.No.	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
Academic measures: Students					
1.	Induction Program	At least three-week induction program for freshers as mandated by AICTE to get acquaint with the institute and its facilities	Institution; facilitated by the EAP Coordinator	At the beginning of 1st Year (Freshers)	Students participating disaggregated by caste and gender and special needs (PWD)
2.	To identify academic weaknesses in students belonging to the vulnerable groups and initiate remedial measures	Institutions to administer diagnostic tests at the beginning of each semester to identify the areas to be remediated; design and offer remedial classes/bridge courses ((in Indian languages, need based).	Institution; facilitated by the EAP coordinator	At the beginning of each semester	Percentage of students passing with a minimum of 60% of marks without a backlog
3.	To enhance communicative skills, presentation, and soft skills to boost the confidence level of students	Provision of literacy clubs to enhance English speaking/ writing skills, provide ample opportunities for students to use language in appropriate situations, and set up English language laboratories to offer training in practicing language structures	Institution; facilitated by the EAP coordinator	At least once a week in each semester	Improved presentation skills Improved transition rates Improved employability ratio
4.	Peer- Learning Groups	Develop/strengthen peer learning groups of students for joint study and joint projects (socially and gender inclusive groups); group can comprise academically and linguistically weak and strong students; group size can be 6-8	Institution; facilitated by the EAP coordinator	continuous	Improved class participation; better scores/credits improved transition rate

S.No.	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
5.	Training to improve placements; exit exams such as GATE; career counseling, provision of digital learning including MOOCs certification	Organize sessions/classes for students (after class) to hone their technical and soft skills and preparing them for interviews and higher studies. Promote students to take MOOC courses for better understanding.	Institution; facilitated by the EAP coordinator and Placement Cell Coordinator	Two or three times a week for 3rd year and 4th year students	Improvement in employability rate, higher studies rate, increased transition rate, etc.
6.	Counselling services for mental health	Prioritizing students' mental health by providing counseling via a psychiatrist or therapist to address issues of stress/anxiety (homesickness, exam stress, abuse, violence, etc.)	Institution; facilitated by the EAP coordinator	Continuous	Improved participation (class and other activities); Percentage improvement in the transition rate
Academic Measures: Faculties					
7.	Give under-qualified teachers priority in opportunities to upgrade their domain knowledge	Identify needs and indicate in their Faculty Development Plan how they would build equity to upgrade faculty qualifications and skills	Institution; facilitated by the EAP coordinator	Yearly	Increase in the percentage of teachers enrolled in M. Tech. and Ph.Ds. Number of faculty participated in research/ conference Number of papers/research documents published in journals/ news articles
8.	Training in pedagogical skills, classroom management skills, emotional quotient, digital pedagogy, particularly to improve the performance of weak students	i) Intensive teacher training programs [(based on Training Needs Analysis (TNA)] to appraise faculty on various techniques and strategies for teaching students with different learning styles ii) Short-term intensive training in emotional quotient—this will enable teachers to empathize with	NPIU, SPIU and Institution	TNA to be done before the preparation of Institutional Development Plans; reporting every six months and	Percent of planned training completed as reported/ aggregated six monthly Feedback of students, faculty through the satisfaction survey Improvement in students' participation in class Improvement in the transition rate

S.No.	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
		students who require emotional support		remedial actions on a continuous basis	
		All institutions to prepare Faculty Development Plan for the Project period (using identified providers for Pedagogy or National Training Calendar for subject training), giving priority to the teachers with the most significant gaps in knowledge and skills as diagnosed by the TNA			
		All teachers are to be covered by training in pedagogy, including the teaching of weak students and understanding the needs of students with disabilities and helping them achieve their learning goals; an understanding of equity and equality, students' rights and entitlements, i.e., nondiscriminatory practices			
		Domain training is to be done on the basis of need/ link up with industry to keep abreast of cutting-edge technology			
		Training on the use of digital technology for improved classroom participation and information dissemination			
		Satisfaction Surveys to assess training achievements			

S.No.	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
9.	Faculty Appraisal mechanism	Introduce the 360-degree appraisal system - an appraisal by the HoD and students. The assessment includes student feedback on faculty's content delivery, behavior in the class, and others.	Institution; facilitated by the EAP coordinator	End of each semester	The number of faculty receiving a minimum of "satisfactory" rating Percentage of faculty with improved rating in the subsequent assessment.
Non- Academic measures: Institute level					
10.	Awareness programs about various scholarships and other financial aid by government	Institutions to organize awareness programs for students, faculties, staff, parents, etc. on various scholarship/financial assistance	Institution; facilitated by the EAP coordinator	Continuous	The number of students receiving scholarships on time Vs. students applied for scholarships, disaggregated by caste and gender
11.	Hold knowledge-sharing workshops with other institutions yearly to improve knowledge exchange	The SPIUs and institutions to organize workshops with a thematic focus (progressive, state-of-the-art)	SPIU and Institution	Yearly	The number of workshops organized Number of institutions (including tier-1) that participated Number of students/faculty that made presentations/organized exhibitions on the cutting-edge technological tools/themes
12.	Digital infrastructure at institute for accessible teaching-learning/ exchange of knowledge	Assessment of digital capacity and development of digitalization strategy. Institutes to ensure substantial internet facilities and unlimited data for students (campus and hostels) and faculties, permissible digital infrastructure for faculties and students for teaching and learning.	NPIU, SPIU and Institution	At the time of IDP and actions implemented as proposed	Digital infrastructure at institute for accessible teaching-learning/ exchange of knowledge

S.No.	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
13.	Institutionalize Grievance Redress Mechanism (GRM)	Ensure wide publication of CTGRAMS at the institution, including channels for registering a complaint and timeframe for resolution; Appoint GRO as a single point of contact for resolving grievances	Project Institutions, SPIU and NPIU	Continuous	GRO Number of complaints received and time taken to address grievances, including escalated to the next tier. Number of unsolved cases Trend analysis on a year-by-year basis on the number and nature of complaints received and resolved within the defined timeframe
14.	Ensure that institutional mechanisms to protect and address the needs and concerns of women students are established; promoting the participation of female faculties in such decision-making committees	Minimum 30% representation of women in sexual harassment committees, gender committees, and similar committees.	Institution; facilitated by the EAP coordinator	Continuous/ As required	Number of females in the institutional committees, including at the leadership role (chair, co-chair etc.)
15.	Organizing gender sensitization programs	Conducting workshops/ seminars on menstrual health, reproductive health, gender-based violence etc., and ensuring participation of all faculty and students	Institution; facilitated by the EAP coordinator	Continuous	Reduction in the cases of harassment and abuse reported by female staff and faculty
16.	Develop or strengthen policies for combating violence and abuse on caste, culture, disability, gender, background, and linguistic differences.	Institute will develop guidelines and widely publicize the policies to combat violence and abuse based on caste, gender, background etc., including sexual harassment policies.	NPIU, SPIU and institutions.	Continuous	Policies to safeguard students – sexual harassment and anti-ragging policy Number of students aware of such policies and provisions

S.No.	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
17.	Special efforts for training/ internship/ placement of vulnerable students, including female Develop or strengthen placement cell	Greater networking with the industry, organizing placement drives on campus and providing training and assistance in CV writing, mock interviews, building alumni database	Institution; facilitated by the EAP coordinator	Continuous	Feedback from the students Improvement in employability rate Employer satisfaction survey findings Alumni support for internships/placements
18.	Appointing Student Mentors and Faculty Advisers for Students	Assign senior students as mentors for 6-8 junior students, Appoint Faculty Advisers for 10-15 student mentors, Faculty Advisors to guide the students and monitor their progress, Student and Faculty Mentor should be given some professional training in mentoring and counseling to play this role	Institution; facilitated by the EAP coordinator	Continuous	Feedback from the students Improvement in class performance Improvement in the transition rate
19.	Develop and regularly update, MIS	Collect/analyze data disaggregated by gender (M/F) and caste and disability (SC/ST/OBC/PWD) to track their progress	NPIU, SPIU and institutions.	At the beginning of each session and updated regularly	MIS established and updated and disaggregated data by gender, caste, disability, geography available
20.	Outreach Programs	Organize camps at the school in the rural areas to share information and knowledge about engineering education; discussions may be held on entrance exams requirement, scholarships available, and prospects to encourage students from the rural areas	EAP Coordinator	Half-yearly	Improvement in the enrolment of students from rural and vulnerable population

8. Chapter 8: Institutional Framework

8.1. Key Institutions/Persons Involved in the Implementation of the MERITE ESMF

8.1.1. National/Government

The Department of Higher Education (DHE), Ministry of Education (MoE) will be the lead implementing agency of the project. The MoE will constitute a National Steering Committee assisted by the National Project Directorate headed by the National Project Director (Additional Secretary in charge of higher/technical education). The MoE will delegate day-to-day implementation to a sufficiently staffed Project Implementation Unit (PIU), which will undertake all implementation-related activities following the Project Implementation Plan (PIP), prepared by the MoE and agreed with the World Bank. The success of the proposed environmental and social assessment depends on the clear identification and allocation of responsibilities and functions, as well as the capability of the project management team, i.e., Implementing Agencies (SPIUs and Institutions) in collaboration with DHE, to take proper actions throughout the various stages of the proposed project activities.

8.1.2. Project Implementation Unit (PIU)

The DHE has set up a Project Implementation Unit (PIU) at the center to oversee and supervise the day-to-day functioning of the project activities, including the management of the ESMF. The PIU has individual expert consultants to carry out the compliance monitoring of the ESMP. Considering the borrower's capacity, the PIU will appoint a Senior Social Development Specialist in addition to the Social Specialist and Environmental Specialist to manage the Labor, Community Health, GBV Management/Gender Specialist, and Stakeholder Engagement and Communications aspects of the MERITE project. The consultants will supervise all environmental and social safeguard measures outlined in the ESMF/ESMP. They are also responsible for verifying that all safeguards are reflected correctly and clearly in the bidding documents and the works contracts.

8.1.3. States

The MoE will enter into MoUs with each participating state. State Departments of Technical Education will oversee and facilitate implementation in their institutions at the state level. States will set up a State Steering Committee headed by the Principal Secretary/ Secretary for Technical Education in the state and supported by state-level project implementation units to be operated by and accountable to the national-level PIU. SPIUs will work closely with the State Department of Technical Education and SSC and provide regular updates to the state's Principal Secretary/Secretary of Technical Education.

8.1.4. Institution

At the institutional level, each participating institute will enter into an MoU with MoE or the respective state (following the nature of the institution, i.e., central versus state-level). The Board of Governors (or equivalent) will be the body with overall accountability. At the same time, the principal and senior management will be responsible for institutional project design and day-to-day implementation at the institutional level. They will be supported by an Implementation Development Unit.

8.1.5. Contractors

There are many well-reputed constructions, service, and supply firms in India; PIU/MERITE and SPIUs may appoint local firms to implement the project activities. During the project's implementation, the contractors' primary responsibilities include new construction, rehabilitation, and maintenance of existing infrastructures following the bidding documents, including compliance with the ESMP

prepared during ESIA assessments. The contractors will be responsible for implementing community and occupational health and safety measures, including GBV prevention actions.

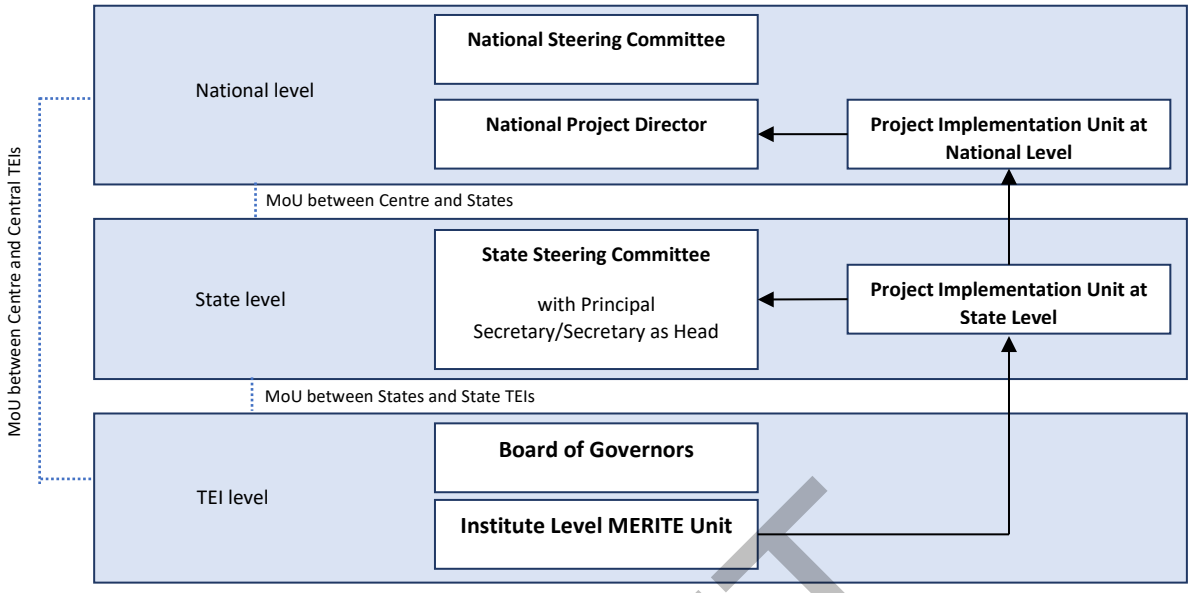

Figure 8.1: Implementation Arrangements at National, State and TEI Levels

8.2. Institutional Arrangements for ESMF implementation in MERITE

The following institutional arrangements have been suggested in this ESMF, recommended to elaborate during specific ESIA of MERITE. These arrangements will be revisited and modified as appropriate upon WB's agreement.

8.3. During Project Implementation

The MERITE implementation will be led by the Project Implementation Unit (PIU) established within DHE. The PIU will be headed by the assigned Project Director (PD) from DHE, supported by Deputy Project Director (DPDs), an Environmental Safeguards Specialist, and a Senior Social Development Specialist supported by a Social Officer. Further details of the institutional arrangement for the overall MERITE management should be available in the ESMP of the specific ESIA report for the project under the Institutional Arrangement of the IDPs.

The PIU safeguards team will oversee the project implementing agencies, consultancies, and other contractors (to be engaged in project activities implementation). They will also compile quarterly monitoring reports on ESMP compliance to be shared with the Project Director and the World Bank throughout the project implementation period. The safeguards team will also provide training to the DHE, states, partnering institutions, and other field personnel responsible for monitoring environmental and social compliance during the project's implementation and subsequent post-project period. The PIU will also have the overall responsibility of safeguards performance, including ESMP implementation, supervision of the contractors - environmental and social management requirements, measures on their execution of construction-related, infrastructural development, and other activities that have significant adverse environmental and social impacts identified in the ESMF/ESIA. The team will ensure adherence to the monitoring parameters, including quality requirements and all ESMP measures.

Table 8.1: Roles and Responsibilities of ESMF Implementation

Organization	Responsibilities
PIU at DHE	• Ensure that all project activities are well-managed and coordinated • Procurement of works and goods • Recruitment and supervision of contractors and consultants
TSG/Safeguards Team, PIU	• Work with the state-level implementing agencies to implement and monitor the project components. • Review the screening process of proposed sub-projects to ensure that there is no adverse impact on the community and involvement of women and/or need particular focus on tribal involvement. • Ensuring inclusion of ESMP in bidding documents • Providing training on ESMP principles and requirements to contractors, DHE and project institutions, field staff, and others as needed to ensure effective implementation of ESMP • Supervising partners/contractors for the implementation of ESMP • Ensure that all the project activities are carried out in an environmentally sound and socially acceptable manner • Closely coordinate with other concerned agencies, local governments, and communities to support the implementation of ESMP • In case of noncompliance, ensure that the contractor eliminates the noncompliance and inform the WB about the noncompliance. • Preparation of progress reports on the implementation of ESMP/ESMF • Ensure effective implementation of ESMP components not directly tasked to the contractor, including components dealing with indirect, induced, and cumulative effects, as well as operations and maintenance (post-project) stage plans and measures • Supervise civil works, ensuring compliance with all design parameters, including quality requirements, and supervise all other project activities that have a significant environmental impact • Commissioning and oversight/review of consultant reports for ESIAs/ESMPs/safeguards • Ensure successful implementation of the project level GRM, timely closure of the complaints • Coordinate and liaise with WB supervision missions regarding environmental and social safeguard aspects of project implementation
E&S Safeguards Nodal officer, Institutions	• Ensure execution of the project activities, per the agreed environment and social/equity plans

Organization	Responsibilities
	• Responsible for preparing safeguards documents with assistance of the SPIU and NPIU; Implement Labor Management Procedures. • Provide support in project management and operation at day-to-day basis • Prepare contract documents and other necessary reports • Supervise contractors engaged in the project implementation to perform their works • Manage the grievance mechanism at the institute level, communicate grievances to CPA regularly through ESMF monitoring reports • Prepare quarterly monitoring reports.
Contractor/Others	• Responsible for implementation of mitigation and monitoring measures proposed in the ESMP • Each contractor will depute a site engineer to ensure compliance with the OHS/ safety/GBV prevention measures.

8.4. Post Project Monitoring Period

During the post-project monitoring period, the environmental and social management of the project will lie on PIU/DHE, which will have adequate numbers of officers and dedicated environmental and social experts (in-house). During the life of the project loan, the PIU will remain ultimately responsible for all environmental and social monitoring aspects of the project but to gradually transition this role to the environmental and social nodal officers at each participating states/institution. This will include capacity-building activities and on-the-job involvement of team members in the post-project monitoring stage of ESMP implementation.

9. Chapter 9: Stakeholder Engagement and Disclosure

9.1. Requirements of ESS 10: Stakeholder Engagement and Information Disclosure of MERITE

Background: This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve projects' environmental and social sustainability, enhance project acceptance, and make a significant contribution to successful project design and implementation. The client will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. In consultation with the Bank, the Borrower has developed a Stakeholder Engagement Plan (SEP), which will be the main guiding document for the PIU. The following sections are summarizing the ESMF requirements for stakeholder's consultations and disclosures specifically for preparing ESMP.

9.2. Stakeholder Consultations and Disclosure (ESS 10)

Project preparation has done stakeholder mapping. The client has prepared Stakeholder Engagement Plan (SEP) based on the virtual consultations with different stakeholders, meetings, and focus group discussions (FGDs) during the project preparation; however, considering that the project locations were not final when the document was prepared, the consultations and mapping may not be enough. Extensive field visits are required at the ESIA/subproject preparation stage to overcome this shortcoming, as well as discussions with the relevant stakeholders throughout the project sites to discuss components, sub-components, activities, and potential positive and negative impacts, and measures taken to mitigate those impacts. It is also required to record the views of each of the respondents of the consultations, irrespective of gender, profession, religion, and age group. Consultation meetings are necessary to identify issues and problems to enable MERITE to include corrective measures and identify lessons and opportunities to enhance project implementation mechanisms.

9.3. Objective of the Consultations

The GoI, as well as international donors (e.g., the World Bank), place great importance on involving primary and secondary stakeholders in determining the environmental and social impacts associated with project implementation. To gather local knowledge for baseline conditions, understand community perceptions regarding impact significance, and propose meaningful mitigation measures, the participation of stakeholders is an integral part of the environmental assessment process. During the preparation of the present ESMF, several initial consultations with the key stakeholders have been carried out to obtain their views on project interventions. However, additional consultations are required to understand and better prepare the mitigation measures for the Category 'Moderate Risk' project.

The consultation process has been conceived, planned, and initiated with the following key objectives:

- To provide key program information and create awareness among various stakeholders about program intervention
- To discuss the key issues and concerns faced in the technical education system in India

- To have interaction for primary and secondary data collection with program beneficiaries and other stakeholders
- To identify environmental and social issues associated with the technical education projects, particularly with the vulnerable groups
- To begin establishing communication and an evolving mechanism for the resolution of social and environmental problems at the local
- To involve program stakeholders inclusively
- To receive feedback from stakeholders on mitigation and enhancement measures to address the environmental and social impacts of the project.

9.4. Methodology and Tools for the Consultation

The consultation and participation process in preparing the ESMF was limited to selected stakeholders both at the project area and at the state and national level since specific sites have not been identified yet. Stakeholders' consultation and engagement at the individual institution level were not carried out during the preparation of the ESMF. However, this will be done at the site level once they are identified and more inclusive irrespective of gender, profession, religion, and age groups during preparing ESMP. Stakeholders are people, groups, or institutions that are likely to be impacted (either negatively or positively) by the proposed project interventions or those who can influence the project's outcome. A stakeholders mapping was conducted, and details on the stakeholders are available in Table 9.1. The primary stakeholders include students, teachers, employers, industry clusters, and indirectly affected communities/host institutions. The other interested stakeholders are NGOs, community-based organizations, community development projects, alumni, media, community leaders, civil society, and consultants in the project area.

The various tools identified in the SEP will be used for consultations, including virtual meetings/workshops, stakeholder consultation meetings, issue-specific talks, open meetings, and seminars at the National level. During ESMP preparation, consultation meetings and FGDs will be carried out in all sites, and regional level workshops will be organized at some selected states/institutions to ensure comprehensive coverage of the entire project area and provide them with a specific list of interventions.

Details of consultations during the preparation of ESMF, MERITE are illustrated in Table 9.2.

The project, for now, has identified and categorized the stakeholders as individuals and groups likely to be affected (direct beneficiaries) and other interested parties – presented in the table below:

Table 9.1: Stakeholder Mapping under MERITE project

Stakeholders	Direct/ Project-affected parties	Indirect/ Other interested parties
International		International institutions/students may find the project interesting and may like to collaborate
Centre	WB, MoE, TSG-MERITE, AICTE, UGC, NBA	Industries
Researchers, scientist and teachers	International Researcher, teachers may be interested with the research programs, faculty exchange programs and work as Experts for improving Pedagogy	

Stakeholders	Direct/ Project-affected parties	Indirect/ Other interested parties
Participating States	DST (Dept of Science and Technology), State-TSG	
Suppliers and vendor	Up gradation of laboratories, equipment's, construction works etc.	
ATUs	Students, Faculties, Staff of constituent institutions, Disadvantaged or Vulnerable group (SC/ST, PwD, Women population)	Students, Faculties, Staff of affiliated institutions
Institutions	Local students and researchers as the project will strengthen employability of the graduates, will be able to participate in research programs. Faculties, Staff of the institutions, Employers, Incubators, Disadvantaged or Vulnerable group (SC/ST, PwD, Women population)	Alumni, NGOs
Business community /entrepreneurs including different chamber of commerce and industries, corporate bodies and MNCs	Business specific research, internship of the students, job opportunity for the students, job fair, etc., and inputs for curricula development	
NGOs	Different women organizations in the project will be highly interested with the project as during the implementation and operational stage, there may be issues of GBV and employment of local women in the project	
IT vendors	The digital infrastructure demand - IT vendors need to be told to give additional support for connections to help stakeholder engagements, facilitate online classes and help with other networks/connectivity issues as project activities are anticipated to also focus on the online learning.	
Other	NGOs, school students and faculties	Parents of school students
Medical and Health Facilities		Nearby medical and health facilities need to be informed about project activities as individuals related to project activities may need medical help during the life cycle of the project. This is especially relevant due to the

Stakeholders	Direct/ Project-affected parties	Indirect/ Other interested parties
		COVID-19 pandemic, and owing to the civil works
Local community people and businessmen		Project may cause direct and indirect impact on them

Table 9.2: Stakeholder Consultations during Project Preparation

Participant	Month of Consultation	Mode of Consultation	Key Issues/ Concerns
AICTE	March 2022	In-Person	• Absence of robust student learning assessment • Need for competitive research grants for institutions • No provision for a graduate tracking system at institutes • Need for workshops on multidisciplinary, industry Ph.D., etc.
UGC	March 2022	In-Person	• Guidelines for multidisciplinary, phasing out affiliation system, etc. are yet to be finalized
NBA	March 2022	In-Person	• Institute requires capacity building on outcome-based education
Advisory Group 1	November 2021-January 2022	Hybrid	• Inaccessible high-quality materials and tools for students and faculties • Teaching-learning, especially for remedial classes, should be conducted in Indian languages • Absence of Mental health counseling for students. • Lack of robust digital infrastructure
Advisory Group 2		Online	• Absence of multidisciplinary courses for achieving the NEP 2020 goals • Absence of courses on Indian Traditional Knowledge • Absence of Community projects for students
Advisory Group 3		Hybrid	• Absence of experiential learning and internship in the curriculum • No proper networking among industry, research organization and community
Advisory Group 4		Hybrid	• Under-rated and low-quality outcomes in academic and research areas • Urgent need to establish a graded unified program-wise accreditation system with the minimum benchmarks for each of the Institute • Absence of quality assurance for online education
Advisory Group 5		Online	• Absence of incubation ecosystems at institutions for nurturing start-ups
Advisory Group 6		Online	• Absence of BoG as per the AICTE/ UGC norms • Absence of good governance practices
Advisory Group 7		Online	• Absence of high-quality infrastructure for women and PwD students • Low enrolment of disadvantaged groups in institutions • Less participation of female faculties in leadership positions

Participant	Month of Consultation	Mode of Consultation	Key Issues/ Concerns
State Secretaries/ Directors (DST)	October 2021, January 2022, March 2022	Hybrid	• Large numbers of faculty vacancies • Sustainability of project measures • Implementation of multidisciplinary education • Implementing Digitalization, blended learning • Revising the curricula as per the industry needs • Implementation of entrepreneurship and incubation centers • Equity and inclusion of tribal population • Internationalization as per the NEP 2020 • The activities of the project should be designed in such a way that they sustain even after the completion of the project • The project should also look to develop and strengthen the skills system and administrative agencies • The project should have ample opportunity for teachers training and capacity development • Provide increased teachers training specially in digital pedagogy
Industry Experts	March 2022	Online	• Weak linkages between technical institutions and industries • Non-applicability of research done by the institute in industries • Absence of industry exposure for faculties

9.5. Consultations and Communication Guideline (ESS10)

Consultations with the key stakeholders will need to be carried out throughout the program life. These will include consultations and liaisons with communities and other stakeholders during the project implementation and extensive consultations with the grass-root and institutional stakeholders during the project implementation and ESMP preparations. The framework for the future discussion is presented in Table XZ below

Table 9.3: Future Consultation Guideline

Target stakeholders	Topic(s) of engagement	Method(s) used	Responsibilities
PREPARATORY			
• Project Affected community • People potentially affected by project interventions • People residing in the project area	• All the safeguard documents will be disclosed (preferably in the local language) • Land management/ civil works process • Process of hiring labor; information	• Public meetings, separate FGD for women and vulnerable • Face-to-face meetings • Disclosure of written information: brochures, posters, flyers, website Information boards or desks in local language	• DHE, TSG/PIU, SPIUs, Institutions • Safeguard Team, TSG • World Bank (to occasionally participate)

Target stakeholders	Topic(s) of engagement	Method(s) used	Responsibilities
• Roadside residential and business squatters • Vulnerable households • Local government • Media • Transport workers • Local businessmen (where applicable)	on the Code of Conduct • Project scope and rationale • Safeguard principles • Grievance mechanism process • Future consultation	• Grievance procedures through consultation, information brochures / wall painting/ wall posters, Faculty/ peer groups, etc. The following modes to be adopted specifically for the vulnerable groups: • Robust engagement with students and faculty • The project would arrange separate consultation sessions for different target groups • Resources allocation towards local administration representatives and counselor/psychologist. • Engagement of local CBO's who work with vulnerable people at the community level to help disseminate information and organize consultations • Manageable and gendered FGD to be arranged so that women can speak freely • The project must have adequate means to reach the disabled ones in the college community. If need be, teams must visit the disabled ones in their habitat/ parents for acceptance and rapport building. • Notice board for employment recruitment • Training sessions • National workshop, to be followed by regional/ institutional level workshops	
Construction Phase			
• Project Affected People • People potentially	• Grievance mechanism • Health and safety impacts (OHS,	• Public meetings, open houses, trainings/workshops	• DHE, TSG/PIU, SPIUs, Institutions

Target stakeholders	Topic(s) of engagement	Method(s) used	Responsibilities
affected by civil works/ refurbishment • People residing in project area • Vulnerable households • Contractors • DST (Dept of Science and Technology) • Local NGOs and CBOs • Local Press • Local businessmen • Transport workers	community H&S, community concerns) • Employment opportunities • Project status	• Separate meetings as needed for women and vulnerable • Individual outreach to project households (as needed) • Disclosure of written information: brochures, posters, flyers, website Information boards in DST/SPIU local offices • Notice board(s) at construction sites/institutions • Grievance mechanism The following modes to be adopted specifically for the vulnerable groups: • Robust engagement with students and faculty. • The project would arrange separate consultation sessions for different target groups • Resources allocation towards local administration representatives and counselor/psychologist.	• Safeguard Team, TSG • Contractor • NGO • External Monitoring agency (as needed)

9.6. Communication and Consultation Strategy (ESS10)

As required for informed consultation, MERITE will provide communities and affected persons with all activity-related information, including potential adverse impacts, in a language familiar to and understandable to the target communities. To facilitate consultation, the implementing agency will,

- Prepare a timetable for dialogues during activity selection, design, and implementation processes, and consult them in a manner that they can express their views and preferences freely.
- In addition to the communities in general, consult community organizations, community leaders, and others with adequate gender and generational representation; civil society organizations like NGOs and groups knowledgeable of issues related to communities living within the project area.
- Consultation will include the activity objectives and scope; the likely key adverse impacts on (and benefits for) communities; communities' perception of the impacts and feedback; and a preliminary assessment of economic opportunities that the implementing agency could promote to mitigation of the adverse impacts.

- Consultation will concentrate on targeting and the adverse impacts perceived by the communities and the probable (and feasible) mitigation measures, as well as exploring additional development activities that could be promoted under the project.
- The implementing agency will keep the Minutes of these consultation meetings in the activity files and make them available for inspection by World Bank, respective government officials, and other interested groups and persons.
- If vulnerable communities are identified in the sub-project area, the appropriate social tool will be adopted using free, prior, informed consultation based on the baseline data. This will serve as the basis for sub-project implementation and monitoring.

9.7. Information Disclosure (ESS10)

As a standard practice, the Project safeguard documents, including RPF & RAP, EAP, etc., released for disclosure are accompanied by making available the registers of comments and suggestions from the public that the PIU/SPIU subsequently documents in a formal manner. PIU/SPIU will continue applying a similar approach to disclosure for any additional safeguard appraisal materials prepared as part of the project development. The CPA will continue to apply a similar approach to disclosure for any supplemental E&S appraisal materials prepared as part of the project development. This ESMF in English and Hindi will be made available for public review following the World Bank disclosure policy. The RPF/RAP (if applicable) will be released in the public domain simultaneously with the E&S documents and will be available for stakeholder review during the same period.
The disclosure materials will be distributed by making them available at venues and locations frequented by the community and places to which the public has unhindered access. Free printed copies of the safeguard documents in Hindi and English will be made accessible to the general public at the following locations:

- The Project office in Delhi (DHE) and States (SPIUs)
- All interested universities and institutions
- Other designated public sites to ensure wide dissemination of the materials (outside universities/institutions, as needed)
- Newspapers, posters, radio, television
- Brochures, leaflets, posters, nontechnical summary documents, and reports
- Official correspondence, meetings

Electronic copies of the safeguard documents will be placed on the project website. This will allow stakeholders to view the planned development information and initiate their involvement in the public consultation process. The website will be equipped with an online feedback feature that will enable readers to leave their comments concerning the disclosed materials. The mechanisms that will facilitate input from stakeholders will include press releases and announcements in the media and notifications of the aforementioned disclosed materials to local, regional, and national NGOs and other interested parties.

9.8. Grievance Mechanism (ESS10)

Grievance Mechanism (GM) is a valuable tool that allows affected people to voice concerns regarding the environmental and social, among other, impacts of any project's activities. MERITE would ensure that grievance redress procedures are in place and monitor those procedures to ensure that grievances are handled correctly. The MERITE office will establish a process to answer sub-component-related queries and address complaints, disputes, and grievances about any aspect of the

sub-component, including disagreements regarding the assessment and mitigation of environmental and social impacts. Details of the GRM and procedures to be followed during the MERITE implementation are discussed in the below.

9.8.1. Overview and Scope.

MERITE will follow the existing ICT-based three-tier Grievance Redressal Mechanisms – national, state, and institute, established under TEQIP-III. The system was well-advertised, elicited grievances from affected persons, and redressed all within the stipulated timelines. MERITE's GRM portal will enable the project stakeholders and beneficiaries to submit complaints/queries through in-person, written, and e-mails, phone calls, and text messages. All grievances received from affected parties will be registered in an online document and/or a logbook (ensuring restricted access) available at all three tiers, tracked, and assessed for progress on resolutions. At the final stage, each complainant shall be informed about the results of the investigations and the actions taken. As a complementary intervention, the project will develop a robust communication strategy designed to reach out to direct project beneficiaries and stakeholders regularly with information and project-related updates digitally. The project will also conduct annual students' and parents' satisfaction surveys (using stratified sampling) on a sample basis to directly inform the engagement mechanism during implementation. Further, the project will also establish a complimentary web page for the primary GRM to address on-campus violence, harassment/GBV, and bullying complaints. All the tiers will be adequately staffed, and regular training in handling complaints, including GBV-related, will be organized.

The Details of the CTGRAMS on filing the complaints are presented in Annex-7.

9.8.2. Communication & Awareness raising on GM.

The final processes and procedures for the GM will be translated into the national language and in select regional languages (i.e., Hindi) and disseminated at all project locations. These shall be made available (in a leaflet and poster format) to all project locations, i.e., SPIUs and participating institutions.

9.8.3. Institutional arrangement for GR

Each institute/ ATU will appoint a GRO (Grievance Redress Officer), preferably a senior-level faculty (Professor/ Associate Professor), with prior experience in similar activities or as a student counselor. The details of the GRO, the procedure to submit the grievance, and the expected timeline, will be published on the institute's website and posted at different campus locations for wide dissemination.

Table 9.4: Grievance Management Matrix

Grievance Level	Responsibility	Mode of Grievances provided	Time for consideration of grievance
1st Level: Institute Level	GRO	Online, Offline via phone, email, register.	15 days
1st Level: ATU Level	GRO	Online, Offline via phone, email, register.	15 days
2nd Level: State Implementation Unit	GRO (Dedicated Consultant)	Online, Offline via phone, email, post	15 days
3rd Level: TSG-MERITE	GRO (Dedicated Consultant)	Online, Offline via phone, email, post	15 days

9.8.4. GR Monitoring and Reporting

The functioning of the GRM will be monitored by the Senior Social Specialist in the central PIU and by the CPA. The status and function of the GRM will be electronically documented and shared by the Sr. Social Spl., PIU, through periodic reports and review meetings. Regular GRM Review Meetings will be held and chaired by the CPA; the Social Expert of the PIU will convene these meetings. The Specialist will also be responsible for presenting the status of all matters/ grievances received during the last quarter/month and the action taken to resolve them. The GRM mechanism will be notified to the public and stakeholders within the first six months of project effectiveness. The project website will post the status of the GRM status periodically the website of the project.

9.8.5. Grievance Redress for Labor and Vulnerable Groups

If an aggrieved person is not satisfied with the results of Grievance Redress by the project grievance redress mechanism, such a person can approach the Courts, under the laws of the Concerned State and India, and the verdicts of the Courts will be final, as per the judicial processes established in of the state/country. In general, the legal system is accessible to all such aggrieved persons. However, there might be cases where vulnerable sections face hurdles in accessing the legal recourse system. These hurdles usually include the cost of litigation, knowledge about the legal system, or the lack of awareness about formal legal procedures. To help citizens access the legal recourse system, each State has an operational mechanism called the Legal Aid Centre, which provides free services, including services of lawyers, without any cost to the litigants. The social specialist of PIU will engage with the State Legal Aid Centre to provide such services to the aggrieved persons. As part of the partnership, the project will reimburse all additional costs to the State Legal Aid Centers. This facilitation will be available to the aggrieved person(s) if they fulfill the following two conditions: (1) that such aggrieved person(s) belong to any of the following vulnerable sections of the society - below poverty line families, scheduled castes, scheduled tribes; or is disabled, handicapped, orphaned or destitute person; and (2) such a person or persons those who have exhausted the provisions of GRM.

9.8.6. World Bank Grievance Redress Service (GRS).

Communities and individuals who believe that they are adversely affected by Sub-project interventions may submit complaints to existing project-level GM or the WB Grievance Redress

Service (GRS). Project affected communities and individuals may also submit their complaint to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, because of non-compliance with WB ESF requirements. Details of the procedures to submit complaints to the WB's corporate GRS, is available in the GRS website: http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the WB Inspection Panel, please visit http://www.inspectionpanel.org/. Any disclosure instrument on GM will provide addresses of the GRS and the Inspection Panel.

10. Chapter 10: Outline of the proposed capacity-building program under MERITE (2022-2027)

Table 10.1: Capacity-building program under MERITE (2022-2027)

Training program and modules	Content	Organizer/ Presenter	Timelines	Targeted Participants
Central Level Training				
I. Orientation				
Module 1: About the MERITE project	• About the concept of MERITE. • Role of State Departments and the World Bank • Project Components • Project Implementation set up	Central Project Advisor	First Year (Before implementation cycle) Third Year beginning Fifth Year beginning	Officials involved in the project, other officials from AICTE, NBA, UGC and other associated departments.
Module 2: ESMF and the Project Cycle and Regulatory Aspects	• World Bank ESS. • Concept of ESMF. • Applicable regulations: National, State, and others. • Project Cycle of MERITE. • ESMF incorporation in Project Cycle during Identification, Preparation, Appraisal, Implementation.	The World Bank		
Module 3: Sub-Project level Environmental and Social Assessments, overall social risks mitigation/ Management measures, Institutional Aspects, Budget	• Process to be followed. • Identification of Social Impacts. • Impact Identification Methods. • Identification of Mitigation measures • Formulation of Social Management Plan • Equity Action Plan • Implementation, Monitoring, Institutional Mechanism • Environmental and social audits and beneficiary assessment.	Central Project Advisor		
II. Implementation Experience Sharing Program				
Module 1: Experience sharing on ESMP Implementation	• Experiences on implementation of ESMF in implemented projects. •	Social Consultant, NPIU and World Bank	Second, Fourth and Final Year of Implem-entation	State Level MERITE officials, Institute officials
Module 2: Stakeholder participation and community engagement	• Stakeholder Analysis. • Best practices in various institutions			

Training program and modules	Content	Organizer/ Presenter	Timelines	Targeted Participants
Module 3: Best practices showcase	• Site visit to select institutions to display best practices			

Annexures

Annex-1: Bibliography of Secondary Resources

The following secondary resources were consulted for compilation of this report:

1. *2011 Census Data, Office of the Registrar General & Census Commissioner, India, Ministry of Home Affairs, GoI.*
2. *Environmental and Social Standards (ESS) 2018, the World Bank.*
3. *AISHE final report 2019-20, Department of Higher Education, Ministry of Education, GoI.*
4. *Institutional data from Dashboard of AICTE, Ministry of Education, GoI.*
5. *National Education Policy 2020, Ministry of Education, GoI.*
6. *National Crime Records Bureau Report 2020, Ministry of Home Affairs, GoI.*
7. *Global Gender Gap Report 2021, World Economic Forum.*

Annex-2: Environment Safeguard Activities in Educational Institutes

By

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Environment management and safety is essential for maintaining productive and healthyworking environment in the Institutions. Several aspects such as proper sanitation, drinking water availability, sustainable solid waste management and safety of people should be addressed to create a healthy environment. All the activities should be documented adequately and reviewed for improvement.

The major activities which may be considered on priority in different verticals of environmental management and safety are discussed below.

Practices that can be adopted by institutions for improvement on drinkingwater and safety issues within the campus

Depending upon source and level of treatment given to the water supplied to theInstitute, suitable measures need to be made within a University/ Institute.

i) The water quality data should be obtained in different seasons to ensure supply of safe water.

ii) In case of emergency, the water samples must be analysed for the presence of pathogens and disinfectant should be added if it is contaminated.

iii) The institute should have a laboratory having major instruments, wet chemistry facilityand pathogen testing accessories. As an alternative, the water quality may be checkedperiodically from a certified laboratory.

iv) The water testing facility as well as treatment plant should be operated and maintained by skilled personnel.

v) Generally, if treated water is supplied to an Institute, there may be decentralized aquaguards installed in various academic units and hostels (if it is residential institute). These aquaguards can have a combination of treatment units such as filter (for colloidal and tiny suspended impurities), activated carbon filter (for removal of anyorganics), UV light (disinfection) etc. *It should be ensured that pathogen free water is supplied to the students and academic buildings*. The staff who stays on campus mustbe advised to have some kind of treatment to the water before consumption.

vi) The water should be drawn from designated drinking water taps.

vii) Portable water purifier and/ or water coolers should be installed to draw off the drinking water. The capacity of water purifier/ cooler can be decided based on the number of persons in a building. Normally, 2-2.3 L water intake per person may be assumed for calculation. (https://www.statista.com/statistics/1137274/india-average-water-consumption- per-person-by-age-group/)

viii) If water is directly supplied from borehole or surface source, an appropriate centralized water treatment plant should be installed. Package plants can be used to eliminate construction activities on campus which will reduce pollution and disturbance significantly. However, de-centralized water treatment units (i.e., aquagaurd) should be installed to take care from any contamination during transfer ofwater from overhead tank (if any) or water treatment plant to the point of use.

ix) Water meters should be installed to predict the water use in the campus and suitableguidelines can be given if water consumption is higher.

Wastewater treatment and water management (audit) and conservation

i) The decision on installation of a sustainable wastewater (or sewage) treatment plant will depend upon the size of institution, availability of treatment facility in close proximity and water demand in the

campus.

ii) Efforts should be made to treat grey water (emerging from bathrooms, kitchens etc and excludes wastewater from toilets in case of residential institutes) to recycle for non-potable use. The most prominent use can be toilet flushing and watering to plants/ gardening. However, the treated wastewater must be disinfected before recycling since pathogen removal may not be sufficient during treatment.

iii) For a non-residential university in a remote location, septic tanks should be installed to treat the wastewater produced from toilets and other activities.

iv) Water and wastewater audits should be performed to examine the performance of systems, any leakages/ loss, and other issues. The benefit of audit is to fix the issues in time which would make the overall system sustainable. The audit should involve collection, and verification of data. Based on the observations, suitable recommendations should be made. The recommendations may evaluate the options for wastewater recycling to conserve fresh water. This practice not only assist in maintaining proper sanitation conditions but also help in water conservation and wastewater recycling.

v) For water conservation, water harvesting should also be explored in the campuses. The stored and purified water may be utilised for non-potable purposes.

Mitigation measures for good Sanitation and hygiene

i) To ensure good sanitation and hygiene, proper water and wastewater treatment (optional) system should be used in an Institute. The storm water as well as sewage drains should be designed properly in the view of future developments (for large residential campus).

ii) The storm water drains should be cleaned time to time (particularly pre-monsoon period) for removal of silt or any other material such as leaves etc to avoid water stagnation. Accumulation of water may result in breeding of mosquitos thus causing risk for diseases.

iii) The water should not be allowed to accumulate in homes/ buildings for long period inpots/ buckets which again may trigger mosquito borne diseases. Awareness programs should be organized periodically to ensure that the campus residents are aware aboutthe existing systems and risks associated with such practices. Frequent checking by concerned office (such as Public Health Office in an Institute) staff should be made tosensitize the residents.

iv) Hygienic conditions in students' mess should be maintained. Posters may be displayedto make mess workers as well as students aware about the cleanliness.

v) Toilets should be washed and sanitize properly.

vi) The waste material (such as e-waste, construction debris, garden waste, waste furniture etc.) should not be stored at different locations in the campus. A properly enclosed and ventilated storage yard away from the residential and academic area should be selected for short duration storage only.

vii) On-site solid waste and wastewater (particularly sewage if installed at campus) facilities should be located at suitable distance from the residents in order to avoid any odor related issues. However, grey water treatment plants are often installed close to the source of generation.

viii) Fogging and spray can be explored to kill mosquitos in the campus. However, the frequency and dose should be chosen carefully probably in consultation with the expert.

Management & treatment of Solid Waste (including e-wastes) within campus

i) Solid waste produced from residents, mess, hostels, academic and administrative block mainly should be segregated in three different bins meant for wet waste (such as cooked/ uncooked food, fruit peelings etc), dry waste (plastic, paper, textile etc) and domestic hazardous waste (such as used batteries, light bulbs, paint etc.) as per Solid Waste Management Rules (2016).

ii) The amount of municipal solid waste (MSW) generation highly depends upon thelocation and awareness level of people. Based on a study on 28 cities, MSW generationcan range from 0.19-0.99 kg/ person/day. (https://www.niti.gov.in/sites/default/files/2021-12/Waste-Wise-Cities.pdf)

Out of which ~50% is likely to be wet waste.
(https://www.sciencedirect.com/science/article/pii/S2666049020300244).

iii) Waste collection should be carried out in organized manner and the segregated wasteshould further be processed as discussed in points below.

iv) The wet waste comprising of vegetable and fruit peelings should be composted (drum/vermi-culture) within the campus to produce manure (Fig. 1) whereas cooked mess orcanteen waste (having very high moisture) may be subjected to anaerobic digestion process which produce biogas. The composition of wet waste (as cooked and non- cooked) is difficult to predict. Less wastage and smaller units will reduce wastequantity and vice-versa. The manure and biogas (as fuel) thus produced can be utilisedwithin the campus for gardens and mess, respectively.

v) Garden waste comprising of dry leaves, grass and tree branches should be used for mulching within the campus. Leaves and grass clippings are generally rich in nutrientsand may help in improving soil productivity. Efforts should be made to utilise tree branches for furniture after proper treatment.

vi) For garden waste, other options such as pelletization with other non-recyclable dry waste components such as paper, plastic, textile etc. may be explored depending uponthe local conditions. The pellets can be utilised in energy recovery processes which notonly promote waste diversion from landfills but also reduce consumption of non- renewable fossil fuels.

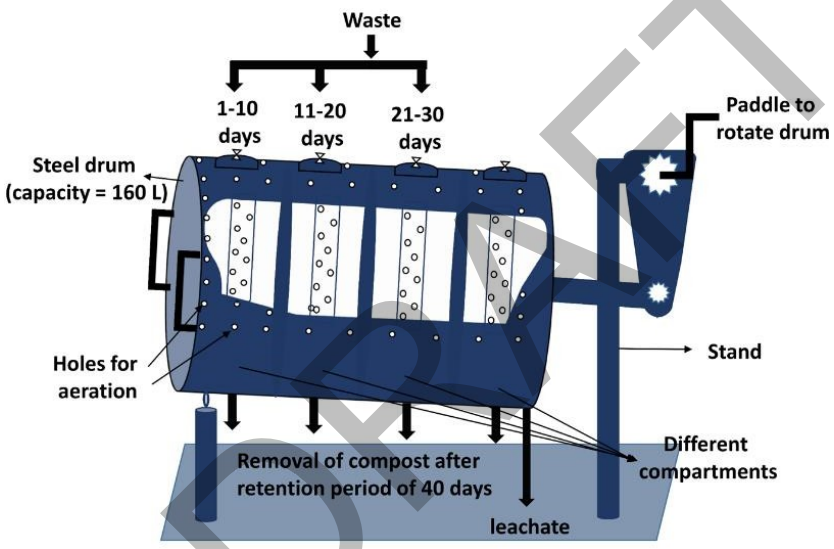


Fig 1. An example of a decentralised composting system (Manu et al., Waste and biomass valorization 2021 v.12 no.11 pp. 6119-6137)

vii) The dry waste should be segregated and recycled by the municipality authorised wastecollectors or scrap dealers for avoiding waste disposal in landfills.

viii) Sanitary napkins and diapers must be collected separately and handed over to the authorised agency for disposal. Mixing with dry waste reduces the opportunity of drywaste recycling. In girls' hostels, small incinerators may also be installed to destroy sanitary napkins. However, the performance and specification of the machine shouldbe studied well before installation.

ix) The residents of the campus must be sensitized by conducting seminars/ pamphlets etc.

x) E-waste including computers, laptops, mobiles, washing machines, printers, fax machines, photocopier etc should be taken away by an authorised dealer at suitable time interval. In return, Institute may generate revenues which may be utilised for better management.

xi) Biomedical waste is also produced depending upon the nature of the Institute. The waste from hospital and dispensary should be collected separately and properly labelled as per the rules. The waste should be transferred to the dedicated biomedicalwaste treatment facility.

Development of environmentally safe Laboratory (design, safety, storageof chemicals, waste disposal etc.)

The laboratory should be designed based on their intended end use.

i) For instance, computer laboratory should have proper arrangement for seating and the distance and height should be adequate. The wiring should not be exposed.
ii) Chemical labs should have chemical storage cabinets with proper labelling. The ventilation system in the labs should be well designed. The discarded chemicals shouldbe stored separately and removed from the lab at regular interval through appropriatemethod.
iii) Hazardous chemicals should be stored at suitable place and extra care needs to be taken while handling.
iv) Glassware must be stored on the racks or cupboards separately and should be washedafter use.
v) The students must wear lab coats and shoes during the class to avoid any injury due to spillage or any accident.

vi) The wastewater produced during experiments may contain hazardous chemicalswhich need to be disposed in proper way. The hazardous liquid waste should be collected in separate containers (with color code and/or tags) before handing over tothe certified waste recyclers/ disposal organizations.
vii) Fumehoods should be installed in the chemistry laboratories as fume of volatile compounds and gases may be released which should be vent off through fume hoodsat sufficient height without causing any problems to the other building occupiers.
viii) The gas cylinders should be stored at a designated location from where the pipeline may be extended to the laboratory. If the cylinder has to be kept in laboratory, the excellent ventilation conditions should be ensured and gas measuring devices shouldbe installed for continuous monitoring.
ix) The sensors should be installed so that alarm is raised if any undesirable gas is released in excess concentration than that the permissible one.
x) Proper guidelines should be given to the lab users which may be pasted and the compliance must be verified by lab in-charge/ attendant time to time.
xi) Emergency plans should be shared with the lab users.

xii) Lab water taps should be properly working. In case of any spillage, the user should beable to use the designated water taps.
xiii) In lab, mask may also be needed depending upon the chemicals/ biological agents tobe handled.

Guidance on environmental, health and safety measures for the campus.

i) The campus must have green pockets which not only improve the ambience but also reduces carbon footprints.
ii) Energy efficient measures should be incorporated in the university/ institute. As an example, solar panel systems can be installed on the flat roof top in the campus. The installation of solar panels may reduce the electricity costs significantly. Such provisions may also help the university/ institute earning points for certification of green building.

iii) Proper planning for waste management (hazardous and non-hazardous including domestic, biomedical, e-waste, & construction and demolition waste) should be madeand separate documents should be created. The concerned people should be aware with all the safety rules.
iv) Occupational health and safety (OHS) assessment should be done to evaluate the potential risks involved at the workplace, to identify the sources of risk and to reducethe risk to the health and safety of the people. The OHS programme should be aimedto eliminate injuries, accidents and environmental impacts in collaboration with all stakeholders (i.e., students, faculty and staff) in an institute/

University.
The key elements of a successful OHS program are as follows (also shown in Fig. 2)

(https://www.hsa.ie/eng/Topics/Managing_Health_and_Safety/Safety_and_Health_Management_Systems/):

- Policy and commitment
- Planning to deliver the policy
- Implementation
- Measuring performance
- Auditing and reviewing performance

Fig. 2. Elements of OHS Audit
(https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3D3j4HRaDOksI&psig=AOvVaw0X3KFvKvJixkCt_O1XfAWk&ust=1650301545536000&source=images&cd=vfe&ved=0CAkQjRxqFwoTCJjzgL_Km_cCFQAAAAAdAAAAABAT)
A separate fire and safety section may be established in the Institute for monitoring and maintenance of the facilities. A University or Institute level advisory committee may be formed to formulate relevant policies, monitoring methods and analysis of systems. Moreover, Head of Departments should facilitate and ensure the strict implementation of policies in their respective academic units.
The workers/ labourers should be informed about the environment, health and safetyrelated issues related to their work. Short training programmes should be organized time to time.
The institute should have detailed environmental management plan and emergency plan which should be shared with concerned Heads/ officers.
Some of the major issues addressed through these programs include:

a) Fire safety: Proper measures should be taken to ensure fire safety. Fire drilling should be conducted time to time and designated collection point should be madein a building where the occupiers of the building should assemble in case of fire.
Fire hydrants must be checked periodically for sufficient pressure and enough personnel should be available to handle fire accident immediately. Training programmes may be arranged in this regard.
Fire audits should be conducted at regular interval to minimize the risk for any accident.
b) Biosafety measures should be made in the laboratories involving studies on biological agents (such as virus, bacteria etc). Biosafety cabinets should be procured and proper facility for storage as well as enclosed control working environment should be created.
c) In the event of a construction and demolition activity, proper arrangement shouldbe made to minimize disturbance to the campus users (students, staff, faculty andvisitors). The area should be covered to prevent sound and dispersion of dust in the neighbouring environment. Safety of workers should be

ensured and the mandatory precautions should be the part of 'terms of reference'. A check-list can be prepared and a team constituted by the Institute can make visits time to timein order to ensure the compliance with the mandatory guidelines.

d) In the similar lines, electric audit should be performed to avoid incidences of short-circuiting, fire, equipment failures etc.
e) It should be ensured that the workers are provided with all protective equipmentsand they use all protective gears (as needed) during the execution of work.
f) Wellness programs should be conducted and services of a counsellor should beavailed part time/ full time basis in order to ensure wellbeing of all stakeholders.
g) First aid service should be available in case of any accident. A small dispensary ordoctor may be hired.

Annex-3: Environmental Screening Checklist for Minor Civil Works/Equipment Installation

MERITE PROJECT

ENVIRONMENTAL SCREENING CHECKLIST FOR MINOR CIVIL WORKS/EQUIPMENT INSTALLATION

State			
Name of Institute			
Location			
Description of intended works			
Planned Start Date		**Planned End Date**	

1. Are any trees intended to be cut down or trimmed for the sub-project? ☐Y ☐N

2. Do the proposed minor civil works or equipment installation require any statutory permissions?
   If yes, please give details here: ☐Y ☐N

SN	Type of Clearance/Permission Required	Name of Competent Authority
1.		
2.		
3.		

3. Please describe the EHS features (as applicable) included EITHER in the plan/design of the intended minor civil works OR installation plan/procedure of equipment proposed to be installed in the institution in the format below:

SN	EHS Feature	Tick if applicable	Describe how these features are addressed in the design or shortcomings noticed, if any
1.	Green Building Features (ventilation, natural lighting, universal access, etc.)	☐	
2.	Safety of structure / equipment	☐	
3.	User/Community Safety	☐	
4.	Energy, Water Conservation, etc.	☐	
5.	Use of renewable energy	☐	
6.	Any other	☐	

4. Is the sub-project activity likely to significantly affect its surroundings in any of the following ways?

SN	Type of Impact	Response	If yes, give details
1.	Impact on adjoining protected forest / water body / wetland / coastline / natural habitat, if any	☐Y ☐N	
2.	Impact on any nearby protected monument/physical/cultural resource	☐Y ☐N	
3.	Release of water causing waterlogging and/or soil erosion	☐Y ☐N	
4.	Excessive release of dust particles in surrounding air	☐Y ☐N	
5.	Excessive noise levels during works execution	☐Y ☐N	
6.	Release of any polluting or hazardous substances	☐Y ☐N	
7.	Pose significant risk of injury to workers involved in the activity	☐Y ☐N	

8.	Pose any kind of safety hazard to persons living in the vicinity	☐Y ☐N	
9.	Any others (*please specify*)	☐Y ☐N	

COMMENTS OF INSTITUTIONAL ENVIRONMENT FOCAL POINT		
EHS/OHS Mitigation Plan is ☐Required ☐Not Required ***Reasoning*** Name:	Signature:	Date:
COMMENTS OF SPIU ENVIRONMENT FOCAL POINT		
☐Agree ☐Disagree with above reasoning ***Reason(s)*** ***Recommended Action(s), if any***: Name:	Signature:	Date:

Annex-4: EHS/OHS Mitigation Plan for Minor Civil Works/Equipment Installation

MERITE PROJECT

EHS/OHS MITIGATION PLAN FOR MINOR CIVIL WORKS/EQUIPMENT INSTALLATION

State			
Name of Institute			
Location			
Description of intended works			
Planned Start Date		**Planned End Date**	

STATUTORY PERMISSIONS

SN	Type of Clearance/Permission Required	Name of Competent Authority	Current Status
1.			☐Not Applied ☐Applied ☐Granted
2.			☐Not Applied ☐Applied ☐Granted
3.			☐Not Applied ☐Applied ☐Granted

EHS ASPECTS OF MINOR CIVIL WORKS/EQUIPMENT INSTALLATION PLAN/DESIGN

SN	EHS Features in design	Tick those applicable*	Provisions to be included in design
1.	Green Building Features (ventilation, natural lighting, universal access, etc.)	☐	
2.	Safety of structure / equipment	☐	
3.	User/Community Safety	☐	
4.	Energy, Water Conservation, etc.	☐	
5.	Use of renewable energy	☐	
6.	Any other (please specify)	☐	

*Refer to screening checklist to find out which of the above issues are applicable and tick only those that are ticked in that checklist

OTHER EHS/OHS ISSUES AND THEIR MITIGATION

SN	Issue Category	Tick if applicable	Issue Description	Suggested Mitigation Measures/Actions
1.	Worksite/Equipment Safety	☐		•
2.	Worker Safety	☐		•
3.	Construction material source	☐		•
4.	C&D waste disposal	☐		•
5.	Plastics waste disposal	☐		•
6.	Municipal waste disposal	☐		•
7.	Wastewater disposal	☐		•
8.	Worker amenities	☐		•
9.	First-aid/Medical Support	☐		•
10.	Emergency Arrangements	☐		•
11.	Any other (specify)	☐		•

APPROVAL OF HEAD OF INSTITUTION

EHS/OHS Mitigation Plan is ☐Approved ☐Not Approved

Reasoning

Name: Signature: Date:

SPIU ENVIRONMENT FOCAL POINT'S OBSERVATIONS

Observations

Recommended Action(s), if any:

Name:	Signature:	Date:

Annex-5: EHS/OHS Mitigation Plan for Minor Civil Works/Equipment Installation

MERITE PROJECT

MINOR CIVIL WORKS / EQUIPMENT INSTALLATION COMPLETION CHECKLIST

State			
Name of Institute			
Location			
Description of intended works			
Planned Start Date		**Planned End Date**	

Provisions of the EHS/OHS Mitigation Plan Successfully Addressed at the time of works completion

SN	Checklist Items	Response	If no, mention specific sites and warranted action(s)
1.	All statutory permissions granted and in place, if applicable	☐Y ☐N ☐NA	•
2.	Green Building Features (ventilation, natural lighting, universal access, etc.)	☐Y ☐N ☐NA	•
3.	Safety features in completed structure / equipment	☐Y ☐N ☐NA	•
4.	Energy, Water Conservation, etc.	☐Y ☐N ☐NA	•
5.	Use of renewable energy	☐Y ☐N ☐NA	•
6.	Emergency Arrangements	☐Y ☐N ☐NA	•
7.	Any other (specify)	☐Y ☐N ☐NA	•

APPROVAL OF INSTITUTIONAL ENVIRONMENT FOCAL POINT

Abovementioned Minor Civil Works /Equipment Installation has been found to be ☐Complete ☐Not Complete from EHS/OHS angle

Reasoning if not complete

Name: Signature: Date:

SPIU ENVIRONMENT FOCAL POINT'S OBSERVATIONS

Observations

Recommended Action(s), if any:

Name: Signature: Date:

Annex-6: Construction / Equipment Installation Stage Monitoring Checklist

MERITE PROJECT

CONSTRUCTION / EQUIPMENT INSTALLATION STAGE MONITORING CHECKLIST

State			
Name of Institute			
Location			
Description of intended works			
Planned Start Date		**Planned End Date**	

1. SITE LAYOUT

Attribute	Observations/Comments, if any	Supporting Photograph	Recommended Action(s)
Orderliness	•		•
Pathways/ Obstructions to movement	•		•
Construction Material Stacking	•		•
Action on PCR issues. If applicable	•		•

2. SITE AND WORKER SAFETY

Attribute	Observations/Comments	Supporting Photograph	Recommended Action(s)
Access Control	•		•
Safety signage	•		•
Barricading	•		•
Netting	•		•
PPE in use by workers	•		•

3. BASIC FACILITIES AT SITE FOR WORKERS

Attribute	Observations/Comments	Recommended Action(s)
Drinking water	•	•
Toilets (Men)	•	•
Toilets (Women)	•	•

4. NOISE AND AIR QUALITY MONITORING

Parameters Monitored	Is this parameter monitored?	Observations/Comments based on review of records maintained at site	Recommended Action(s)
Noise Level	☐Y ☐N	•	•
Air Quality	☐Y ☐N	•	•

5. WASTE MANAGEMENT

SN	Type of Waste	Observations/Comments	Supporting photograph(s)	Recommended Action(s)
1.	Excavated earth/C&D	•		•
2.	Domestic waste	•		•
3.	Wastewater	•		•
4.	Metal scrap	•		•
5.	Electrical	•		•
6.	Plastics	•		•
7.	Wood / Furniture	•		•

6. EMERGENCY ARRANGEMENTS AND WORKER HEALTH

Context	Status	Observations/Comments based on review of records maintained at site	Supporting Photograph(s)	Recommended Action(s)
Any significant incident or accident occurred during the review period? *If yes, give details of incident as well as action taken*	☐Y ☐ N	•		•
Fire safety equipment in place	☐Y ☐ N	•		•
Whether fire-safety equipment is within the service expiry date	☐Y ☐ N	•		•
First-aid box available at site?	☐Y ☐ N	•		•
Is COVID-19 protocol maintained properly?	☐Y ☐ N	•		•

Name of Institutional Environment Focal Point: **Signature**

This document is to be submitted to Environment Focal Point, SPIU

COMMENTS OF Environment Focal Point, SPIU

Observations/Comments/Remarks	Actions/Instructions	Forwarded to following officials for information / further action
•	•	

Signature of Environment Focal Point, SPIU
Date:

Annex-7: Checklist for Assessing Environmental Readiness Of Training/Mass Outreach Venue

MERITE PROJECT

CHECKLIST FOR ASSESSING ENVIRONMENTAL READINESS OF TRAINING/MASS OUTREACH VENUES

Name of Training/Event		Institute or Venue	
Date		No. of Participants	

	Environmental Issue/Parameter	Available Arrangements	Response	SPIU Comments
1.	Drinking Water Supply	Quantity of drinking water arranged for (lits)		
		Type of water treatment undertaken	☐ Treated (municipal) water ☐ Water purifier ☐ RO ☐ Packaged water ☐ Untreated water	
2.	Sanitation Arrangements	Number of toilets	Type of Toilets / Nos / Functional? Male / ☐ Y ☐ N Female / ☐ Y ☐ N Trans-gender / ☐ Y ☐ N Physically challenged / ☐ Y ☐ N	
		Functional Sewerage available	☐ Y ☐ N	
		All plumbing fittings leakage free and functional with no water stagnation	☐ Y ☐ N	
3.	Waste Generation	Waste segregation arrangements	Waste Category / No of bins Choose an item. / Choose an item. / Choose an item. / Choose an item. /	
		Waste disposal arrangements	☐ Collected by Municipality ☐ Disposed in local municipal facility ☐ Collected by private entities ☐ Biodegradable waste composted ☐ Dumped in adjoining areas	
4.	Safety	Universal access features (ramps, etc.) available?	☐ Y ☐ N	
		Furniture safety check conducted?	☐ Y ☐ N	
		Danger/Safety signages installed?	☐ Y ☐ N	
		Electrical Safety features in place?	☐ Y ☐ N	
		Workers provided with PPE?	☐ Y ☐ N	
5.	Fire-fighting Arrangements	Fire safety arrangements in place and functional?	☐ Y ☐ N	
		No of functional fire extinguishers	☐ Y ☐ N	

		Evacuation procedures in place? Fire in-charge on duty?	☐ Y ☐ N ☐ Y ☐ N	
6.	First Aid and Medical Back-up	Number of first-aid boxes available Are they fully stocked? Numbers of nearest medical facilities/ambulance services available/prominently displayed	 ☐ Y ☐ N ☐ Y ☐ N	
7.	Emergency Response Arrangements	Trained emergency response personnel available and on call?	☐ Y ☐ N	
8.	COVID-19 Protocol	Thermal scanning organized? COVID appropriate behavior in practice as per applicable guidelines in force	☐ Y ☐ N ☐ Y ☐ N	

Name of in-charge officer from host institution	
Signature	
Date	

Remarks/Comments of SPIU Environment Focal Point

Recommended Actions for Improvement

Requested date for Action Taken Report from Institution

Support requested from PIU, MERITE if any

Name of SPIU Environment Focal Point	
Signature	
Date	

Annex-8: Percentage of State-wise population

State/UT	Population	Percent (%)
Andaman and Nicobar Islands (UT)	380,581	0.03
Andhra Pradesh	49,386,799	4.08
Arunachal Pradesh	1,383,727	0.11
Assam	31,205,576	2.58
Bihar	104,099,452	8.60
Chandigarh (UT)	1,055,450	0.09
Chhattisgarh	25,545,198	2.11
Dadra and Nagar Haveli (UT)	343,709	0.03
Daman and Diu (UT)	243,247	0.02
Delhi (UT)	16,787,941	1.39
Goa	1,458,545	0.12
Gujarat	60,439,692	4.99
Haryana	25,351,462	2.09
Himachal Pradesh	6,864,602	0.57
Jammu and Kashmir	12,541,302	1.04
Jharkhand	32,988,134	2.72
Karnataka	61,095,297	5.05
Kerala	33,406,061	2.76
Lakshadweep (UT)	64,473	0.01
Madhya Pradesh	72,626,809	6.00
Maharashtra	112,374,333	9.28
Manipur	2,855,794	0.24
Meghalaya	2,966,889	0.25
Mizoram	1,097,206	0.09
Nagaland	1,978,502	0.16
Odisha	41,974,218	3.47
Puducherry (UT)	1,247,953	0.10
Punjab	27,743,338	2.29
Rajasthan	68,548,437	5.66
Sikkim	610,577	0.05
Tamil Nadu	72,147,030	5.96
Telangana	35,193,978	2.91
Tripura	3,673,917	0.30
Uttar Pradesh	199,812,341	16.50
Uttarakhand	10,086,292	0.83
West Bengal	91,276,115	7.54

Annex-9: State-wise Sex-Ratio

State/UT	Sex ratio
Andaman and Nicobar Islands (UT)	876
Andhra Pradesh	996
Arunachal Pradesh	938
Assam	958
Bihar	918
Chandigarh (UT)	818
Chhattisgarh	991
Dadra and Nagar Haveli (UT)	774
Daman and Diu (UT)	618
Delhi (UT)	868
Goa	973
Gujarat	919
Haryana	879
Himachal Pradesh	972
Jammu and Kashmir	889
Jharkhand	948
Karnataka	973
Kerala	1084
Ladakh	889
Lakshadweep (UT)	946
Madhya Pradesh	931
Maharashtra	929
Manipur	985
Meghalaya	989
Mizoram	976
Nagaland	931
Odisha	979
Puducherry (UT)	1037
Punjab	895
Rajasthan	928
Sikkim	890
Tamil Nadu	996
Telangana	988
Tripura	960
Uttar Pradesh	930
Uttarakhand	963
West Bengal	950

Annex-10: State-wise Literacy Rate

State or UT	Overall (%)	Male (%)	Female (%)
Andaman and Nicobar Islands	86.27	90.11	81.84
Andhra Pradesh	67.35	74.77	59.96
Arunachal Pradesh	66.95	73.69	59.57
Assam	73.18	78.81	67.27
Bihar	63.82	73.39	53.33
Chandigarh	86.43	90.54	81.38
Chhattisgarh	71.04	81.45	60.59
Dadra and Nagar Haveli	77.65	86.46	65.93
Daman and Diu	87.07	91.48	79.59
Delhi	86.34	91.03	80.93
Goa	87.4	92.81	81.84
Gujarat	79.31	87.23	70.73
Haryana	76.64	85.38	66.77
Himachal Pradesh	83.78	90.83	76.6
Jammu and Kashmir	68.74	76.75	58.01
Jharkhand	67.63	78.45	56.21
Karnataka	75.6	82.85	68.13
Kerala	93.91	96.02	91.98
Ladakh	68.74	76.75	58.01
Lakshadweep	92.28	96.11	88.25
Madhya Pradesh	70.63	80.53	60.02
Maharashtra	83.2	89.82	75.48
Manipur	79.85	86.49	73.17
Meghalaya	75.48	77.17	73.78
Mizoram	91.58	93.72	89.4
Nagaland	80.11	83.29	76.69
Odisha	72.9	82.4	64.36
Puducherry	86.55	92.12	81.22
Punjab	86.6	81.48	71.34
Rajasthan	67.06	80.51	52.66
Sikkim	82.2	87.29	76.43
Tamil Nadu	80.33	86.81	73.86
Telangana	67.35	74.77	59.96
Tripura	87.75	92.18	83.15
Uttar Pradesh	69.72	79.24	59.26
Uttarakhand	79.63	88.33	70.7
West Bengal	77.08	82.67	71.16
Overall (India)	74.03	82.14	65.46

Annex-11: State-wise Scheduled Caste Population

State	Scheduled Caste (%)
India	16.63
Andhra Pradesh	16.41
Arunachal Pradesh	0
Assam	7.15
Bihar	15.91
Chhattisgarh	12.82
Goa	1.74
Gujarat	6.74
Haryana	20.17
Himachal Pradesh	25.19
Jammu & Kashmir	7.38
Jharkhand	12.08
Karnataka	17.15
Kerala	9.1
Madhya Pradesh	15.62
Maharashtra	11.81
Manipur	3.78
Meghalaya	0.58
Mizoram	0.11
Nagaland	0
Odisha	17.13
Punjab	31.94
Rajasthan	17.83
Sikkim	4.63
Tamil Nadu	20.01
Tripura	17.83
Uttar Pradesh	20.7
Uttarakhand	18.76
West Bengal	23.51

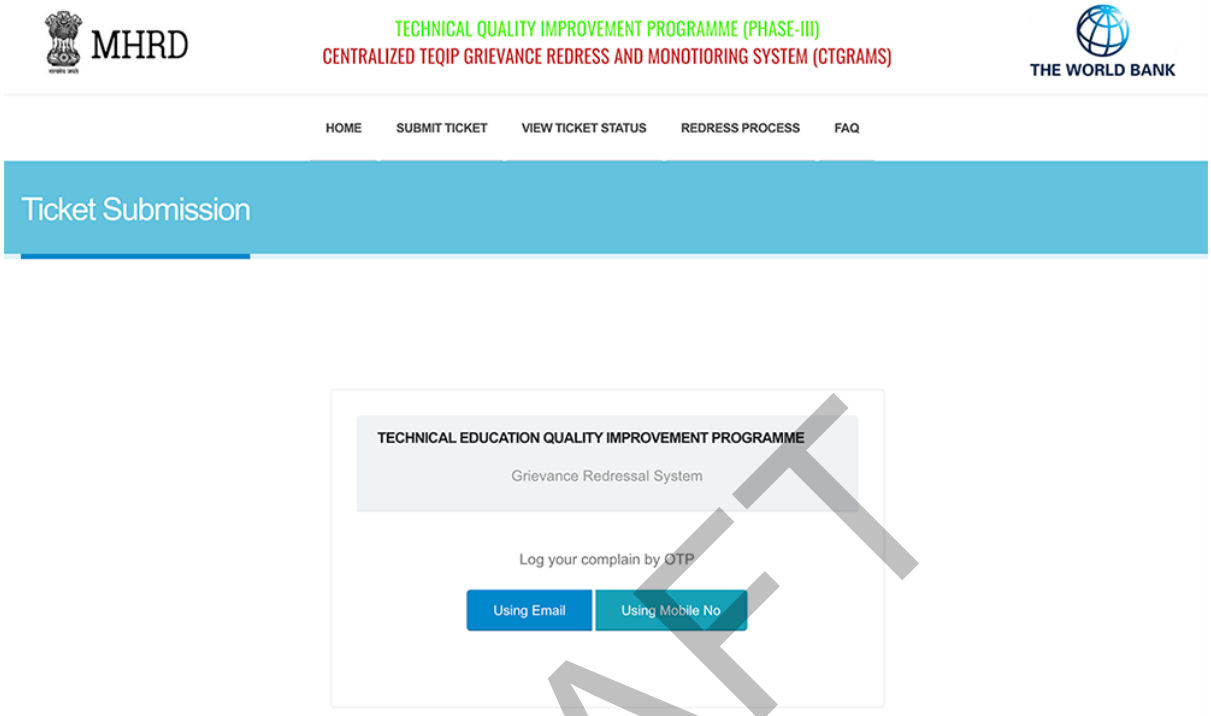
Annex-12: State-wise Scheduled Tribe population

State	Scheduled Tribe (%)
India	8.61
Andhra Pradesh	7
Arunachal Pradesh	68.79
Assam	12.45
Bihar	1.28
Chhattisgarh	30.62
Goa	10.21
Gujarat	14.75
Haryana	0
Himachal Pradesh	5.71
Jammu & Kashmir	11.9
Jharkhand	26.21
Karnataka	6.95
Kerala	1.45
Madhya Pradesh	21.09
Maharashtra	9.35
Manipur	35.14
Meghalaya	86.15
Mizoram	94.44
Nagaland	86.46
Odisha	22.85
Punjab	0
Rajasthan	13.48
Sikkim	33.72
Tamil Nadu	1.1
Tripura	31.76
Uttar Pradesh	0.57
Uttarakhand	2.9
West Bengal	5.8

Annex-13: CTGRAMS grievance filing procedure

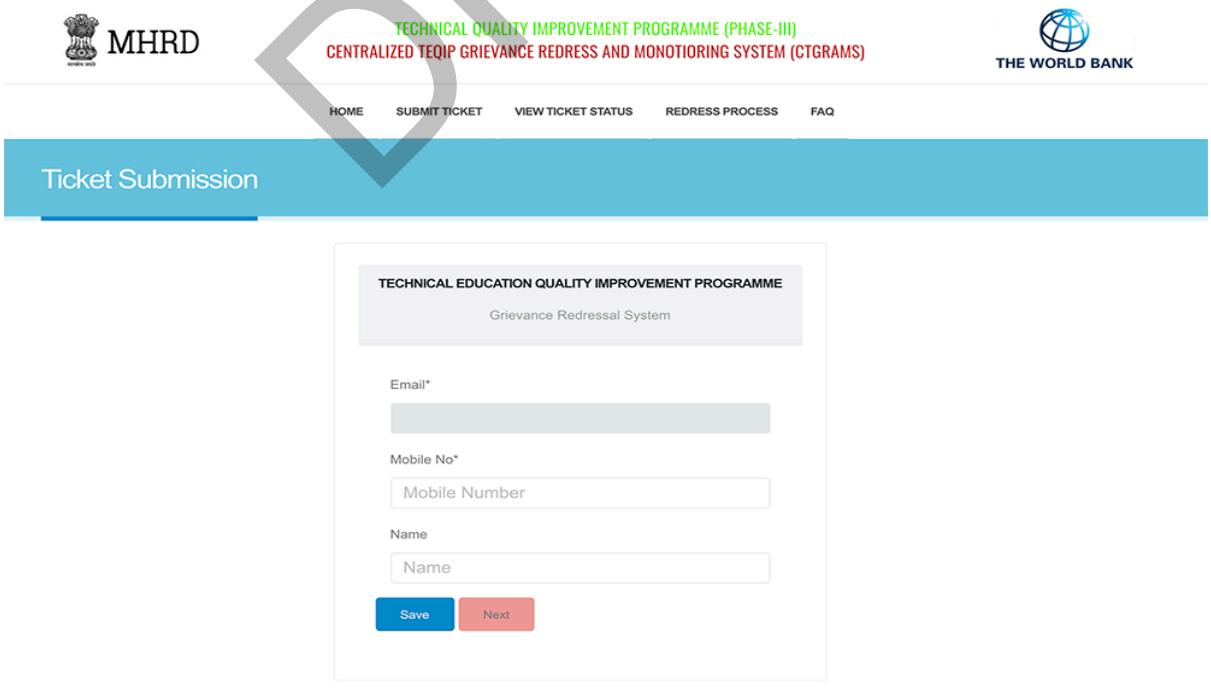
Step 1:

- Open the link of CTGRAMS at http://teqip.in/grm/user.php
- User will get two options to register the grievances either by email or by mobile no.



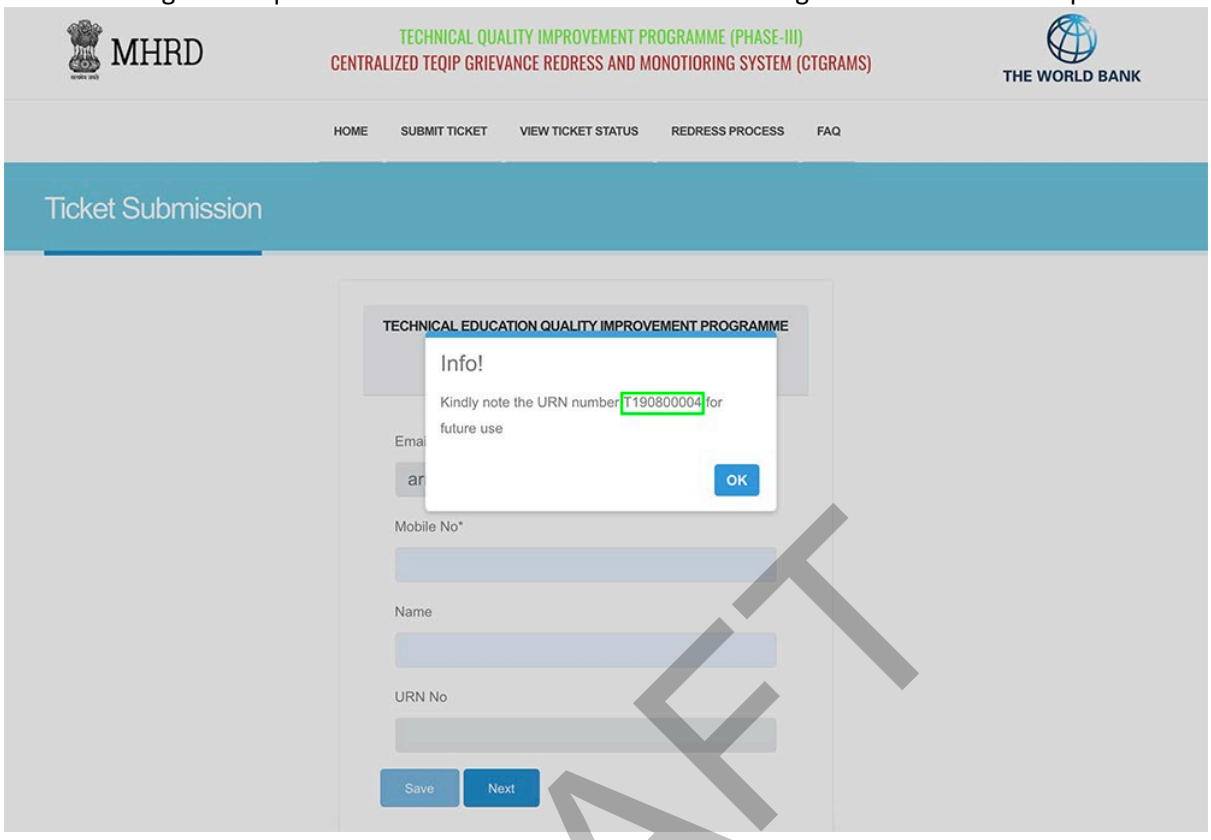
Step 2:

- User will get an OTP in both the cases
- After entering the OTP, it will ask to fill the details like Name, Mobile no. and Email Id
- User will fill the details and click on save button



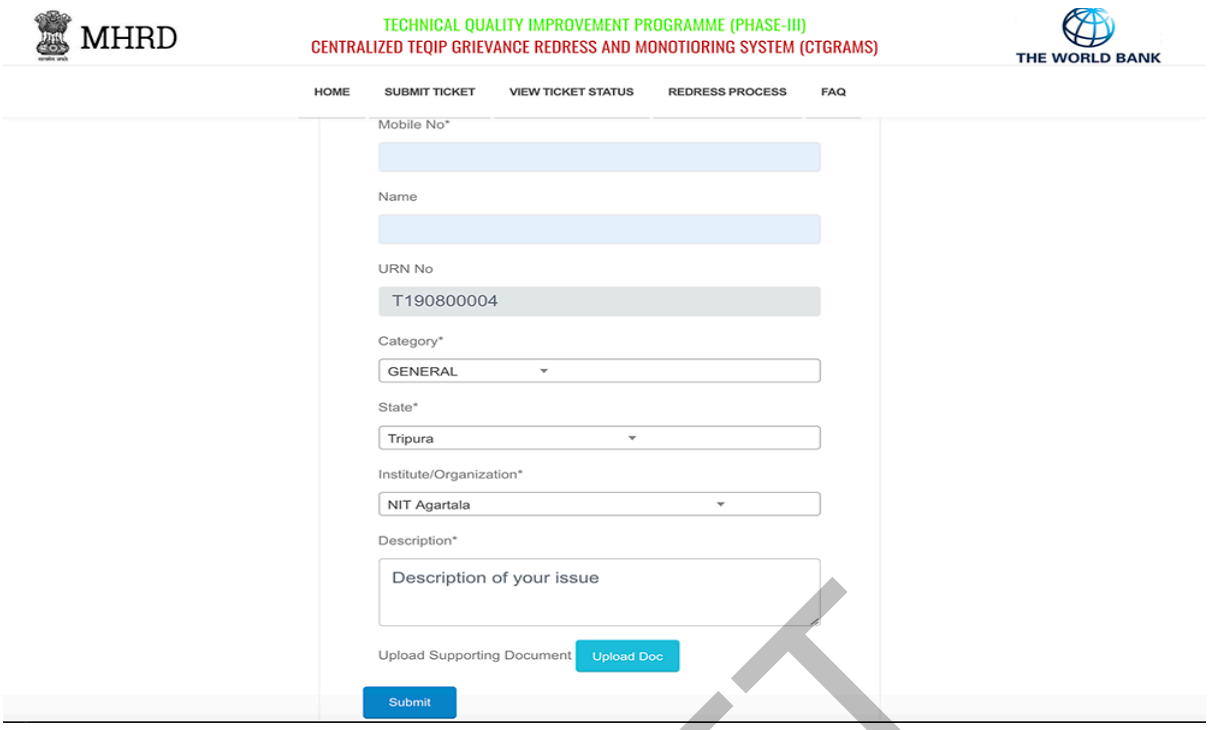
Step 3:

- User will get a unique URN no. It will be used for further tracing the status of the complaint.



Step 4:

- Click on Ok, then click on Next button.
- Now it will ask to fill further details related to the grievance of the user like category of the grievance (general, academic, financial etc.), name of the state of the user, Institute name and description of the complaint.
- User can also upload the documents/evidences related to the complaint/grievance

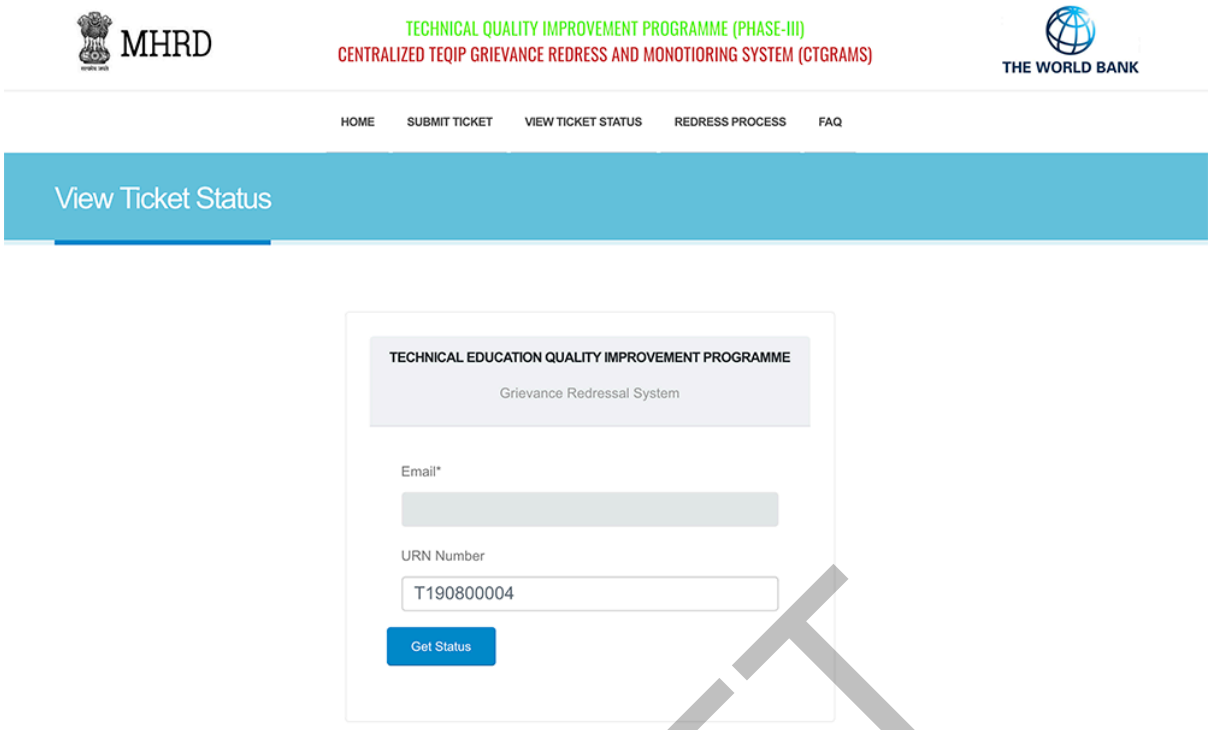


Step 5:

- Click submit after filling all the relevant details.
- After submitting, the user will get an SMS on the given mobile no. regarding successful submission of the grievance.

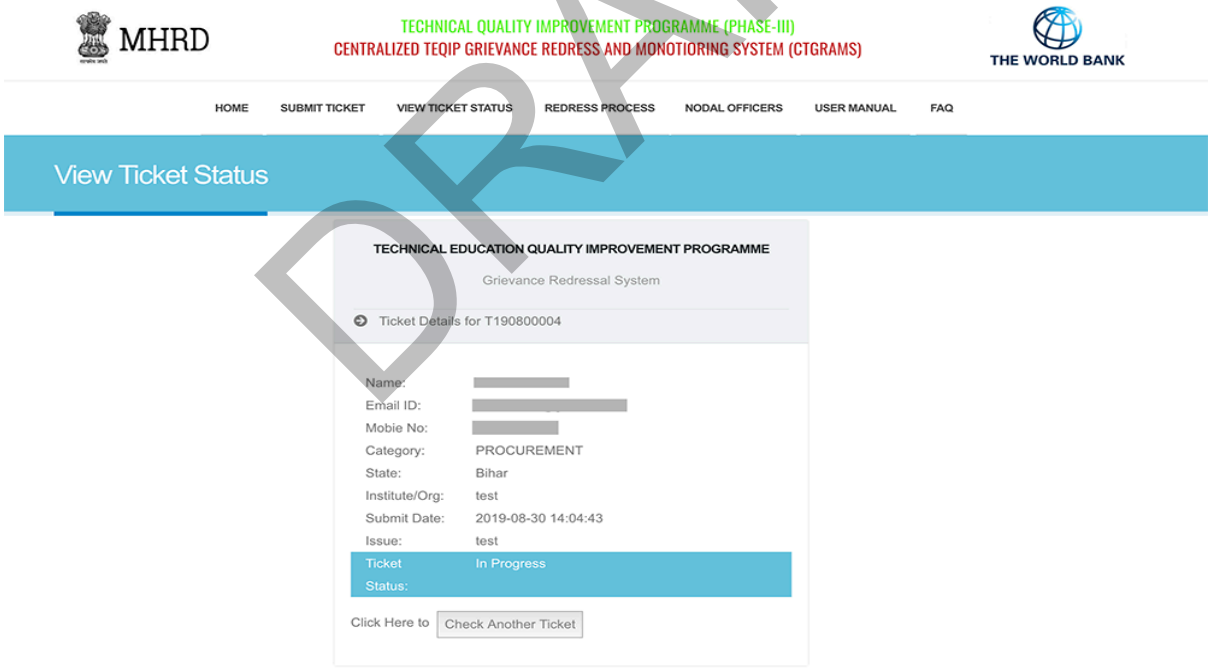
Step 6:

- User can check the status of the complaint/grievance at http://teqip.in/grm/checkComplainStatus.php
- It will ask you to enter the URN no. which was generated during registering the complaint/grievance.



Step 7:

- Click on Get Status to check the live status of your complaint/grievance



Annex 14: Exclusion/ Negative List of Activities NOT to be supported under the Project

S. No.	List of Non-Eligible Activities
1.	Construction within all protected/forest areas (including National Parks, Wildlife Sanctuaries), and, within Eco-Sensitive Zones for which final or draft notifications have been published by the MoEFCC (Ministry of Environment, Forest and Climate Change), GoI.
2.	Any activity that converts or leads to conversion of critical habitats, legally protected and internationally recognized areas of high biodiversity and designated forest areas.
3.	Construction, renovation, demolition or dismantling works involving 'ACM'.
4.	Any activity that violates the provisions of applicable National and State laws and of International Treaties and Conventions where India is a signatory.
5.	Any activity that has high probability of serious adverse effects to human health and/or environment.
6.	Any activity that violates the provisions of applicable National and State laws and of International Treaties and Conventions where India is a signatory.
7.	Involuntary land taking, irrespective of ownership, leading to loss of shelter, livelihood or sources of livelihood; loss of access to private and/or community property.

Annex 15: Generic ESMP

This is a model ESMP to be used as a guidance document. The mitigation measures described under the project activity are for illustrative purpose only. The development of ESMP for projects should not be limited to the indicated measures.

Nature of Impact	Brief description of the anticipated impact	Proposed Mitigation Measure	Responsibility
Air Quality	• Demolition of existing structures, onsite stacking of construction materials, excavation, etc., may lead to dust emissions. • Construction activity, especially using heavy machinery during institute running days/hours can pose a risk of exposure to dust emissions to the students, teachers and the support staff. • Any diesel generator sets installed in the institute facility may result in air pollution.	Dust mitigation measures are to be undertaken at the construction site in line with Guidelines on dust mitigation measures, prescribed by CPCB. Interventions such as covering of loose/fine construction material, sprinkling of non-potable water, cutting and finishing stones in an enclosed area, restricting dust generating activities to non- institute hours, etc.	Environment Coordinator
Water Quality	• Contamination of water source / supply during construction • Large quantum of water required during the • Construction phase may lead to shortage of water in the community, especially during the dry (winter) season. • Discharge of waste water from institute into water bodies without treatment can deteriorate water quality. • Dumping of solid wastes near water bodies may result in pollution of the water body.	• The campus must have or develop a provision for quick and safe drainage of storm water. • Building must be provided with comprehensive sanitation arrangements for safe disposal of sewage and sullage. Waste water must not be diverted into any open area or water body. • Rain water harvesting system to be incorporated/ strengthened. • Procurement of treated water to be given preference. • Provision of low flow water supply fixtures (taps discharging less	Environment Coordinator

Nature of Impact	Brief description of the anticipated impact	Proposed Mitigation Measure	Responsibility
		than 12 liters per minute under 5 bar pressure, dual flush systems in all water closets, etc.).	
Soil Quality	• Haphazard dumping of construction and demolition wastes can lead to pollution impacting the soil quality of the area. • Spillage of hazardous materials, such as waste paints, fuel, oil, etc., may lead to soil contamination. • Non-filling and leveling of borrow pits excavated for construction purpose may lead to destabilization of the building structure.	• Separate stacking and reuse of any excavated top soil should be given preference. • Construction and demolition waste to be managed as per integrated waste management rules. • Safe handling, storage, transport and disposal of any hazardous wastes (e.g., ACM, waste paints, fuel, oil) at authorized disposal facilities.	Environment Coordinator
Biodiversity & Habitat	• Sites located in close proximity of habitats (including forests, wetlands, etc.) may impact the local ecosystems and biodiversity. • Unplanned design of the construction activities may lead to falling of trees, loss of biodiversity and environmental degradation.	• The design of the planned activity needs to ensure minimum impact on local biodiversity. • Falling of trees is to be avoided at all stages of the project. However, in case felling is unavoidable, permission from Forest Department is to be sought and prescribed measures are to be followed.	Environment Coordinator
Occupational Health & Safety	• Ignorance about site specific hazards may pose a potential threat to health and safety of the workforce. • Lack of PPE during construction work may pose risk to worker health and safety. • Demolition or renovation of structures containing ACM can	• Contractor procurement to ensure compliance to all Environmental, health and safety guidelines. • Labor management	Environment Coordinator

Nature of Impact	Brief description of the anticipated impact	Proposed Mitigation Measure	Responsibility
	expose workers to the hazardous wastes. • Lack of adequate facilities at the work site and at the labor accommodation (space, water, sanitation, fire safety, first-aid, • periodic health checkup, etc.) can pose pollution risk to the site.	procedures applicable to the project to be developed and implemented throughout the project sites. • Construction management plans to be developed for appropriate stocking/ storage of construction materials and tools at the construction site to avoid risk of accidents. • Barricading of minimum 3-meter height to be used at the construction site to prevent unauthorized entry Provision of fully equipped first-aid kit at construction site. • Provision of adequate drinking water and sanitation facilities to workers, including separate toilets for women. • Provision of adequate space and ventilation in accommodation facility provided to workers.	
Community Health & Safety	• Inefficient design of the campus may lead to community health issues including water logging and stagnation, health implications, community safety issues, etc. • Unplanned infrastructural interventions such as location of transformer, septic tank, borewell, etc., may create safety	• The Environmental guidelines design of institute to be followed to ensure compliance to relevant standards, while effective planning to ensure avoidance of	Environment Coordinator

Nature of Impact	Brief description of the anticipated impact	Proposed Mitigation Measure	Responsibility
	hazard, and have potential to emerge as an obstruction for any future expansion of building and other facilities. • Unregulated access to construction site may lead to trespassing and accidents. • Non-filling and leveling of borrow pits excavated for construction purpose may lead to safety risks (accidental falls, drowning in water filled pits). • Demolition of structures containing ACM without proper care can expose the community in the vicinity to hazardous wastes.	hindrance in community activity. • Access to the institute site to be regulated to ensure safety of community. • Proper leveling of borrow pits, trenches, etc., after construction activity to be ensured. • The building should not be used for 10 days after the completion of construction and maintenance activity, in order to flush out all indoor air pollution accumulated during construction. • Construction and demolition waste management strategies to be developed to ensure: a. Segregation and disposal of all construction and demolition waste in alignment with the Construction and Demolition Waste Management Rules 2016. b. Safe handling, storage, transport and disposal of any hazardous wastes (e.g., ACM; waste paints, fuel, oil)	

Nature of Impact	Brief description of the anticipated impact	Proposed Mitigation Measure	Responsibility
		at authorized disposal facilities.	
Waste management	• Improper disposal of liquid waste (sewage, sullage) can lead to environmental impacts. • Improper disposal of sanitary waste (sanitary napkins) can lead to environmental degradation and health implications within the community. • Improper disposal of organic or recyclable waste (kitchen, garden, paper and plastic) may lead to environmental degradation and pollution.	• Proper operation and maintenance of sewage and sullage management systems should be ensured. Provision for wastewater treatment and recycling should be made in the environmental management plans for the school. • Waste segregation and management plans to include recycling of recyclable wastes, composting of biodegradable wastes and proper disposal of any hazardous wastes. • Disposal of sanitary napkins, including composting of biodegradable napkins and incineration of SAP free non-biodegradable sanitary napkins, should be ensured.	Environment Coordinator
Cultural Heritage	• Project activity at location in vicinity of protected sites, structures or natural features that have archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance may lead to impacts on cultural heritage.	Clear procedures for dealing with any chance finds having archaeological, paleontological, historical significance to be defined.	Environment Coordinator

Annex 16: Environmental Guidelines for Operation and Maintenance of Institutions

The list gives indicative environmental guidelines for operation and maintenance of institutions. This list needs to be further aligned with the institute infrastructure at the time of ESMP preparation.

Site Management
Weekly visual inspection of the institute infrastructure to be conducted based on an institute specific checklist, in order to identify and record maintenance items crucial for structural safety;
Periodically check all areas of institute campus and identify sites of water logging and vector breeding. Clear water logging by providing appropriate drainage, especially in monsoons;
Composting and mulching programs to reduce waste, decrease irrigation needs, and promote healthy growth of vegetation to be developed at the institute level. Avoid burning of garden waste;
Conduct an annual 'Hazard Risk and Vulnerability Assessment' of the non-structural infrastructure; can be done as a student-teacher group exercise;
Annual maintenance of diesel generators to be conducted to ensure compliance of stack emissions to CPCB limits;
Conduct trainings of teachers and students to build capacity on ESMPs and sustainable management.
Water use and efficiency
Quarterly drinking water quality testing needs to be undertaken at a government authorized lab;
All buildings are to be metered and monitored monthly for water usage;
All water storage, distribution and usage facilities at the institute to be adequately maintained to avoid contaminating water;
Measures to be put in place to avoid overexposure of susceptible students to chemical contaminants;
Efficient water use is to be encouraged and systems need to be developed for reporting any problems, such as leakages or broken fixtures;
The maintenance and upgrading activities is to be supported by utilization of low flow fixtures and to be complemented by water reduction measures;
Half-yearly maintenance of Rain Water Harvesting system needs to be undertaken (especially prior to the monsoon)
Energy use and efficiency
All buildings are to be metered and monitored monthly for energy usage;
The institutes to develop programs to encourage efficient use of campus lighting by students and staff, including shutting off lights when rooms and/or buildings are not in use, etc.;
Wherever possible, building automation systems to be integrated for increasing energy efficiency;
The maintenance and upgrading activities are to be supported by utilization of low energy usage fixtures and to be complemented by energy reduction measures;
High-quality and appropriate lighting suitable to the work being performed to be installed;
Quarterly maintenance of Solar PV Lighting system and Solar Water Heating system needs to be undertaken.
Waste management
Develop and implement waste management plans in line with the Integrated waste management policy, 2019;
Recyclable waste needs to be segregated from general waste and sold for recycling at a periodic interval, in line with the institute infrastructure;
Waste segregation infrastructure to be developed and maintained at the institute level;
Composting of biodegradable waste needs to developed and maintained using appropriate method;

Septic tanks need to be cleared annually, through authorized service providers and the waste must be disposed as per the regulations of the local authority. The septic tank should be checked periodically, and request for cleaning need to be raised accordingly;
Periodic cleaning and maintenance of the infrastructure needs to be conducted.
Disaster management
The guidelines provided under NDMSSP 2019 need to be incorporated in the management of the institute;
Periodic safety drills for earthquake, fire, chemical accident, flooding, etc. need to be conducted at a periodic interval;
Periodic capacity building exercises of teachers and the staff need to be conducted in order to ensure emergency preparedness;
Mitigation measures need to be implemented and audited at periodic intervals in order to ensure emergency preparedness;
Fire extinguishers, fire alarms and other infrastructural interventions must be checked periodically.
Lab Safety
Ensure use of PPE in laboratories as and when required;
Ensure safe storage of chemicals in laboratories;
Ensure safe storage of equipment in laboratories;
Develop and implement hazardous waste management plans for any hazardous waste generated in chemistry labs.

Annex 17: Sate-Level Quarterly Environment Progress Report

MERITE PROJECT

STATE LEVEL QUARTERLY ENVIRONMENT PROGRESS REPORT

State		Reporting Quarter	Choose an item.	Year	

1. CIVIL WORKS/EQUIPMENT INSTALLATION ACTIVITIES

Action Taken on Issues Reported in Previous Quarter

SN	Names of Institutions in which EHS/OHS issues pertaining to Civil Works or Equipment Installation were observed/reported	Description of EHS issue / shortcoming	Whether issue is resolved?	Remarks/Comments (Mention how issues were resolved, if applicable)
1.			☐ Yes ☐ No	
2.			☐ Yes ☐ No	
3.			☐ Yes ☐ No	
4.			☐ Yes ☐ No	
5.			☐ Yes ☐ No	

Issues Observed/Reported in Current Quarter

SN	Names of Institutions in which EHS/OHS issues pertaining to Civil Works or Equipment Installation were observed/reported	Description of EHS issue / shortcoming	Was the same issue also observed in previous months and still remains unresolved?	Recommended action(s) for resolving issue
1.			☐ Yes ☐ No	
2.			☐ Yes ☐ No	
3.			☐ Yes ☐ No	
4.			☐ Yes ☐ No	
5.			☐ Yes ☐ No	

Additional Comments/Remarks, if any

2. TRAINING ACTIVITY

Action Taken on Issues Reported in Previous Quarter

SN	Trainings in which Environment related shortcomings were observed/reported in the previous quarter			Description of issue(s)	Action Taken	Whether issue is resolved?
	Title of Training	Host Institution	Dates			
1.						☐ Yes ☐ No
2.						☐ Yes ☐ No
3.						☐ Yes ☐ No
4.						☐ Yes ☐ No

Issues Observed/Reported in Current Quarter

SN	Trainings in which Environment related shortcomings were observed/reported in the reporting quarter			Description of issue(s)	Recommended action
	Title of Training	Host Institution	Dates		
1.					
2.					
3.					
4.					
Additional Comments/Remarks, if any					

3. IMPROVING INSTITUTIONS' ENVIRONMENTAL PERFORMANCE

Environmental Audits

Institutional Environmental Audits Undertaken	Status in Reporting Quarter				Important adverse audit observations or remarks, if any, in brief	Suggestions for addressing adverse audit observations
	No of institutions that have instituted 1st Audit (due in Year-2)	Total No of 1st audits completed till date (cumulative)	No of institutions that have undertaken 2nd Audit (due in Year-4)	Total No of 2nd audits completed till date (cumulative)		
Energy Audit						
Water Audit						

Annual Safety Audits

Institutional Safety Audits Undertaken	No of institutions that have undertaken Audit in reporting quarter	Total No of audits completed till date (cumulative)	Important adverse audit observations or remarks, if any, in brief	Suggestions for addressing adverse audit observations
Fire Safety Audit				
Campus Safety Features Audit (including electrical)				
Lab systems and Safety Audit				

Annual Sanitation and Waste Management Infrastructure Reviews

Reviews Undertaken	No of institutions that have undertaken Review in reporting quarter	Total No of Reviews completed till date (cumulative)	Important adverse review findings, if any, in brief	Suggestions for addressing adverse review findings
Sanitation				
Waste Management				

Overall comments of SPIU Environment Focal Point / Action Points for further improvement
Support sought from MERITE PIU, if any
Signature of SPIU Environment Focal Point Name: Date:

Annex 18: Half Yearly Environmental Progress Report

MERITE PROJECT
HALF-YEARLY ENVIRONMENTAL PROGRESS REPORT

(Tick appropriate box)

REPORTING YEAR:	
REPORTING QUARTER:	☐ Apr-Jun; ☐ Jul-Sep; ☐ Oct-Dec; ☐ Jan-Mar

1. STATUS OF ENVIRONMENTALLY RELEVANT PROJECT ACTIVITIES IN REPORTING QUARTER

OVERALL STATUS OF ENVIRONMENTALLY RELEVANT ACTIVITIES

SN	State	No of Instt	Civil Works & Equipment Installations			Training Activities		Audits	
			Total contracts awarded in reporting period	Contracts Awarded till date (Cumulative)	Works Completed till date (Cumulative)	Total No of trainings held in reporting period	Cumulative till date	No of Env Audits initiated in reporting period	Audits/ reviews completed till date (Cumulative)
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									

CIVIL WORKS AND EQUIPMENT INSTALLATION

Status Of Action Taken on Major Environment Management Issues Reported in Previous Report

SN	Major Issues that emerged in previous reporting period	States where these issues emerged	Whether suggested action was taken (describe)	In which states issue remains unresolved?	Suggested further action
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Environment Management Issues Emerging in Current Reporting Period

SN	Major Issues emerging in the present reporting period	States where issues emerged	Planned action(s) for resolution	Remarks/Comments
1.				
2.				
3.				
4.				
5.				
6.				
7.				

Comments/Remarks/Suggested Actions by SPIU Environment Focal Point

2. TRAINING AND MASS OUTREACH ACTIVITIES

Status Of Action Taken on Major Environment Management Issues Reported in Previous Report

SN	Major Issues that emerged in previous reporting period	States where these issues emerged	Whether suggested action was taken (describe)	In which states issue remains unresolved?	Suggested further action
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Environment Management Issues Emerging in Current Reporting Period

SN	Major Issues emerging in the present reporting period	States where issues emerged	Planned action(s) for resolution	Remarks/Comments
1.				
2.				
3.				
4.				
5.				
6.				
7.				

Comments/Remarks/Suggested Actions by SPIU Environment Focal Point

3. IMPROVING INSTITUTIONS' ENVIRONMENTAL PERFORMANCE

SN	State	NUMBER OF INSTITUTIONS CONDUCTING FOLLOWING AUDITS DURING CURRENT REPORTING PERIOD									
		Environmental Audits			Safety Audits				Reviews		
		Energy	Water	Completed till date (Cum)	Fire	Electrical, etc.	Lab	Completed till date (Cum)	Sanitation	Waste Mgmt.	Completed till date (Cum)
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											

Any major observations emerging from the above

4. ORIENTATION / CAPACITY BUILDING ON ENVIRONMENT UNDERTAKEN IN THIS QUARTER

SN	State(s)	Title of Training Held	Dates (from/to)	Target Segment	No. of Participants
1.					
2.					
3.					
4.					

5. REMARKS OF SPIU ENVIRONMENT FOCAL POINT

Overall Remarks

Specific issues/constraints that the MERITE PIU would like to flag **Specific support required from Bank, if any**

Signatures
SPIU Environment Focal Point **Date:**

Signatures
Project Director **Date:**

Annex 19: Elements of preparing a Resettlement Action Plan

1. **Description of the project.** General description of the project and identification of the project area.
2. **Potential impacts.** Identification of:(a)the project components or activities that give rise to displacement, explaining why the selected land must be acquired for use within the timeframe of the project; (b)the zone of impact of such components or activities; (c)the scope and scale of land acquisition and impacts on structures and other fixed assets; (d)any project-imposed restrictions on use of, or access to, land or natural resources; (e)alternatives considered to avoid or minimize displacement and why those were rejected; and (f)the mechanisms established to minimize displacement, to the extent possible, during project implementation
3. **Objectives.** The main objectives of the resettlement program.
4. **Surveys and Studies:** The findings of a household-level census identifying and enumerating affected persons, and, with the involvement of affected persons, surveying land, structures and other fixed assets to be affected by the project .The census survey also serves other essential functions: (a)identifying characteristics of displaced house-holds, including a description of production systems, labor, and household organization; and baseline information on livelihoods (including, as relevant, production levels and income derived from both formal and informal economic activities) and standards of living (including health status) of the displaced population; (b)information on vulnerable groups or persons for whom special provisions may have to be made; (c)identifying public or community infrastructure, property or services that may be affected; (d)providing a basis for the design of, and budgeting for, the resettlement program; (e)in conjunction with establishment of a cutoff date, providing a basis for excluding ineligible people from compensation and resettlement assistance; and (f)establishing baseline conditions for monitoring and evaluation purposes. As the Bank may deem relevant, additional studies on the following subjects may be required to supplement or inform the census survey; (g)land tenure and transfer systems, including an inventory of common property natural resources from which people derive their livelihoods and sustenance, nontitle based usufruct systems (including fishing, grazing, or use of forest areas) governed by local recognized land allocation mechanisms, and any issues raised by different tenure systems in the project area; (h)the patterns of social interaction in the affected communities, including social networks and social support systems, and how they will be affected by the project; and (i)social and cultural characteristics of displaced communities, including a description of formal and informal institutions (e.g., community organizations, ritual groups, nongovernmental organizations (NGOs)) that may be relevant to the consultation strategy and to designing and implementing the resettlement activities
5. **Legal framework.** The findings of an analysis of the legal framework, covering:(a)the scope of the power of compulsory acquisition and imposition of land use restriction and the nature of compensation associated with it, in terms of both the valuation methodology and the timing of payment;(b)the applicable legal and administrative procedures, including a description of the remedies available to displaced persons in the judicial process and the normal timeframe for such procedures, and any available grievance mechanisms that may be relevant to the project;(c)laws and regulations relating to the agencies responsible for implementing resettlement activities; and(d)gaps, if any, between local laws and practices covering compulsory acquisition, imposition of land use restrictions and provision of resettlement measures and ESS 5, and the mechanisms to bridge such gaps.

6. **Institutional framework.** The findings of an analysis of the institutional framework covering: (a)the identification of agencies responsible for resettlement activities and NGOs/CSOs that may have a role in project implementation, including providing support for displaced persons;(b) an assessment of the institutional capacity of such agencies and NGOs/CSOs; and (c) any steps that are proposed to enhance the institutional capacity of agencies and NGOs/CSOs responsible for resettlement implementation
7. **Eligibility.** Definition of displaced persons and criteria for determining their eligibility for compensation and other resettlement assistance, including relevant cutoff dates.
8. **Valuation of and compensation for losses.** The methodology to be used in valuing losses to determine their replacement cost; and a description of the proposed types and levels of compensation for land, natural resources and other assets under local law and such supplementary measures as are necessary to achieve replacement cost for them.
9. **Community participation.** Involvement of displaced persons (including host communities, where relevant): (a) a description of the strategy for consultation with, and participation of, displaced persons in the design and implementation of the resettlement activities; (b)a summary of the views expressed and how these views were taken into account in preparing the resettlement plan; (c)a review of the resettlement alternatives presented and the choices made by displaced persons regarding options available to them; and (d) institutionalized arrangements by which displaced people can communicate their concerns to project authorities throughout planning and implementation, and measures to ensure that such vulnerable groups as indigenous people, ethnic minorities, the landless, and women are adequately represented.
10. **Implementation schedule.** An implementation schedule providing anticipated dates for displacement, and estimated initiation and completion dates for all resettlement plan activities. The schedule should indicate how the resettlement activities are linked to the implementation of the overall project.
11. **Costs and budget.** Tables showing categorized cost estimates for all resettlement activities, including allowances for inflation, population growth, and other contingencies; timetables for expenditures; sources of funds; and arrangements for timely flow of funds, and funding for resettlement, if any, in areas outside the jurisdiction of the implementing agencies.
12. **Grievance mechanism.** The plan describes affordable and accessible procedures for settlement of disputes arising from displacement or resettlement; such grievance mechanisms should take into account the availability of judicial recourse and community and traditional dispute settlement mechanisms.
13. **Monitoring and evaluation.** Arrangements for monitoring of displacement and resettlement activities by the implementing agency, ensure complete and objective information; performance monitoring indicators to measure inputs, outputs, and outcomes for resettlement activities; involvement of the displaced persons in the monitoring process; evaluation of results for a reasonable period after all resettlement activities have been completed; using the results of resettlement monitoring to guide subsequent implementation.
14. **Arrangements for adaptive management.** The plan should include provisions for adapting resettlement implementation in response to unanticipated changes in project conditions, or unanticipated obstacles to achieving satisfactory resettlement outcomes.

Annex 20: Land Screening Format

[This form will be filled up by the PIU along with the community members at Site/Local Level]

General Information

- Title of the project: .....
- Complete address of screening locations including coordinates..... ...
- Screening Date: .....

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
Involuntary Acquisition of Land/ Land Donation/ Land Taking				
A. Will the project require land for the proposed intervention				
1. If yes, will there be any land acquisition?				
2. Is the site for land acquisition known?				
3. Is the ownership status and current usage of land known? If yes, please provide detail information at remarks column.				
4. Is there any possibility of voluntary land donation for the construction? If yes, please provide detail information at remarks column.				
5. Will there be loss of residential and commercial structures due to land acquisition? If yes, please provide detail information at remarks column.				
B. Is there any presence of squatters within the project influence area? If yes, please provide detail information at remarks column.				
6. Will there be loss of agricultural and other productive assets due to land acquisition? If yes, please provide detail information at remarks column.				
7. Will there be losses of trees, and fixed assets due to land acquisition? If yes, please provide detail information at remarks column.				
8. Will there be loss of businesses or enterprises due to land acquisition? If yes, please provide detail information at remarks column.				
9. Will there be loss of income sources and means of livelihoods due to land acquisition? If yes, please provide detail information at remarks column.				
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
10. Will people lose access to natural resources, communal facilities and services due to project interventions? If yes, please provide detail information at remarks column.				
11. If land use is changed, will it have an adverse impact on social and economic activities? If yes, please provide detail information at remarks column.				

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
12. Will access to land and resources owned communally or by the state be restricted? If yes, please provide detail information at remarks column.				
Information on Displaced Persons:				
Any estimate of the likely number of persons that will be displaced by the Project? If yes, approximately how many?				
Are any of them poor, female-heads of households, or vulnerable to poverty risks?				
Are any displaced persons from indigenous or ethnic minority groups?				
During Screening, project authority will conduct consultation with the primary and secondary stakeholders and provide their observations in the following sections (13 to 18)				
13: Who are the stakeholders of the project?				
Answer:				
14: What social and cultural factors affect the ability of stakeholders to participate or benefit from the proposed policy or project?				
Answer:				
15: Are project objectives consistent with their needs, interests and capacity?				
Answer:				
16: What will be the impact of the project or sub-project on the various stakeholders, especially women and vulnerable groups?				
Answer:				
17: What social risks might affect project or sub-project success?				
Answer:				
18: Has the project authority or any other organizations conducted any consultations with the affected community or people? If yes. Please provide a summary.				
Answer:				

Prepared by (Name): .....
Signature: ..... Date: .....